Good Governance In Public-Private Partnerships

A Resource Guide for Practitioners

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&

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Index

PART I .................................................................................................................................................. 8
UNDERSTANDING THE NEW PPP GOVERNANCE FRAMEWORK .......... 8
1 The novelty and difference of Public Private Partnerships ....................... 9
  1.1 Defining PPP .......................................................................................................................... 9
  1.2 The origin, evolution, and novelty of PPP ................................................................. 9
    1.2.1 PPP as an option in the procurement process ............................................. 12
    1.2.2 PPP as a new “participatory” approach between the Public Administration,
        private partners, and affected stakeholders ............................................... 14
    1.2.3 PPP as a new infrastructure service PPP contract type ...................... 15
    1.2.4 PPP as a new cooperative institutional relation between the partners and
        stakeholders for managing long term infrastructure contractual type PPP .... 16
    1.2.5 Public-private Joint ventures as institutional PPP ...................................... 17
  1.3 The main patterns of PPP contracts ............................................................... 19
    1.3.1 Long term relation ................................................................................................. 19
    1.3.2 Output based performance .................................................................................. 20
    1.3.3 Bundling construction, operation, and maintenance ................................... 21
    1.3.4 Risk sharing ......................................................................................................... 22
    1.3.5 Relation management ......................................................................................... 24
  1.4 The difference of PPP from other infrastructure delivery models ............. 24
    1.4.1 PPPs, public works and outsourcing .............................................................. 25
    1.4.2 PPP and concessions .......................................................................................... 31
    1.4.3 Self-sustainable concessions and PPPs ......................................................... 33
    1.4.4 PPP and Privatization ....................................................................................... 33
2 Why governance matters for Public-Private Partnerships .......................... 35
  2.1 Governance risks for the new PPP framework ............................................... 35
    2.1.1 Governance risks for a new investment decision making process ........ 35
    2.1.2 Governance risks for a new participatory approach between the PA, private
        partners and affected stakeholders .................................................................. 35
    2.1.3 Governance risk for the new long term infrastructure service PPP contract
        type ...................................................................................................................... 36
    2.1.4 Governance risks for managing the new long term infrastructure service PPP
        contract type ..................................................................................................... 36
  2.2 Solving PPP governance issues through good governance practices .... 37
    2.2.1 Accountability in PPPs ....................................................................................... 38
  2.3 Implementing good governance practice in the new PPP framework ..... 39
    2.3.1 Integrating PPP governance principles into PPP Governance policies .... 39
    2.3.2 Integrating governance principles into PPP laws and regulations ............ 41
Diagram - Australia Case: Enhancing good governance through capacity building
and knowledge management .............................................................................. 45

PART II .................................................................................................................................................. 47
3 Enhancing institutional integrity, transparency and accountability in the process for choosing the procurement option ........................................ 48
   1.1 Transparency of the process ............................................ 48
   3.1 Maintaining Institutional integrity and granting accountability of the process 51
4 Bidding process ................................................................. 54
   4.1.1 Competition ............................................................. 54
5 Contract design ...................................................................... 56
   5.1 The need for capacity and institutional integrity in contract design .... 56
   5.1.1 Contract misspecifications ............................................. 56
   5.1.2 External consultant ....................................................... 57
   5.1.3 Standardizing commercial principle for reducing conflicts and enhancing predictability ......................................................... 57
   5.1.4 PPP Advisory units ....................................................... 58
   5.2 Drafting transparent and accountable partnerships agreements .... 59
   5.2.1 Making contract terms transparent .................................. 60
   5.2.2 Balancing risks and sharing benefits between the partners .......... 66
   5.2.3 Building payment mechanisms to foster cooperation and service delivery 79
   5.2.4 Dealing with social and environmental issues in contract design .... 103
   5.3 Choosing the right balance between bundling and competition ...... 103
   5.3.1 Contract duration and investment .................................... 104
   5.3.2 Contract duration and flexibility ....................................... 107
   5.3.3 Contract duration and competition .................................... 109
   5.3.4 Contract duration, renewals and performance incentives .......... 111
   5.3.5 Service unbundling ....................................................... 112
   5.4 Building transparent and accountable contractual and institutional mechanisms for managing the change of circumstances ................................................................. 114
   5.4.1 Price variations ............................................................. 115
   5.4.2 Flexibility ....................................................................... 121
   5.4.3 Early termination ........................................................... 142
6 Contract design .................................................................... 150
   6.1 Building transparent and accountable partnerships agreements .... 152
   6.1.1 Other Governance Issues in Contract Design ....................... 155
   6.1.2 Balancing risks and sharing benefits between the partners ........ 156
   6.1.3 Government Guarantees................................................ 164
   6.1.4 Defining public goals through measurable output based specifications .... 166
   6.1.5 Contract Incompleteness and payment mechanisms .............. 168
   6.1.6 Dealing with social and environmental issues in contract design ... 176
   6.1.7 Models for optimizing contract period ............................... 179
   6.1.8 Financial principles of PPP contract design ......................... 183
   6.1.9 Managing the disclosure of confidential issues ..................... 187
   6.2 Building institutional and contractual mechanisms for managing change of circumstances ................................................................. 190
   6.2.1 Price variations ............................................................. 191
6.2.2 Flexibility ................................................................. 195
6.2.3 Creating institutional mechanism for managing the relationship between the partners and other stakeholders ................................................................. 197
6.2.4 Dispute resolution ................................................... 200
6.2.5 Step in rights ........................................................... 202
6.2.6 Early termination ..................................................... 203
6.2.7 Contract Design Checklist ........................................ 204

7 Contract management during construction, operation expiry and termination 212

7.1 Key elements of effective contract management ........................................ 212

7.1.1 Resources ................................................................... 216

Increasing a Good Governance: Outsourcing or contracting-out .................. 218

7.1.2 Governance responsibilities ........................................... 222

Institutional alternatives ............................................................................. 227

Regulatory Agency Approach .................................................................. 227

Recent PPP Approach ................................................................................ 233

Choosing an Alternative ........................................................................... 235

7.1.3 Managing the information and knowledge ......................................... 236

1.2 Monitoring the private partner and reporting its performance ............. 245

1.2.1 Reporting requirements for the construction stage (construction progress, commissioning and hand over reports) ......................................................... 246

1.2.2 General framework for service performance monitoring .................. 252

1.2.3 Monitoring private partner business performances .......................... 253

Supervision of Operative Stages: Tasks and Instruments ........................... 253

1.2.4 Monitoring private partner cash flows and project financial health ...... 255

1.2.5 Risk monitoring (government borne and transferred risk) ................. 271

Examining the Regulatory Performance .................................................. 272

1.2.6 Relationship monitoring .................................................... 274

1.2.7 Monitoring and reporting contract expiry ....................................... 274

1.3 Monitoring the relationship with other stakeholders ......................... 274

1.3.1 Monitoring and reporting on social and environmental issues .......... 277

1.3.2 Monitoring and reporting on Public access, consumer protection community consultation .................................................................................................................. 277

1.4 Ordinary contract administration .................................................... 279

1.4.1 Payment to the private partner and payment report .......................... 279

1.4.2 Managing the relationship with the private partner and affected stakeholders ................................................................. 279

Appeal Procedures .................................................................................. 282

Stakeholder Relations ............................................................................. 284

1.4.3 Managing flexibility to meet the changes ....................................... 291

Guarantees ............................................................................................... 294

1.4.4 Managing expiry and termination ................................................ 298

1.5 Managing change of circumstances and contract under stress ............. 298

Incidence of Distress Problems .................................................................. 300

Costs of Distress Situations ...................................................................... 304

A Taxonomy of Distress Situations .......................................................... 307
9 Contract management during construction, operation expiry and termination

9.1 Making the private partner performances transparent and accountable .......... 360
  9.1.1 Reporting requirements for the construction stage (construction progress, commissioning and hand over reports) ................................................. 362
  9.1.2 General framework for service performance monitoring .................. 362
  9.1.3 Monitoring private partner business performances................... 362
  9.1.4 Monitoring private partner cash flows and project financial health ..... 362
  9.1.5 Risk monitoring (government borne and transferred risk) .......... 362
  9.1.6 Relationship monitoring.................................................. 362
  9.1.7 Payment to the private partner and payment report .................. 362
  9.1.8 Monitoring and reporting contract expiry ............................ 362
9.2 Preserving participation and institutional integrity in contract management . 362
  9.2.1 Monitoring and reporting on social and environmental issues ............ 362
  9.2.2 Monitoring and reporting on Public access, consumer protection community consultation ................................................................. 362
9.3 Enhancing transparency, accountability in managing change of circumstances through institutional and contractual mechanism .................. 362
  9.3.1 Managing the relationship with the private partner and affected stakeholders 362
  9.3.2 Managing flexibility to meet the changes .................................... 362
  9.3.3 Managing expiry and termination ......................................... 362
9.4 Good governance in distressed circumstances........................................ 362
  9.4.1 Managing economic distress .................................................. 362
  9.4.2 Managing financial distress .................................................. 362
9.4.3 Managing Operational distress .......................................................... 362
Bibliografía .................................................................................................. 364
PART I

UNDERSTANDING THE NEW PPP GOVERNANCE FRAMEWORK
1 The novelty and difference of Public Private Partnerships

1.1 Defining PPP

What are the common elements found in most PPPs?
[An introductory guide to Public-Private Partnerships
Hong Kong Government Efficiency Unit, 2008]

1. The government has identified a value for money benefit for the specific project
2. The government retains political responsibility/accountability to secure services for the community
3. The government defines the timeframe in which the services must be delivered; and the quality and quantity of services needed
4. The private sector delivers the services and finances or part finances the project
5. A long-term relationship is established between the client department and the consortium typically between 10 and 30 years, depending on the nature of the services, assets or facilities to be delivered
6. The different functions of design, construction, maintenance and operation are integrated to release the synergies between them and discourage low-capital/high-operating expenditure solutions
7. Risks are allocated and shared between the public and private sectors
8. There is an emphasis on output and outcome-based specifications
9. A whole life approach to cost is taken.

1.2 The origin, evolution, and novelty of PPP

Public-Private Partnerships (hereafter PPP) provide a new “model” for infrastructure service delivery, which combines elements borrowed from other legal economic and financial structures. A mixture of elements derived from public procurement, project finance, concession contracts, and policy network theories provides the background for PPPs’ structures. PPPs not only articulate such elements in one product but also constitute separate evolutions of the structures they originate from. In part, PPPs have been created to solve some problems those domains have generated or were not able to solve efficiently. However, PPPs are not meant to replace those domains but to provide alternative options to them. If it is therefore impossible to understand PPPs

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independently from those disciplines, studying PPPs may also serve to grasp new trends and possible evolutions of the domains they derive from. This is particularly true because PPPs started to influence the same structures they originate form by the same innovations PPPs have introduced. PPPs appear therefore as a familiar, yet behind this buzzword lays a new logic for public investment decision-making and management.

The natures of PPPs are associated with a new contract, procurement and relationship type. For some, a PPP is a new “contract type” whose main characteristics – risk sharing between the public and private party; bundling of construction and operation; output base specifications; and long term commitments – serve to define and distinguish the type. Others see PPPs as a “procurement type”, alternative to traditional public procurement (including outsourcing), and concession. Fore some others, PPPs constitute new “relationship types” between the Public Administration (PA), private parties and stakeholders involved in an infrastructure service delivery project. Indeed, a PPP is all of the above: a new contract, procurement, and relationship type. The origin of these typological diversities is mainly due to the different perspective legislators, practitioners, and scholars have had toward PPPs.

Different regions have developed a different approach and structures of PPPs, which start to converge in one concept. With a hyper-simplification we may say that the contractual, procurement and relationship type represent a different regional approach to PPPs: the contractual perspective has been that of continental Europe and Civil Law countries; the procurement viewpoint has been that of the most developed Commonwealth and Common Law countries (UK, Australia, and South Africa); and the relationship angle has been that of the United States of America (US). Yet, if the divergent public-policy context argues for the need to understand such PPPs within these regional and national contexts, it also helps to grasp separately how the different features of PPP have evolved around the world to form a new concept that sums all of them.

PPP as procurement
[Australian Government, Department of Finance and Deregulation
Introductory Guide to Public Private Partnerships - December 2006]

A PPP is a method of procurement. It involves the use of private sector capital to fund an asset – that may not be ultimately owned by the public sector – which is used to deliver outcomes for an Australian Government agency. PPPs are used most frequently for major asset and infrastructure procurements. PPPs reconfigure the procurement process by placing emphasis on the service or capability that the public sector requires rather than the asset(s) used to provide them. Typically, the responsibility for delivery of the service or capability is shared between the public and private sectors. Under a PPP, the private sector invests in the creation or acquisition of the asset(s) required to facilitate the delivery of a service or capability. The public sector provides payments to the private sector that are contingent on their performance, allowing them to recover their initial investment.

**PPP as a contract**

I - Le contrat de partenariat est un contrat administratif par lequel l'Etat ou un établissement public de l'Etat confie à un tiers, pour une période déterminée en fonction de la durée d'amortissement des investissements ou des modalités de financement retenues, une mission globale ayant pour objet le financement, la construction ou la transformation, l'entretien, la maintenance, l'exploitation ou la gestion d'ouvrages, d'équipements ou de biens immatériels nécessaires au service public.
Il peut également avoir pour objet tout ou partie de la conception de ces ouvrages, équipements ou biens immatériels ainsi que des prestations de services concourant à l'exercice, par la personne publique, de la mission de service public dont elle est chargée.

Different legal systems favored the separate evolution of PPPs’ structures, which in the last decade have influenced each-others. In continental Europe, the difficult transplanting of Common Law-based PPPs structures into Civil Law systems discouraged the adoption of such model and consequently the creation of shared PPP concept. The British and Australian model suffered the same “transplanting” difficulties as they treated PPPs as a variety of government procurement while in Civil Law countries PPPs were considered a special typology of contracts. The Commonwealth PPP model was highly influenced by the US model. In the UK and Australia, the US PPP “partnership type” was institutionalized into the “procurement type” and highly commercialized through a very successful acronym: “PPP” whose third P constitutes, in fact, the real novelty. For the less famous North American model, traditionally associated with urban renewal and downtown economic development, (which by far preceded the British one only introduced in 1992 with the Private Finance Initiative), the difficulty of its replication into the non-Anglo-Saxon world was probably due to its ignorance in addition to the different socio-economic, institutional, and political environment in which it was developed. Nonetheless it is worth noticing that the US seems to have rediscovered PPPs during the last years as a mean for rebuilding or updating its aging infrastructure network. Though, curiously, the US is reintroducing a PPP more influenced by the European PPP “contract type” than the British or Australian one.

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Seeing a PPP as a procurement is not antithetic to considering PPP as a specific contract. Indeed, procurement and contract are just two elements of a more complex structure that serves to constitute PPPs. If a PPP may be the result of a public investment decision process; the contract crystallizes the result of that process into a legally binding and enforceable form. On the other hand, the procurement as a “process” may take different forms (PPP, concession, traditional procurement, etc.) and contracts, as “legal instruments” for regulating infrastructure delivery model, may also be of different type (public-private partnership agreements, contract for the sale of services, concession contract, etc.). Additionally, it has to be noticed that a specific type of contract may also be connected to special rules of procurement. Yet, shifting the focus from the contract side to the procurement side had some important implication.

1.2.1 PPP as an option in the procurement process

A PPP is a “procurement option” among others. This implies that the procurement process for infrastructure service delivery have been structured in way to choose the best option. This is the option providing more value, where “value” means the option generating the most allocative\(^5\), productive\(^6\) and adaptive\(^7\) efficient public investment. One first remarkable novelty of PPP has consequently emerged at the institutional level: PPP reforms impulse a new process for choosing procurement options of infrastructure services. A PPP is therefore a modality for undertaking public investments for providing an efficient response to the demand of the public (users and affected stakeholders) of an infrastructure services. A modality of investment alternative to others that imply the use of funding from tax revenue or public borrowing, such as traditional public procurement or does not imply any of the above such as in the case of self-sustainable concession.

### PPP as the most valuable infrastructure service delivery option


I. - Les contrats de partenariat donnent lieu à une évaluation préalable, réalisée avec le concours de l’un des organismes experts créés par décret, faisant apparaître les motifs de caractère économique, financier, juridique et administratif qui conduisent la personne publique à engager la procédure de passation d’un tel contrat. Chaque organisme expert élabore, dans son domaine de compétences, une méthodologie déterminant les critères d’élaboration de cette évaluation dans les conditions fixées par le ministre chargé de l’économie. Cette évaluation comporte une analyse comparative de différentes options, notamment en termes de coût global hors taxes, de partage des risques et de performance, ainsi qu’au regard des préoccupations de développement durable. Lorsqu’il s’agit de faire face à une situation imprévisible, cette évaluation peut être succincte.

[Poland XXXXX] 1.Public-private partnership may be a form of implementing an undertaking, in the procedure and under the principles set out herein, if this brings benefits for the public interest

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\(^5\)  
\(^6\)  
\(^7\)
that outweigh the benefits resulting from other methods of carrying out such undertaking.
2. A benefit for public interest shall mean in particular savings in expenditures of the public higher standard of the provided services, or lower inconvenience for the surroundings.

Through the procurement process PPPs introduced a new logic for public investment decision-making. This logic works a two level: at the identification of the public investment project; and at identification of the modality for carrying out the same investment. Thus PPPs are the result of a two level decision making process for choosing the most valuable infrastructure service delivery process via a separate (1) project, and (2) procurement option assessment.

PPP introduce a methodology, a process and an institutional framework for comparing, choosing, and supervising the options of the public intervention in term of value. Specifically, “value for money” intended as the optimum combination of whole life cost and quality (or fitness for purpose) of the project investment to meet the project’s stakeholder requirement. Beyond the process, this novelty introduces a remarkable element of transparency and consequent accountability, which rationalize and open the decision-making route to the public. It reduces the space for unquestionable

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8 HM Treasury, Government Accounting, 2000
discretion and imposes justifications for the decision to be taken, which helps itself generating efficient decision-making.

1.2.2 PPP as a new “participatory” approach between the Public Administration, private partners, and affected stakeholders

PPPs introduce a new “participatory” approach between the Public Administration, private partners, and affected stakeholders for financing, and managing infrastructure services. This concept of partnerships is articulated in two dimensions that may or may not coexist at once. The first dimension of partnership works at the organizational level and permits co-participation in the decision making which is achieved by the constitution of organizations such as joint venture companies or purpose built organization with a public-private joint ownership (institutional PPP). It may also involve policy-networks as special arrangements for public-private cooperation. Those networks open the door to increased involvement in the partnership of stakeholders other than the private partners, such as consumers, staff, regional and local entities etc. Their goal is fostering coordination between the partners and affected stockholders in addition to increase their participation and consequently favors the legitimacy of the PPP. The second dimension works at the financial level and permits risk (and reward) sharing between public and private parties, which is achieved by financial engagements that may embrace co-financing or co-funding, as well as temporal transfer of public asset ownership to private parties (as in the case of Build-Own-Transfer, Build-Own-Operate-Transfer, Sale-and-Lease-Back contracts, etc.).

PPPs were used as an instrument for integrating the public and private components of local community. This meaning of “partnership” as originally used in the context of urban regeneration in the US, helps to understand the new relationship approach of PPP between the PA, private partners, and affected stakeholders within infrastructure service delivery projects. In that context, often arising out of community-led attempts to deal with the crisis of government in American communities the integration of the parties was aimed at promoting a policy making more responsive to the community’s needs and to develop a cost-efficient ways to providing local services using resources from both the public and private sector. Resource constraints (including financial, technological, or lack of capacity), difficulties in dealing with interconnected issues, and the need of genuine participation of the local community all push forward a new form of organizational, participative, managerial collaboration.


The partnership involves a joint decision-making process rather than a principal-agent relationship in which the public actor defines the problem and provides the specifications of the solution. It also implies a relationship whereby each of the participants should be capable of bargain in its own behalf, rather than having to refer back to other sources of authority. In PPPs, both parties are involved at an early stage in developing effective joint outputs and arrangements that the partners are able to adapt to the changing political economy of the infrastructure service provision. PPPs try to overtake the “the long standing idea of a vast difference between Government and industry, or to put it another way, between hierarchy and market, between the general interest and the self interest”.

1.2.3 PPP as a new infrastructure service PPP contract type

PPPs use of infrastructure service PPP contract types that reflect the long-term public-private institutional dynamic integration. That integration includes the redefinition of roles and responsibilities of the public and private parties. The PA analyzes in a participatory process the service needs and defines the level of public services to be provided. The long term characteristic of the institutional-contractual type PPP allows:

- defining services in terms of required final output
- bundling the construction and operation phase of an infrastructure service project
- inserting a certain level of flexibility into the contract that can be subsequently managed according to the change of circumstances by the partners

PPP are mostly associated with concessions, which are normally characterized by a “user pay” principle. As a full user pay system is only available for self-sustainable concessions, non self-sustainable concessions are generally characterized with the presence of some kind of subsidy. That is normally provided by the public administration (PA). By that subsidy, the PA integrates the payment of users to make the underling project economically or financially viable.

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11 As noted by Peters, “This autonomy will be especially difficult to come by for the public sector participants in a partnership, given that there are usually multiple levels of control and deliberation, and given further that if any public money is involved it will have to be made available through the normal budgetary process. [...] It is not uncommon for contract authority to be granted to an administrative entity, although even then there will have to be a legislative action after the fact to appropriate the money.” Peters B. G., “With Little Help from Our Friends: Public-Private Partnerships as Institutions and Instruments” in Pierre J. Partnerships in Urban Governance, Macmillan Press LTD, 1998, pp.12
PFI model, which applies a “public sector pay” principle is an evolution of the concessional model. The PFI model, which has its origin and denomination in the Private Finance Initiative, usually relates to the procurement of public facilities where usage risk cannot be transferred to the private sector such as in the case of social infrastructures. The payment to the private service provider by the PA is nonetheless based on the availability of the facility.

The PFI deal

[HM Treasury, Managing public Money, 2007]
Private Finance Initiative (PFI) deals offer public sector organisations a structured way of contracting with a supplier to construct a facility and then purchase associated services of a specified quality over a sustained period. Because the private sector contractor puts its own funds at risk, it has powerful incentives to deliver to time and cost, and can thus offer value for money. PFI procurement is a flexible, versatile and often effective technique. But it is not appropriate for every project.

1.2.4 PPP as a new cooperative institutional relation between the partners and stakeholders for managing long term infrastructure contractual type PPP

PPPs institutionalize the relationship between the partners and stakeholders for managing long-term infrastructure contract characterized by risk sharing and high deal complexity. So far, the focus on PPP has been principally concentrated on the constitutive moment of the public-private cooperation, on the new PPP participatory institutional-relationships, and a new contract type. Yet, the participatory approach offers also a light on the operational aspect of PPPs after the procurement process, in the most dynamic phase of construction and operation. There, on the one hand, the same nature of PPPs, characterized by a public-private risk sharing due to a market failure, suggests an approach that attempts to avoid the wholesale shifting of commercial and investment risks to actors who are divorced from the political economy of service provision. On the other hand, it looks to mechanism for adapting incomplete contractual commitments to the change of circumstances that may affect the economic and financial equilibrium as well as the social demands of the public. It is in that phase that “institutional momentum” regains, in PPPs, a principal role for managing those changes.

PPP is a pragmatic attempt to go beyond a relationship of the two parties based on highly regulated contracts which results to be less suitable for situations in which project and/or goals can hardly be specified, are characterized by interdependence or new creative solutions are needed. Furthermore, PPPs take into account the aspect of the uncertainty of the future and the knowledge that not everything can be written into detailed contracts. Where extremely complex contracts were needed, the high cost of designing, monitoring and enforcing these contracts may make the PA better off
unbundling construction and operation or undertaking public works, unless relational contracts can be set up. PPPs suggest a new partnership-based approach to contracting.

**PPPs aim at overtaking confrontational contracting through institutional cooperation.** Instead of persuading a misleading public-private contracting which is based on the mutual attempt to take advantage of the other party, in PPPs both parties find it advantageous to find ways to helping each other to be successful.¹⁴

“Rather than relying on the bargaining of individuals in one or a series of negotiations to generate collective actions, the actors involved instead choose to create an organization (or an “institution”). That institution will solidify the meta-level bargains made, and provides the basis for a continuing exchange within a set of mutually agreed rules”. Therefore, “PPPs can be seen as stable institutional structures that are governed by shared understandings of priorities and values, as well as by sets of rules that have been mutually agreed upon by the partners. This stability and institutionalization can be seen as a mechanism for reducing transaction costs and facilitating decisions through creating common perspectives on policy”.¹⁵

**The achievement of synergies, the research for innovative solutions, and the interaction of multiple players require exchange of information and ideas between the partners.** If the reason of being of PPP is the creation of extra value because of the cooperation of the public and private partners¹⁶, the extra value of PPP has to be greater than the extra organization, transaction and agency costs that results form the more intense forms of coordination. To do so, the tensions that arise from the interdependency and competing self-interests of the partners have to be mitigated through interaction and negotiation processes during the long period the partners are tied together. Mechanism and rules that support a cooperative interaction have to be developed, and the parties have to focus on “project” as much as on “process” management and, eventually updating and redesigning those process.

### 1.2.5 Public-private Joint ventures as institutional PPP

A Joint Venture (JV) agreement is an alternative approach to a traditional PPP contract where the public-sector party and the private-sector party create a joint company for the provision of public services. Joint Stock companies, Public Interest Companies, *Societe Mixte*, etc. are used as distinct type of PPP, particularly where a clear purchaser-provider split cannot be delineated due to the complexity of the function and the need to protect the public interest.¹⁷ The JV company is typically a separate legal identity that carries out the common enterprise of the public and private partners. Both partners own the JV shares and place representatives in a board of directors.

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¹⁴ BOVAIRD T., *cit.* pp. 199
¹⁵ PETERS B. G., *cit.* pp.15
In a JV each party brings its own expertise on a particular area of the project and risks are shared among the contracting parties. For example, the public-sector party may have more expertise in dealing with planning issues, while the private-sector party may have a technical advantage in designing issues. Being a shareholder in the JV, the public-sector party has greater input as regards to the management and outcome of the project compared to other PPP agreements.

The public-sector party in a JV shares not only risks but also rewards, i.e. profits. Since it holds a controlling interest in the company, it directly enjoys the benefits of the project for the JV. However, conflicts of interest and corporate governance problems may arise as long as the public sector is not only a JV shareholder but also the regulator of the sector in which the company develops. It may then happen that the public-sector party faces a trade-off between increasing the project’s profits and safeguarding the public needs. For example, a representative of the public-sector party serving on the board of directors may find inconsistencies between her fiduciary duties to the JV and her responsibilities as public servant.

JV entails participants sharing ex-post the cost, risks and benefits that arise form the project while in PPP contract participants initially allocate risk, cost and benefit of the project ex ante by explicit contractual arrangement. Consequently, JV seems to carry a higher probability of risk for the public sector. This assumption is true only in the case the contractual JV and not perused through a special purpose vehicle which can limit the liability of the contributing entity to the equity or debt provided.

Public participation in a JV (even limited in time) may, in specific circumstances, facilitate or reduce the cost the financing, and increase the flexibility of the deal. It may also facilitate the relation between the parties by fostering the reciprocal understanding, sharing of objectives and reducing the asymmetry of information. Moreover, especially in social infrastructure or in facility that include a public core serve such as hospitals, JV may facilitate the coordination and integration of public and private activity.

Hybrid PPP The sale of a majority or minority stock ownership in a public company, which involve a partial privatization, does not per se constitute a PPP.

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**Public stake in a Special Purpose Vehicle (SPV)**

[Brazil: Lei 11.079, Art. 2]

§ 4 The Public Administration is forbidden from holding the majority of the voting capital of the special purpose company.

§ 5 The prohibition set forth in § 4 shall not apply to the possible acquisition of the majority of the voting capital of the special purpose company by a state-controlled financial institution, should the special purpose company default in its obligations under a loan agreement.

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Joint financing arrangement

[Australia, New South Wales, Public Authorities (Financial Arrangements) Act 2005 (Cl.) 55A]
(1) Activities that are joint ventures:
55 A (1) Activities that are joint ventures:
For the purposes of section 22K of the Act (but subject to subclause (2)), an activity of a commercial nature that:
(a) is entered into for the purposes of profit or gain, and
(b) is carried on jointly by an authority and another person, and
(c) involves a range of technical, managerial and financial resources or other assets in the form of jointly controlled operations, assets and entities (either within or outside of Australia, or both), is prescribed as an activity that is within that section.
(2) Excluded activities:
55 A (2) Excluded activities:
For the purposes of section 22K of the Act, the following activities are prescribed as not being within that section (but only if the activity is carried on in New South Wales or is related to an activity carried on in New South Wales):
(a) an activity carried on by two or more authorities but with no other person involved,
(b) an activity carried on by an authority and an agency of the Commonwealth or of another State or Territory but with no other person involved,

[NSW Treasury Circular 06/18 10 July 2006 explaining the new Clause (cl) 55A of the Public Authorities (Financial Arrangements) Regulation 2005] (1) Activities that are joint ventures: These include an activity of a commercial nature, for profit or gain, carried on jointly and involve a range of technical, managerial and financial resources or other assets in the form of jointly controlled operations, assets and entities.
(2) Excluded activities (but only if the activity is carried on in New South Wales or is related to an activity carried on in New South Wales):
(i) Joint ventures carried on exclusively by authorities under the PAFA Act;
(ii) Inter-government (including other States/Territories/Commonwealth) joint ventures;
Authorities are to evaluate which of their joint ventures are exempt from the Treasurer’s approval, based on the above criteria. All other joint ventures requiring the Treasurer’s written approval are to be submitted to NSW Treasury via the authority’s Agency Relationship Manager.

1.3 The main patterns of PPP contracts

The most frequently used PPP model is the long term institutional-contract type PPP. Its main characteristic is provided by the (1) long duration of the relationship it established and partially regulates. Such long duration allows an (2) output specification of the performances of the private party and eventually the (3) bundling of the construction and operation phase. The long duration implies the occurrences of events that may have an impact on the service delivery as well as on the parties. That requires an efficient (4) risk allocation and (5) relation management.

1.3.1 Long term relation
A key element of PPPs, whether in the contract or joint venture form, is the long term pattern of the relationship between the public and private partners. Indeed, the long duration is an opportunity and a challenge for both parties. It allows creating synergies as well as conflicts, innovative solutions as well as obsolete unchangeable output, stabilizing or destabilizing fiscal budgets, detonating social backlash or fostering constituencies’ support. In all cases, the long term duration bounds the parties as marriages do. Yet in PPPs both parties are called to have an active role in the marriage, and not only at the signing ceremony.

The obligations of the parties for the duration of the partnership are crystallized in highly complex contract. The private party’s performances are normally stated in terms of required final output (see below). This implies in many cases the bundling of the construction and operation phase, which are contracted to a single private entity, normally in the form of a consortium. The long term dimension allows the private parties to manage quite freely its investment along the duration of the partnership for providing the mentioned output-based services, eventually benefitting from its productive efficiency. The benefit for the public party is having a single counterpart (in some jurisdiction called general contractor), that is entrusted of achieving specific outputs, which ultimately generate short and long term public outcomes. The reputational risk for the PA and the private parties, in addition to a system of incentives and penalties, provides some form of glue for the partners to stay together. Yet, PPPs allow the parties to manage the endogenous, as well exogenous risks which may affect the stability of the partnership in the long run, with an enhanced relationship management that includes the participation of affected stakeholders.

Long term duration of PPP

[Portugal: Decreto-Lei n.º 86/2003, de 26 de Abril, Artigo 2.º] 1 - Para os efeitos do presente diploma, entende-se por parceria público-privada o contrato ou a união de contratos, por via dos quais entidades privadas, designadas por parceiros privados, se obrigam, de forma duradoura, perante um parceiro público, a assegurar o desenvolvimento de uma actividade tendente à satisfação de uma necessidade colectiva, e em que o financiamento e a responsabilidade pelo investimento e pela exploração incumbe, no todo ou em parte, ao parceiro privado.

5 - Excluem-se do âmbito de aplicação do presente diploma:
[..]
e) Todos os outros contratos de fornecimento de bens ou de prestação de serviços, com prazo de duração igual ou inferior a três anos, que não envolvam a assunção automática de obrigações para o parceiro público no termo ou para além do termo do contrato.

[Brazil: Lei 11.079, Art. 2] [..]
II – the term for the provision of services is less than 5 (five) years; or

1.3.2 Output based performance

A recurrent pattern of long term PPP contract is the output based specification of the private sector performances. An output specification defines the performance
standards to be achieved by the delivery of the service. The provision of output based specifications has mainly three effects. It allows the private party to determine the innovative cost-effective solutions for delivering the service according to the output. It frees the public sector from design and construction risk. It also put the user of the service at the center of the performance delivered by the private party.

The output specification is important not only for control and monitoring but also to design an incentive-oriented payment mechanism. Well-defined performance standards allow to reward the private partner for meeting them and to penalize it for failing to do it, i.e. to establish a system of carrots and sticks. A results-based payment mechanism has the advantages of targeting directly the project’s outcomes the public-sector party wishes to achieve while giving freedom to the private-sector party to select the process systems and equipment. In other words, this payment mechanism turns the private partner’s creativity and know-how instrumental to the pursuit of the public sector’s aims.

The difficulty of drafting output specifications in some sector as well as the call for ensuring that a specific need is met may require the use of some input-based specifications. For the purpose of control and monitoring the service provision, the performance standards should be clearly defined, measurable in quantitative and qualitative terms, and verifiable by third parties like courts or arbitrators.

### Introduction of output base specification

[Chile, Proyecto de Ley que modifica la Ley de Concesiones de Obras Publicas y otras normas.]

En primer lugar, siguiendo las tendencias mundiales, el proyecto propone establecer explícitamente, como principio rector de todo el sistema de concesiones de obras públicas, la obligación que asume el concesionario de mantener, durante toda la duración de la concesión, los niveles de servicio y estándares técnicos determinados en las bases de licitación y en el respectivo contrato.

Con lo anterior se pretende asegurar el efectivo cumplimiento de los fines públicos que fundamentan la inversión en infraestructura, más allá de la ejecución de especificaciones técnicas que, por sí solas, no dan cuenta suficiente de las necesidades ciudadanas que el sistema de concesiones de obras públicas está llamado a satisfacer.

### 1.3.3 Bundling construction, operation, and maintenance

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20 For example, in the water sector, an output specification could be the frequency of water testing and threshold values of water purity, preferably a third party implementing the tests; in the transport sector, an output specification may include a certain level of lighting, signage, and road surface maintenance.
The *bundling* of project phases into a single contract is the main characteristics of PPP contracts. If we consider the different stages of a project as comprising the design (D), the building (B), the finance (F) and the operation and management (O), we have that PPPs differ in terms of which of these four stages are delegated to the private sector. However, the term PPP is generally used to indicate a substantial involvement of the private sector in at least the building (or renovation) and operation of the infrastructure for the public-service provision. The bundling of project phases encourages the private-sector party (typically a consortium of firms) to think about the implications of its actions on different stages of the project (from the building to the operation) and thus favours a whole-life costing approach (see Bennett and Iossa (2006), and Martimort and Pouyet (2007) for an in depth discussion).

**Bundling**

[Ordonnance n° 2004-559 du 17 juin 2004 sur les contrats de partenariat Ar.1] 1. Les contrats de partenariat sont des contrats administratifs par lesquels l'Etat ou un établissement public de l'Etat confie à un tiers, pour une période déterminée en fonction de la durée d'amortissement des investissements ou des modalités de financement retenues, une mission globale relative au financement d'investissements immatériels, d'ouvrages ou d'équipements nécessaires au service public, à la construction ou transformation des ouvrages ou équipements, ainsi qu'à leur entretien, leur maintenance, leur exploitation ou leur gestion, et, le cas échéant, à d'autres prestations de services concourant à l'exercice, par la personne publique, de la mission de service public dont elle est chargée.

2. Le cocontractant de la personne publique assure la maîtrise d'ouvrage des travaux à réaliser.

3. Il peut se voir confier tout ou partie de la conception des ouvrages.

4. La rémunération du cocontractant fait l'objet d'un paiement par la personne publique pendant toute la durée du contrat. Elle peut être liée à des objectifs de performance assignés au cocontractant.

**1.3.4 Risk sharing**

The allocation of risks between the parties serves to mitigate the overall project risk. This meaning that is conventional in the project finance literature\(^\text{21}\) is a form of credit enhancement. Yet in the PPP arena, the term “risk sharing” has often been used to imply the allocation to the private party of the major public infrastructure risks (design, construction, and principally financing). The reason of this transfer was nonetheless associated to off-balance financing and seen as solution for public financial constraints. The prospective of receiving the delivery of public infrastructure at no cost have proved nonetheless generally difficult to achieve for self sustainable concession itself, impossible for non self-sustainable public infrastructure service delivery.

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[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004, Considerando]

..Que con motivo de la restricción presupuestaria que enfrentan las dependencias y entidades de la Administración Pública Federal, resulta fundamental la participación de los sectores sociales y privado como coadyuvantes en el objetivo de hacer un uso eficiente del gasto público federal; Que es necesario aprovechar la experiencia y los medios de financiamiento y desarrollo de infraestructura con que cuentan los sectores social y privado, con el fin de dirigir los recursos público hacia las funciones esenciales de la Administración Pública Federal, así como a la prestación eficiente de los servicios públicos por parte del Estado; Que una forma de incrementar la eficiencia en el uso de los recursos del sector público es transferir a los sectores social y privado la mayor cantidad de riesgos y contingencias relacionados con los costos financieros y de ejecución de obras, mediante la utilización de esquemas para la realización de proyectos para prestación de servicios con base a los cuales se celebran contratos de servicios de largo plazos, a fin de que el gasto de cada ejercicio fiscal se concentre en los aspectos más importantes de la función pública; Que el grado de eficiencia que los sectores social y privado pueden aportar a las dependencias y entidades de la Administración Pública Federal en la prestación de servicios de largo plazo, con el uso de activos que posean dichos sectores, puede redundar en ahorros significativos para las dependencias y entidades, con el consecuente incremento en la eficiencia y racionalidad del gasto público a ser ejercido anualmente..

Differentiating “funding” and “financing” of a project.

“A project may be privately financed, but service payments to the private party would still be funded out of the State Budget. The distinction revolves around whether or not a Privately Financed Project (PFP) provides additional funding on top of what is normally provided in the State capital investment program. This in turn depends on the type of project – i.e., whether it is a Social Infrastructure PFP or an Economic Infrastructure PFP.

- In the case of social infrastructure, PFP procurement normally does not generate additional funding over and above what is provided in the State capital program. Potential social infrastructure PFPs must be approved and funded for, using conventional procurement methods, before a decision is taken to use PFP procurement on value-for-money grounds.

- Economic infrastructure, however, has the potential to add to the pool of resources for capital investment. Such projects are generally funded by third party revenues (user charges) and may not require net additional funding from the Government’s consolidated revenue. To the extent that economic infrastructure PFPs top up existing resources, this frees up capital resources and gives the Government the capacity to bring forward capital expenditure which it might not otherwise have undertaken”.


The emphasis of risk sharing should be on “efficient risk allocation” or “allocate the risk to the partners who are best able to manage those risk and thus minimize costs while improving performances” instead of on “more risk to private
sector the better”. This is also the consequence of the introduction of contracts whereby the private party’s performances are normally stated in terms of required final output.

A second meaning which is in reality a specification of the first started to predominate in PPPs: “participation” in the risk of the public party at the financial level by way of public support via guarantee, capital contribution, transfers of assets or commitments in kind. In both cases risk sharing serves to make the PPP sustainable and normally bankable (able to serve debt incurred with its financing).

The long term duration PPP makes the management and supervision of risk of risk a fundamental element of its stability.

1.3.5 Relation management

1.4 The difference of PPP from other infrastructure delivery models

The definition of PPP has generally been created to respond to the need of systematizing the various options for public investment. But while that cataloging has been based on economic categories it has encountered some difficulties in being molded into legal concepts. A method for systematizing a range of public investment project modalities has been that of first separating PPP from self-sustainable concessions and traditional public procurement, and secondly identifying the PFI model within the PPP category. This structure permits to match each of the four modalities of investment to a specific discipline.

Systematizing public investment project modalities

[Brazil: Lei 11.079, Art. 2] A public-private partnership is a concession contract, in the sponsored or administrative forms.
§ 1 A sponsored concession is a concession of public services or public works as established in Act 8987, dated February 13th, 1995, when it involves, in addition to user charges, a direct payment from the public sector to the private partner.
§ 2 An administrative concession is a contract for the direct or indirect provision of services to the Public Administration, even when it involves carrying out construction works or supplying and installing fixed assets.
§ 3 An ordinary concession, understood as the concession of public services or public works set forth in Act 8987, dated February 13th, 1995, shall not be considered a public-private partnership when no direct payment from the public sector to the private partner occurs.

[Brazil: Lei 11.079, Art. 3] § 3 Administrative contracts not characterized as ordinary, sponsored or administrative concessions shall continue to be regulated exclusively by Act 8666, dated June 21st, 1993, and by its related acts.

PPP as a typified contract (alternative to public contracts including concession contracts)

[Spain: Ley 30/2007, de 30 de octubre, de Contratos del Sector Público, Art. 11] 1. Son contratos de colaboración entre el sector público y el sector privado aquéllos en que una Administración Pública encarga a una entidad de derecho privado, por un periodo determinado en función de la
duración de la amortización de las inversiones o de las fórmulas de financiación que se prevean, la realización de una actuación global e integrada que, además de la financiación de inversiones inmateriales, de obras o de suministros necesarios para el cumplimiento de determinados objetivos de servicio público o relacionados con actuaciones de interés general, comprenda alguna de las siguientes prestaciones:

a. La construcción, instalación o transformación de obras, equipos, sistemas, y productos o bienes complejos, así como su mantenimiento, actualización o renovación, su explotación o su gestión.
b. La gestión integral del mantenimiento de instalaciones complejas.
c. La fabricación de bienes y la prestación de servicios que incorporen tecnología específicamente desarrollada con el propósito de aportar soluciones más avanzadas y económicamente más ventajosas que las existentes en el mercado.
d. Otras prestaciones de servicios ligadas al desarrollo por la Administración del servicio público o actuación de interés general que le haya sido encomendado.

2. Sólo podrán celebrarse contratos de colaboración entre el sector público y el sector privado cuando previamente se haya puesto de manifiesto, en la forma prevista en el artículo 118, que otras fórmulas alternativas de contratación no permiten la satisfacción de las finalidades públicas.

3. El contratista colaborador de la Administración puede asumir, en los términos previstos en el contrato, la dirección de las obras que sean necesarias, así como realizar, total o parcialmente, los proyectos para su ejecución y contratar los servicios precisos.

4. La contraprestación a percibir por el contratista colaborador consistirá en un precio que se satisfará durante toda la duración del contrato, y que podrá estar vinculado al cumplimiento de determinados objetivos de rendimiento.

1.4.1 PPPs, public works and outsourcing

One of the major difficulty legislators have come across is that of distinguishing PPPs form public works. This, because some legislator have tried to differentiate the two modality of public investment through the magnitude of risk assumed by the public sector and the source of financing used to pay the project contractor and operator. Nevertheless, risk transfer derives more from the terms agreed by the parties than to the modality of investment chosen (PPP, traditional public procurement etc.). To this regard, a traditional public procurement may be well carried out through a turnkey contract that entirely transfers the completion risk to the contractor in exchange for a higher compensation. Being this traditional public procurement, it serves to demonstrate that a differentiation based on risk, is clearly inappropriate.\(^{22}\) A differentiation based on the dichotomy public vs. private finance may be misleading as well (see difference of funding and financing). In fact, the financing structure should be tailored to the specific characteristics of the project and not be associated \(a\ priori\) to a specific modality for

\(^{22}\) Of a different opinion, OECD considers that “in the absence of a sufficient transfer of risk, service delivery can be deemed as public procurement even if a private company is involved. Thus, the distinguishing feature that determines whether a project is defined as traditional public procurement or as a public private partnership should be whether or not a sufficient amount of risk has been transferred”. OECD, Public Private Partnerships. In pursuit of risk sharing and value for money, 2008, pp. 18
carrying out public investments. It should simply be the one which provide more value for money for a specific investment project.

**Definitions: example of overlapping of legal categories**

[Peru: Draft proposal for APP law] 4.1 **Obra Pública.** Bajo esta modalidad de ejecución, las entidades públicas ejecutan directamente las obras, ya sea por administración directa con personal propio de sus unidades ejecutoras o por administración indirecta, mediante terceros. En esta modalidad el sector público asume la mayor parte de los riesgos asociados a la provisión de la infraestructura o de los servicios públicos, aplicando, en lo que corresponda, la normatividad de contrataciones y adquisiciones.

4.2 **Concesión Auto sostenible:** Son aquellas concesiones que presentan rentabilidad privada positiva. Se financian con los ingresos generados por la explotación de la concesión, incluyendo a aquellas cuya recaudación sea realizada por una empresa del Estado. Estas concesiones pueden ser gratuitas u onerosas, en éste último caso el concesionario debe realizar una contribución determinada en dinero o una participación sobre sus beneficios a favor del Estado.

   Toda Concesión Auto sostenible cumple con las condiciones siguientes:
   i) No requieren ningún tipo de garantía financiera por parte del Estado:
   ii) Las garantías no financieras que aseguren al concesionario un nivel de ingresos o demanda determinados, son nulas o mínimas, conforme se establezca en el Reglamento de la presente Ley.

4.3 **Concesión Cofinanciada:** Son aquellas concesiones que requieren aportes de recursos del Estado, demandan algún tipo de garantía financiera por parte del Estado o requieren de alguna garantía no financiera cuya demanda de recursos es mediana o alta, de acuerdo a los parámetros que se fijen en el Reglamento de la presente Ley.

**PPPs focus on the procurement of services while traditional public works focus in the delivery of the asset.**

A PPP focuses on the procurement of a service, even though commonly associated with the construction of a facility to deliver the service. The conventional approach starts with the main focus on acquiring a facility. There are also considerable differences as to the sequence of events. Procurement activities concerning design, construction, operation and maintenance of a facility, which are generally dealt with separately under the conventional approach, tend to be grouped under the PPP approach. The PPP approach also tends to shift some responsibilities from works departments such as Architectural Services Department (Arch SD) to the client department and/or the private partner. 23

**Focus on service performance**


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PPP involve a long-term element that go further beyond the delivery of the asset. It generally includes maintenance and service delivery. The procurement of service through short-term contract does not generally involve the constitution of a PPP, particularly when the sole scope of the contract is the supply of labor, the supply and installation of equipment or the execution of public works. The above imply an outsourcing of services which does normally include the supply of assets in addition to services.

Comparing PPP and Conventional procurement

[An introductory guide to Public-Private Partnerships
Hong Kong Government Efficiency Unit, 2008]

How does the procurement of a facility compare?

24 Brazil: Lei 11.079, Art. 2
<table>
<thead>
<tr>
<th>Conventional approach</th>
<th>PPP approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The client department would seek the assistance of one of the works departments in designing the facility or in the case of design and build contracts, to prepare performance specifications for the facility.</td>
<td>• The fundamental approach to procuring a facility via a PPP is to define the facility in terms of the service which it is to provide.</td>
</tr>
<tr>
<td>• The client department would form a PSCom incorporating its own and other departmental staff, as well as outside expertise, if required, to oversee the project.</td>
<td>• The client department would form a PSCom incorporating its own and other departmental staff, as well as outside expertise, if required, to oversee the project (see Chapter 3).</td>
</tr>
<tr>
<td>• Once pre-contract planning is completed and resource allocation approvals are obtained, works departments would call for tenders from private contractors to construct or to design and build the facility in accordance with its specifications (unless approval is obtained pursuant to Financial Circular No. 2/2003, tender invitation should start after funding is secured).</td>
<td>• The PSCom would prepare documents, including output-based performance specifications, to request proposals for a private sector consortium to design, build, finance, operate and maintain the facility for a specified period, e.g. between 10-30 years.</td>
</tr>
<tr>
<td>• Following internal approval, the client department would conduct public consultation including the consultation with relevant LegCo Panels before obtaining endorsement of LegCo’s Finance Committee (FC).</td>
<td>• Following internal approval, the client department would seek approval of the Policy Committee before conducting consultations, including LegCo Panels, and then obtaining endorsement of the LegCo’s FC.</td>
</tr>
<tr>
<td>• The successful bidder would be the one that satisfies the minimum requirements specified with respect to quality of service or product and scores the highest mark in the tender evaluation which weighs both the technical and cost aspects.</td>
<td>• The successful consortium bidder would be the one that satisfies the mandatory requirements specified with respect to the ability of the facility to deliver the service required, the quality of design, construction and operation and on terms which provide best value for money.</td>
</tr>
<tr>
<td>• Separate specialist contracts might be let to different private contractors for specialist equipment and facilities.</td>
<td>• In assessing the conforming proposals received, the PSCom will in most cases benchmark them against an estimate of the full lifecycle cost of the project if it was done by the conventional in-house approach.</td>
</tr>
<tr>
<td>• During construction of the facility, the works department would monitor all aspects of the construction including process, quality and cost, on terms that provide best value.</td>
<td>• The client department and its advisors will deal solely with the consortium. The consortium bidder will manage the specialist contractors. Under a PPP, the appropriate member of the PSCom or an independent third party will verify the facility as fit for the purpose. Only then will payment for commissioning, under a DBO, or services received, under a DBFO, be paid.</td>
</tr>
<tr>
<td>• Upon completion of construction of the facility, the works department would inspect the works and, when appropriate, certify that the works have been completed and the final payment will be made to the contractor.</td>
<td></td>
</tr>
</tbody>
</table>
### How does the procurement of a service compare?

<table>
<thead>
<tr>
<th>Conventional approach</th>
<th>PPP approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The service element of the project is divorced from the asset acquisition phase; any risk that the facility will not deliver the service quality required lies with the client department</td>
<td>• The PPP approach requires the client department to focus on the long-term quality of the service outcomes required and structure the procurement process accordingly. Consortium bidders will be provided with targets and incentives to ensure that the outcomes are achieved</td>
</tr>
<tr>
<td>• The client department would make arrangements for the operational aspects of the facility. This would include cleaning and security, and the maintenance and repair of the facility. This may involve a mixture of permanent and contract staff from the client department, Electrical and Mechanical Services Department (EMSD) and works departments, and a mix of different outsourcing contracts</td>
<td>• As well as defining the facility acquired in terms of service delivery, a range of further services will often be procured. Sometimes these will be the subject of separate 'Operation and Maintenance (O&amp;M)' contract, which may include mid-life capital expenditure. Services such as operation of water supply/sewerage services, office cleaning, or road maintenance could be covered under these types of contract. Such contracts may also cover service with respect to existing assets</td>
</tr>
</tbody>
</table>

### How does the funding of, and payment for, a facility/service differ?

<table>
<thead>
<tr>
<th>Conventional approach</th>
<th>PPP approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The funding of the capital and recurrent costs would normally come from a range of different sources within the government</td>
<td>• The government would normally pay the winning bidder only after the facility was operational, and then payments would be only for “availability” and services provided according to the contractual specifications</td>
</tr>
<tr>
<td>• The costs of the preparatory design and supervisory work for the construction contracts and the capital costs of construction works would be met from the Capital Works Reserve Fund (CWRF)</td>
<td>• Payments under a PPP will most often be combined within a unitary charge, paid at regular intervals throughout the life of the project. The unitary charge will incorporate elements of amortised capital costs paid out of the CWRF and/or recurrent costs paid out of the client department’s Recurrent Account</td>
</tr>
<tr>
<td>• Progress payments for the facility would be made upon certified completion of different stages of design and construction</td>
<td>• An alternative, under a DBO, is for initial capital costs to be paid during</td>
</tr>
<tr>
<td>equipment would come under the department's Capital Account/CWRF as appropriate</td>
<td>the construction/upon commissioning of the facility, and only recurrent and capital replenishment costs to be covered by the unitary charge</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>• Similarly, in works departments, expenditure under various departmental subheads would take place over the life of the facility</td>
<td>• Payments would be subject to satisfactory performance in the provision of services on the part of the consortium</td>
</tr>
<tr>
<td></td>
<td>• Payments could include incentive elements where performance targets are set</td>
</tr>
<tr>
<td></td>
<td>• If the consortium fails to meet performance standards by delivering the services as specified in the contract, or fails to rectify defects at its own expense within specified timeframes, the payments will be abated, deferred, or halted in accordance with the terms of the contract</td>
</tr>
</tbody>
</table>

**PPPs and public works may use legal categories that overlap.** This because PPP may be carried out through contracts that may serve also for the constitution of public works (such as supply contracts, concession contract of public services etc.). The difference is determined by the duration of the duration of the relation. This is why some PPP laws, in addition of characterizing PPPs with their unique features (see below) they had associated them with the legal instruments by which they are normally carried out. This was achieved for example by exhaustive list that excluded those contracts not reaching a certain value or a minimum duration.

**Legal Instruments for carrying out PPP**

**[Portugal: Decreto-Lei n.º 86/2003, de 26 de Abril, Artigo 2.º]** 4 - Constituem, entre outros, instrumentos de regulação jurídica das relações de colaboração entre entes públicos e entes privados:

a) O contrato de concessão de obras públicas;
b) O contrato de concessão de serviço público;
c) O contrato de fornecimento contínuo;
d) O contrato de prestação de serviços;
e) O contrato de gestão;
f) O contrato de colaboração, quando estiver em causa a utilização de um estabelecimento ou uma infra-estrutura já existentes, pertencentes a outras entidades que não o parceiro público.

5 - Excluem-se do âmbito de aplicação do presente diploma:

a) As empreitadas de obras públicas;
b) Os arrendamentos;
c) Os contratos públicos de apropriação;
d) Todas as parcerias público-privadas que envolvam, cumulativamente, um encargo acumulado actualizado inferior a 10 milhões de euros e um investimento inferior a 25 milhões de euros;
e) Todos os outros contratos de fornecimento de bens ou de prestação de serviços, com prazo de duração igual ou inferior a três anos, que não envolvam a assunção automática de obrigações para o parceiro público no termo ou para além do termo do contrato.
1.4.2 PPP and concessions

In a concession, the private-sector party has the responsibility for constructing and financing a new asset, or modernizing and expanding an existing facility. The concessionaire is given the right to operate the facility for a specified period, and the public-sector party regains asset ownership when the contract expires. A typical concession is a long-term contract with duration ranging from 25 to 30 years but it can go up beyond 60 years.

Concession contracts generally involve the construction or extension of the facility. If the concessionaire charges final users, it collects no revenues until the building phase is completed and service provision commences. To the extent that the public-sector party makes no payment to the private-sector party, the construction risk is fully transferred to the private-sector party in order to provide incentives to complete the building phase on time and to reduce costs. However, in some cases, the public sector pays a fixed amount during the construction. Liquidated damages can be imposed to the private-sector party if the construction delays as a consequence of its own actions.

In a concession, the private-sector party typically finances capital expenditure, and thus it bears the financial risk. Typically, the SPV borrows funds in capital markets to finance investments, pledging as collateral the revenue stream that results from charging users during the operation phase (IMF, 2004). The providers of finance look to the cash flow of the project as the source of funds for repayments. In this regard, financial security against the SPV is hardly sought because the SPV has minimal assets, and because the financing is without recourse to the sponsor companies. Indeed, the objective behind large PPP projects is to achieve a financial structure with as little recourse to the sponsors as possible, whilst at the same time providing sufficient credit support so that the lenders are satisfied with the credit risk.

Under certain financing structures, the financial risk may be an important issue for the private-sector party. In particular, exposure to interest and exchange rate risk results from using short-term, foreign-currency denominated debt to finance long-term, domestic currency revenue-generating assets. This exposure may be large in economies with weak currencies and high macroeconomic and financial instability. By transferring financial risk to the private partner, incentives are given to reduce exposure, e.g. discouraging purchases of imported goods produced by concessionaire-related firms, and borrowing in foreign currency (Lobina and Hall, 2003).
During the operation phase, the SPV receives income based on the usage of the facility assuming that the service provided meets a range of key performance indicators. There are normally abatement clauses in the concession contract, which can penalize the SPV for providing the services below the agreed standards. There are also penalty points, which if accumulated to a certain level, can lead to termination of the contract for poor performance.

In the concession, the demand risk is typically transferred to the private-sector party. The concessionaire charges consumers, e.g. toll roads, and so it bears the demand risk and suffers from demand falling short of forecasted levels. The public-sector party may however set a minimum revenues guarantee to reduce the risk borne by the private-sector party (see section 4 on payment mechanisms for further details).

Changes in the legislative and regulatory framework that have effects on operation costs and profits are likely to occur during the concession. When these changes are of a general nature and affect the whole industry, e.g. modifications in tax legislation, the rising costs can be either transfer to the private party or shared with the public-sector party. For instance, indexation provisions may allow the concessionaire to pass on the rising costs to consumers through price increases. On the other hand, when changes in law and regulation have a specific nature and affect only the concession project, it is often the public-sector party who bears the risk of rising costs (HM Treasury, 2007).

Concessions and PPPs have in common that both use the private sector to improve value for money (VFM) and efficiency, and both see risk transfer to the private operator as the essential element to drive VFM. Both a concession and a public-private partnership typically involve a private firm that operates, maintains and finances the asset during the contract period and a government that regains control of the asset at the end of the contract. Concessions and PPPs also typically use a whole-of-life project cycle approach when considering the net benefits of a project. Thus, PPPs and concessions share many features, so that the question remains: what distinguishes a public-private partnership from a concession? The two distinguishing characteristics concern risk and payment. First, although both PPPs and concessions involve the transfer of risk to the private operator, the level of risk transferred – especially demand risk (a type of risk discussed further below) – might in general be higher in the case of a concession. Second, although both PPPs and concessions might receive payment from the government and user charges levied directly on the users of the service, concessions usually depend on user charges for the majority of their income, and many do not receive any payment from the government. In fact, instead of the government paying the private operator for services delivered, in the case of a concession the private operator pays the government for the right to operate the asset. Having made this distinction, it should also be mentioned that much of the literature does not draw a clear line between PPPs and concessions when discussing the problems that give rise to contractual renegotiations or issues regarding affordability or value for money. The omission of a clear distinction is not necessarily a failure to distinguish clearly, but may result from the significant overlap in definition as well
1.4.3 Self-sustainable concessions and PPPs

PPP and self-sustainable concessions are clearly differentiated by the lack of commitment, contribution and guarantees by the public sector in the latter. A good paradigm of this structure has been provided by the new Brazilian PPP law.

1.4.4 PPP and Privatization

PFI and privatization

[HM Treasury, PFI: meeting the Investment Challenge, 2003] PFI relationships are very different from privatisation, in which the market and price mechanism defines the service provided. The private sector has always been involved in the building and maintenance of public infrastructure. PFI ensures that contractors are bound into long-term maintenance contracts and shoulder the responsibility for the quality of the work they do. With PFI, the public sector defines what is required to meet public needs and remains the client throughout the life of the contract. The public sector also ensures, by contract, delivery of the outputs it sets and has rights under those contracts to change the output required from time to time. Consequently, with PFI the public sector can harness the private sector to deliver investment in better quality public services while maintaining frontline services in the public sector.

What is the Government ‘s fundamental role in PPPs

[An introductory guide to Public-Private Partnerships Hong Kong Government Efficiency Unit, 2008]

1. Set policy, identify opportunities, and define objectives
2. Ensure transparency and probity in the procurement process
3. Identify and propose the allocation of risks

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4. Identify needs in terms of output/outcome specifications that encourage flexibility and innovation in the manner of performance
5. Set and ensure the achievement of standards for health, safety, and the environment
6. Establish, monitor and enforce the levels of service
7. Ensure value for money is achieved
8. Determine and manage reward mechanisms and tariff structures
9. Provide a clear regulatory framework and perform regulatory functions
10. Safeguard the interests of customers and the general public
11. In some PPP projects government will still provide the front line staff.

To ensure the successful establishment and implementation of a program of PPP projects, the Government needs to foster the development of the private sector market by ensuring an adequate flow of projects and good and certain procedures for requesting and accepting proposals.
2 Why governance matter for Public-Private Partnerships

2.1 Governance risks for the new PPP framework

PPPs introduces an “altered governance” 26: (1) a process for choosing the infrastructure service delivery and procurement options; (2) a participatory relationship approach between the PA, private partners and affected stakeholders; (3) the institutionalization between the partners and stakeholders for managing long term infrastructure services PPP contracts; and (4) a long term infrastructure service PPP contract.

This altered governance is exposed to pathologies that may not only reduce their positive effects but also open the door to discretionary, opportunistic, inefficient and eventually corrupt behaviors, which may ultimately jeopardize public finances and destroy any credibility in PPPs.

Governance failure jeopardizes public goods and business market value.

2.1.1 Governance risks for a new investment decision making process

- Judgments may be formulated on non reliable information, eventually manipulated to fit into specific pre-established parameters.
- Complex evaluation may suffer the lack of capacity of public officials or requires consistent delay in the process.
- All of the above may impulse the bypassing of process jeopardizing their institutional integrity.

2.1.2 Governance risks for a new participatory approach between the PA, private partners and affected stakeholders

- Integrating the public and private component of a local/regional community in long term relationship may foster political-patrons and corruption, favors lobbies and not take in consideration social issues.
- The joint definition of goals and decision-process are vulnerable to misinterpretation, asymmetric information, and opportunism, which lead to situations where partners stick to their own interests.

The need for each participant to be capable of bargaining in its behalf produces a fragmentation of structures and process, which dilutes political control of decision making. This may lead to blurring of responsibilities and of accountability.\textsuperscript{27}

The negotiated decisions of the partnerships produce mutual shared responsibility which can make accountability for these decisions difficult to ascertain for the average citizen or even for the oversight organizations\textsuperscript{28}.

Participatory processes, despite their adaptable and flexible dynamic normally lack of visibility and often enable PPPs to escape from political and bureaucratic process as well as to the accountability and control which normally affects totally public sector activities.

2.1.3 Governance risk for the new long term infrastructure service PPP contract type

- The concentration and bundling of activities and contractual powers in the hands of a small number of partners not only undermines the self-regulatory effect of the competitions between potentials providers of services, but may also “lock-in” the PA in relationship that in, addition, may not be allowed to fail.\textsuperscript{29}
- Risk allocation may serve to cover rents or generate cost overruns due to the PA lack of capacity.
- Output specification not clearly defined may favor conflicts or nullify the effects of a payment system based on incentives and penalties.
- The same introduction of flexibility into the contract may lead to opportunistic practice and favor corruption.
- The question of accountability and governance becomes even more relevant when the partnership is reluctant to divulge information to outsiders on the ground of commercial confidentiality or data protections.

2.1.4 Governance risks for managing the new long term infrastructure service PPP contract type

- The establishment of principal-principal relationships may generate a two way government-business deals\textsuperscript{30} lacking the control and involvement of independent regulators, ombudsmen and audit review.

\textsuperscript{27} BOVAIRD T., \textit{cit.} pp. 200, 203
\textsuperscript{28} PETERS B. G., \textit{cit.} pp.13
\textsuperscript{30} It also has to be noted - particularly in the case of unsolicited proposals - that PPPs “added a whole new dimension to project initiation, planning and completion with new powerful interest groups moving in alongside elected governments. Thus, we see today new infrastructure projects being suggested by real estate agents as well as various project financiers and merchant bankers, rather than bureaucrats – whose purpose, one would have thought, would be to do just this, as well as analyzing a range of smaller packages of alternative improvement options. Whilst such government-business deals may well end up meeting the public interest, it would seem more by coincidence than by design”. HODGE G. – GREVE. C. “The PPP
Moreover, the handling of PPP on a case by case basis, by the government itself has exposed PPPs to multiple conflicts of interest. The PA can be easily captive by the private sector due to the lack of capacity and resources. The institutional cooperation may lead to opportunistic and corrupt practice. The adaptation of the project to new technology may rise issues of confidentiality and data protection which may reduce the transparency of additional costs.

2.2 Solving PPP governance issues through good governance practices

The goal is making PPP successful, where the outcome of success is the achievement of public good the generation of business/market value. Indeed, each of these outcomes is the results of the sum of variable dependent on the quality of institutions, the capability of its actors, the legal, and economic frameworks to which PPPs (and eventually PPP laws) are parts of. Yet they are also the consequences of governance independent variables that when applied to dependent variables serve to enhance the success of PPPs.

The lack of transparency spurs a sense of distrust over service-users and citizens that fear becoming objects of profit making calculus; staff involved into the PPP transition that fear loosing their job or experiencing worse conditions; politicians that fear loosing control over policy making while remaining the ultimate political responsible for the service provision.

To be credible, aligning the public interest in achieving a quicker and more efficient delivery of infrastructure services with the private interest in entering into continued business transactions and new financial deals, must therefore count with the trust not only of the partners but also of community as a whole. The undertaking of long term business relationships with private partners under highly complex contractualization of bundled infrastructure arrangements, in addition to the vast financial commitments being made by the governments in the name of the citizens, requires their participation and understanding as a mandatory element. Users and affected stakeholders must have the confidence in both the public and private partners’ ability in serving the public interest.

Debate.. cit.17; On the same FLINDERS, M highlights that PPPs may PPPs ‘change the focus of attention to the needs of the firm, the contractor and the ‘consumer’ rather than some wider notion of the public interest’, FLINDERS, M. cit., 215-239.
32 HODGE G. and FLINDERS argue that PPPs may offer governments a way of achieving short term gains, but with longer term risks or even losses in terms of democratic and political costs. HODGE G. (2002), Who Steers the State When Governments Sign Public-Private Partnerships?, The Journal of Contemporary Issues in Business and Government, 8 (1), 5-18. FLINDERS, M., cit.
first. Transparency and accountability must forge their trust which need for them to continue to operate effectively and not be undermined along the lifecycle of the PPP.

2.2.1 Accountability in PPPs

The decision for choosing the best infrastructure service delivery option may be jeopardize if the bidding process following that decision is tinted of unfairness. The absence of a level playing field, the flawless of regulation that protect the Government from rent seeking direct negotiations, or anticompetitive and collusive behaviors may put at risk the value of the option chosen. A variation of the result of a fair bidding process through subsequent unfair redistribution of value via invaluable renegotiations or additional works, may reduce too ultimate outcome of allocative efficiency.

Yet the value of the decision making, bidding, and contract management process

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Value for money

[Brazil: Lei 11.079, Art. 10]
Public-private partnerships shall be procured by competitive tendering. The opening of the tendering process requires:
I – authorization by the public authority, based on a technical study that shall demonstrate:
a) the convenience and appropriateness of contracting a public-private partnership, by identifying the reasons that justify the choice of a partnership model;

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
4. Para ser considerados como tales, los proyectos para prestación de servicios deben cumplir con lo siguiente:
II. Los servicios que se presten a la dependencia o entidad contratante deberán permitir a ésta dar un mejor cumplimiento a los objetivos institucionales que la misma tiene asignados conforme a lo establecido en las disposiciones aplicables y en el Plan Nacional de Desarrollo 7. La Secretaría, al emitir las autorizaciones a que se refiere el numeral anterior, determinará si el proyecto para prestación de servicios es una forma conveniente para contar con los servicios requeridos por la dependencia o entidad que solicitó dichas autorizaciones, con base en la revisión del estudio de costo y beneficio respectivo y el impacto en las finanzas públicas de las obligaciones de pago que pretendan establecerse en el contrato de servicios de largo plazo correspondiente.
15. Las dependencias y entidades deberán realizar el análisis costo y beneficio de los proyectos para prestación de servicios conforme a los lineamientos que al efecto emita la Unidad de Inversiones, con el fin de establecer que el proyecto genera beneficios netos positivos bajo supuestos razonables. En el análisis costo y beneficio se deberá mostrar si el proyecto para prestación de servicios genera beneficios netos iguales o mayores a los que se obtendrían en caso de que los servicios fueran proporcionados mediante la realización de un proyecto de inversión presupuestaria.

[Peru – Decreto Legislativo n. 1012, Art. 8]
Es de responsabilidad de las entidades públicas realizar un análisis costo-beneficio, a fin de determinar si la participación privada en la provisión de la infraestructura pública o del servicio público implica un mayor beneficio neto para la sociedad respecto a si éstos fuesen proveídos por el Estado a través de una obra pública.

2.3 Implementing good governance practice in the new PPP framework

2.3.1 Integrating PPP governance principles into PPP Governance policies

A process, a methodology, and an institutional framework are thus the basic elements of a broader legal environment that PPP laws need to originate. But PPPs are only a part of that broader legal environment. Yet, they are a new part whose logic - based on the achievement of the investment option determining the best value for money - influences the same broader legal environment to which they are part. In fact, new elements characteristic of the PPP world may affect other modalities for carrying out public investment such as public works, outsourcing, and privatization.
This is due to the fact that the methodology introduced by the new PPP laws, which disciplines the investment decision process, concerns and serves to compare and evaluate also the other options. By that, PPP laws contaminate the way other options are procured and consequently contaminate an array of norms that transcend their boundaries. This is why each PPP law must not only be coordinated with that broader body of laws and regulation but the latter must also be updated to include principles and methodology of evaluation that derive from the PPP discipline. And the more the PPP modality is integrated into the investment decision process - which determines, the most valuable option for carrying out public investments - the more coordination new PPP laws must have with the entire legal system regulating public investment.

On the other hand, the same pre-existing broader body of norms may constitute an obstacle to the introduction of PPPs, for example by imposing separate tenders for construction and long term operation; prohibiting payments for public works that are credited against future budgets (which legally have to be agreed on annual bases, and cannot be committed in advance); limiting the transfer of control or ownership of public infrastructure or lender securities on the same. This is why new PPP laws must overcome the mentioned impediments by amending pre-existing regulation or through the introduction of prevailing norms.

Integration of public finance legal framework

[Portugal, Lei n.º 91/2001, de 20 de Agosto, Lei de enquadramento orçamental Art. 16, 2] A avaliação da economia, da eficiência e da eficácia de programas com recurso a parcerias dos sectores público e privado tomará como base um programa alternativo visando a obtenção dos mesmos objectivos com exclusão de financiamentos ou de exploração a cargo de entidades privadas, devendo incluir, sempre que possível, a estimativa da sua incidência orçamental líquida.

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004] Las presentes Reglas se aplicarán sin perjuicio de lo establecido en la Ley de Adquisiciones, Arrendamientos y Servicios del Sector Público y su Reglamento; la Ley de Presupuesto, Contabilidad y Gasto Público Federal y su Reglamento; el Manual de Normas Presupuestarias, y demás ordenamientos que, por virtud de la naturaleza y alcance de los contratos de servicios de largo plazo, deban observarse.

[Peru – Decreto Legislativo N. 1012, Art. 9] Sin perjuicio de las disposiciones establecidas en la presente norma, será de aplicación de forma supletoria, las normas vigentes sobre concesiones de obra de infraestructura y servicios públicos, tales como el Texto Único Ordenado de las Normas con Rango de Ley que regulan la entrega en Concesión al Sector Privado de las Obras Públicas de Infraestructura de Servicios Públicos, aprobado con el Decreto Supremo N. 059096-PCM y otras normas que resulten aplicables.

Checklist of laws and regulations to be coordinated with new PPP laws

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34 E.R. YESCOMBE, cit., pp. 31
2.3.2 Integrating governance principles into PPP laws and regulations

Laws, regulations, and guidelines related to the area of concessions and public works at large have been flourishing during the latest decade all around the world. Few of them have dealt specifically with PPP. Others have updated or integrated old concession laws. In any case, they have generally introduced new concepts that echo, with more or less intensity, the mantra of PPP: value for money and risk transfer to the private sector. That is also why they have generally been re-branded “new” PPP laws. But while the trend has been jumping (more or less unconsciously) on the PPP bandwagon, the characteristics of each of those laws, regulation and guidelines vary considerably.

The scope of PPP laws may vary accordingly to the sphere of regulation that national legislators have opted for. It may encompass a general framework for the identification all the modalities (Public Works; PPP; Self sustainable concession; etc) for carrying out identified public investment project or it may discipline only one of those modalities: the PPP model. A third option may be that of defining broad categories of investment’s modality (such as public works, PPPs and self sustainable concessions) and disciplining specifically PPPs.

Scope of PPPs Laws: Examples taken from recent PPP laws

Old concession law updated

[Chile: Decreto 900/1996, Art.1] Artículo 1º.- La ejecución, reparación o conservación de obras públicas fiscales, por el sistema establecido en el Artículo 87º del Decreto Supremo Nº 294, de 1984, del Ministerio de Obras Públicas, las licitaciones y concesiones que deben otorgarse, ya se trate de la explotación de las obras y servicios o respecto del uso y goce sobre bienes nacionales de uso público o fiscales, destinados a desarrollar las áreas de servicios que se convengan, se regirán por las normas establecidas en el presente decreto con fuerza de ley, su reglamento y las bases de la licitación de cada contrato en particular, que el Ministerio de Obras Públicas elabore al efecto.
New PPP law focused on long term service contracts


New PPP law focused on public-private partnership tenders and contracts


New general framework for public procurement contracts

[Spain: Ley 30/2007, de 30 de octubre, de Contratos del Sector Público, Art. 1] La presente Ley tiene por objeto regular la contratación del sector público, a fin de garantizar que la misma se ajusta a los principios de libertad de acceso a las licitaciones, publicidad y transparencia de los procedimientos, y no discriminación e igualdad de trato entre los candidatos, y de asegurar, en conexión con el objetivo de estabilidad presupuestaria y control del gasto, una eficiente utilización de los fondos destinados a la realización de obras, la adquisición de bienes y la contratación de servicios mediante la exigencia de la definición previa de las necesidades a satisfacer, la salvaguarda de la libre competencia y la selección de la oferta económicamente más ventajosa. Es igualmente objeto de esta Ley la regulación del régimen jurídico aplicable a los efectos, cumplimiento y extinción de los contratos administrativos, en atención a los fines institucionales de carácter público que a través de los mismos se tratan de realizar.

New PPP law focused on the process, methodology and institutional framework for developing PPP

[Portugal: Decreto-Lei n.º 86/2003, de 26 de Abril, Artigo 1.º] O presente diploma tem por objecto a definição de normas gerais aplicáveis à intervenção do Estado na definição, concepção, preparação, concurso, adjudicação, alteração, fiscalização e acompanhamento global das parcerias público-privadas.

The structure of PPP laws may vary depending of the degree of regulation and flexibility the legislator wants to infuse into the PPP law.

| Degree of specification |  |
Being a PPP a long term agreement between one of more public and private parties, the scope of PPP laws is normally the regulation of the constitution, supervision and modification of the partnership. The basic elements of a PPP law define the: (1) principles; (2) institutional framework and (3) methodology of evaluation to be applied to the above mentioned phases of the public-private relation.

Other elements may nevertheless be added to the basic structure. They normally concern the minimum requirement of the legal instrument – contract and the special purpose vehicle - by which the PPP is carried out; the procurement procedures; and the early termination procedures (whether because of default by the private party or because the public party wants to take the project back under public control).

In addition, PPP laws may also includes provisions aimed at fostering the participation of private investor, specifying: the basis on which a Public Authority may provide support for various project risks (such as revenue guarantee); the possibilities for lenders to take security over the PPP contract as well as “step-in” rights; and the possibility to allow the provision of investment incentives (such as special tax treatment).

As noted above, the general PPP law normally crystallizes essential elements of PPP discipline, including the institutional framework and process for constituting modifying, and supervising a PPP. The same elements may be detailed in the secondary regulation or specifically treated in a sectorial law and regulation which is normally characterized by an increased level of sophistication and understanding proper of a second stage of PPP development.

An extremely detailed general regulation may, nevertheless, jeopardize the capacity of tailoring to specific projects the legal instruments by which PPP are developed. In fact, some aspect of those legal instruments may vary remarkably depending on the same typology of those instruments (e.g. concession contract or PFI model) or the sector in with they are operating.

Guidelines of commercial principles or the standardization of the same legal instruments by which PPP are carried out, and specifically contracts, are particularly suitable for regulating the additional elements of PPPs. In fact they serve to reducing transaction costs, creating grater certainty for bidders and lenders, and speeding up the procurement process. In addition, if the pipeline of PPP projects is long enough, is
helpful to draw up sector specific guidelines and standard contracts for regulating sector specific matter such as service-fee mechanism, including output indicators.

Depending on the fiscal policy of the Government, or branch of Government drafting the PPP law - normally the Treasury or Ministry of Finance – large part of the law may be dedicated to limiting the fiscal risk PPPs may trigger. The above is normally achieved by limiting the contingent and fix liabilities that the same government may undertake.

Finally, PPP general laws may serve also to the proposing government as a “manifesto” which, in addition of pushing forward new principles for public investment, provides the opportunity for the government of confirming its commitment to private investment participation through explicit legislation.
Diagram - Australia Case: Enhancing good governance through capacity building and knowledge management
Major stages in developing a Partnership Victoria project

Boxes on the left hand side show the points at which Cabinet approval (or approval of a Cabinet committee) is required.

1. **The service need**
   - Identify service needs
   - Focus on output
   - Consider broad needs, over time
   - Allow scope for innovation

2. **Option appraisal**
   - Consider options
   - Consider application of Partnership Victoria
   - Evaluate financial and other impacts, risks and benefits (triple bottom line)

3. **Business case**
   - Confirm the project offers net benefit
     - Quantity risks and costs
     - Commence development of a PSC
     - Conduct cost-benefit analysis
   - Assess Partnership Victoria Potential
   - Obtain funding and project approval

4. **Project Development**
   - Assemble resources – steering committee, project director, probity auditor, procurement team
   - Develop a project plan
   - Further develop PSC
   - Develop commercial principles
   - Consultation

5. **Bidding process**
   - Develop Expression of Interest invitation
   - Seek approval to issue the EoI
   - Evaluate responses and develop a shortlist
   - Develop a Project Brief and contract
   - Seek approval to issue the Project Brief
   - Conduct clarification sessions
   - Evaluate bids

6. **Project finalisation review**
   - Confirm achievement of the policy intent
   - Confirm value for money
   - Report to the Minister
   - Advise the Treasurer of intent

7. **Final negotiation**
   - Establish the negotiation team
   - Set the negotiation framework
   - Probity review
   - Report to Minister and Treasurer
   - Execute contract
   - Financial close

8. **Transition**
   - Finalise and implement contract management
   - Finalise Contract Administration Manual
   - Implement performance reporting

9. **Contract management**
   - Formalise management responsibilities
   - Monitor project delivery
   - Monitor the service outputs
   - Maintain the integrity of the contract

Source: Victoria (Australia) - Partnership Victoria, Practitioner's Guide, 2001
PART II

ENHANCING GOOD GOVERNANCE IN PUBLIC-PRIVATE PARTNERSHIPS
3 Enhancing institutional integrity, transparency and accountability in the process for choosing the procurement option

The decision-making process is then intended to achieve and maintain the most valuable option during the lifecycle of the infrastructure service, from its inception to its termination. The introduction of a process for guiding the decisions provides a rational for public intervention for the presence of a market failure. It reduces the discretion of the decision makers not based on technical support, it helps understanding and managing the commitments of the governments and the risk it assumes or transfer, it helps to monitor the quality of the service provided and finally react to maintain that value.

The decision making process must be based on budgetary assumptions that limits the same array of available options. Value is therefore achieved as the best option within those limits. The verification of affordability ex-ante enhances the judgment of value deriving from the decision making process. The use of PPP for bypassing budgetary limits jeopardizes the concept of “best option” and consequently reduces the allocative efficiency as outcome.

1.1 Transparency of the process

<table>
<thead>
<tr>
<th>Lifecycle cost assessment</th>
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<tr>
<td>[Brazil: Lei 11.079, Art. 10]</td>
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<tr>
<td>Public-private partnerships shall be procured by competitive tendering. The opening of the tendering process requires:</td>
</tr>
<tr>
<td>I – estimate of budgetary and financial impact in the periods in which the public-private partnership contract shall be in effect;</td>
</tr>
<tr>
<td>II – statement by the party responsible for authorizing the expenditure that the obligations undertaken by the Public Administration in a partnership contract are in line with the Budget Guidelines Act and have been considered in the Annual Budget Act;</td>
</tr>
<tr>
<td>III – estimate of long-term flow of public funds, necessary for fulfilling, throughout the term of the contract and in each fiscal year, the financial obligations undertaken by the Public Administration;</td>
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<tr>
<td>IV – the project is included in the Multi-Year Plan in effect;</td>
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<th>Approval process</th>
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<tr>
<td>[Australian Government, Department of Finance and Deregulation Introductory Guide to Public Private Partnerships - December 2006]</td>
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</tbody>
</table>

The PPP Principles set out the approval processes for projects considered to be PPP arrangements. Appropriate approval is required before engaging the market in a tender process.
Transparency of procedure and decision-making

[Peru – Decreto Legislativo n. 1012 Art. 5] Transparencia. Toda la información cualitativa y cualitativa que se utilice para la toma de decisiones durante las etapas de evaluación, desarrollo, implementación y rendición de cuentas de un proyecto de inversión llevado a cabo en el marco de la presente norma deberá ser de conocimiento ciudadano, bajo el principio de publicidad establecido en el Art. 3 del Texto Único Ordenado de Ley de Trasparencia y Acceso a la Información Pública, aprobado por Decreto Supremo N. 043-2003-PCM.

[Brazil: Lei 11.079, Art. 4] The following guidelines shall be observed when contracting public-private partnerships:
V – transparency of procedures and decision-making;

Transparency of the value for money assessment

[Brazil: Lei 11.079, Art. 10] Art. 10. Public-private partnerships shall be procured by competitive tendering. The opening of the tendering process requires:
I – authorization by the public authority, based on a technical study that shall demonstrate:
a) the convenience and appropriateness of contracting a public-private partnership, by identifying the reasons that justify the choice of a partnership model;

[Mexico: Acuerdo Secretaría de Hacienda Diario Oficial 9 Abril 2004] 20. Las dependencias y entidades deberán presentar las solicitudes de autorización de proyectos para prestación de servicios ante la Secretaría, a través de las Direcciones Generales de Programación y Presupuesto sectoriales. En el caso de entidades sectorizadas, la solicitud deberá ser presentada por la dependencia coordinadora de sector y, en el caso de las entidades no sectorizadas, la solicitud deberá presentarse por la entidad, directamente a las citadas Direcciones Generales.
21. Las solicitudes a que se refiere el numeral anterior deberán acompañarse de la siguiente información:
IV. El análisis costo y beneficio a que se refiere el numeral 15 de estas Reglas;

Transparency of the budgetary and fiscal affordability of the PPP and compatibility with the multi-year fiscal strategy of the Government
[Brazil: Lei 11.079, Art. 10]
Art. 10. Public-private partnerships shall be procured by competitive tendering. The opening of the tendering process requires:

b) that the expenses created or increased shall not affect the targets in terms of fiscal results provided for in the Annex referred to in § 1 of art. 4 of Complementary Act 101, dated May 4th, 2000, such that its financial effects, in subsequent periods, shall be compensated by a permanent increase in revenues or by a permanent reduction in expenditures; and

c) when applicable, in accordance with art. 25 of this Act, the compliance with the limits and conditions resulting from the application of art. 29, 30 and 32 of Complementary Act 101, dated May 4th, 2000, in relation to the payment obligations undertaken by the Public Administration in partnership contracts;

II – estimate of budgetary and financial impact in the periods in which the public-private partnership contract shall be in effect;

III – statement by the party responsible for authorizing the expenditure that the obligations undertaken by the Public Administration in a partnership contract are in line with the Budget Guidelines Act and have been considered in the Annual Budget Act;

IV – estimate of long-term flow of public funds, necessary for fulfilling, throughout the term of the contract and in each fiscal year, the financial obligations undertaken by the Public Administration;

V – the project is included in the Multi-Year Plan in effect;

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
9. En el proyecto de Presupuesto de Egresos de la Federación de cada ejercicio fiscal, se señalarán las obligaciones de pago previstas en los contratos de servicios de largo plazo vigentes tanto para el ejercicio fiscal correspondiente como para los subsecuentes, conforme a la información que proporcione la dependencia o entidad contratante.

20. Las dependencias y entidades deberán presentar las solicitudes de autorización de proyectos para prestación de servicios ante la Secretaría, a través de las Direcciones Generales de Programación y Presupuesto sectoriales. En el caso de entidades sectorizadas, la solicitud deberá ser presentada por la dependencia coordinadora de sector y, en el caso de las entidades no sectorizadas, la solicitud deberá presentarse por la entidad, directamente a las citadas Direcciones Generales.

21. Las solicitudes a que se refiere el numeral anterior deberán acompañarse de la siguiente información:

II. La justificación de que el proyecto es congruente con los objetivos y estrategias establecidos en el Plan Nacional de Desarrollo y en los programas sectoriales, institucionales, regionales y especiales que correspondan a la dependencia o entidad solicitante;

27. LA solicitud de autorización, las dependencias y entidades deberán anexar los siguientes documentos:

I. El proyecto de contrato de servicios de largo plazo, que deberá contener, entre otros términos y condiciones, los establecidos en la fracción VI del numeral 21, así como los siguientes:

b) Una estimación de las obligaciones de pago, a precios del año, a cargo de la dependencia o entidad contratante, tanto para el ejercicio fiscal correspondiente como para los subsecuentes.

27. LAS garantías, coberturas y seguros que serán contratados obligatoriamente por parte del inversionista proveedor;

IV. La justificación de que la celebración del contrato de servicios de largo plazo se apegará a los objetivos y metas establecidos en los documentos que se presentaron para obtener la autorización para realizar el proyecto para prestación de servicios;

VI. Un documento que demuestre que, en su caso, la obligación de pago para el ejercicio fiscal vigente cuenta con la previsión presupuestaria correspondiente en el Presupuesto de Egresos de la Federación;
A differentiation based on the dichotomy public vs. private finance may be misleading as it implies a concept of off balance-sheet financing for public infrastructure and services. PPP are not a way for facing budgetary restrictions. Yet this misbelieve has been caused by the same origin of PPPs and the financial structure that have been used for developing them. In fact, PPP have grown up in parallel with the concern by some government (particularly, the European countries signatory of the Maastricht Treaty) to avoid increasing government debt, which created incentives to enter into off-balance sheet financing arrangement. Moreover, the use of financial technique in PPP, such as project finance (that at least at the beginning was permitting some form of off-balance sheet financing) have reinforced the perception of PPP as a mean for reducing the incidence of infrastructure expenditure on public finances. This wrong perception was further implement by the association of PPP to self-sustainable concession, whereby the payment for the service/product provided by the user is able to cover the financing and to generate sufficient rewards to the operator.

3.1 Maintaining Institutional integrity and granting accountability of the process

Concession contracts raise important issues for the public-sector party regarding public accounting practices and the ownership of residual assets. The private finance aspect of concessions can allow the public sector to finance the construction of infrastructure ‘off the balance sheet’. The accounting treatment of payments by the public-sector party to the private sector can make the fiscal budget look healthier than it actually is, thereby undervaluing the cost of PPP financed infrastructure. This can bias decisions in favor of PPPs as opposed to more traditional procurement arrangements, and also make PPPs a means to unduly transfer costs from current to future generations (see IPPR (2001) for a discussion of how off balance sheet considerations mattered in the early PPP projects in the UK).

PPPs have become attractive to governments as an off-budget mechanism for infrastructure development as this arrangement may not require any immediate cash spending. The public sector’s other main advantages include the relief from bearing the costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation. [...] There are, however, underlying fiscal costs and contingent liabilities of PPPs to government that may arise in the medium and long term. Besides, there are many important economic, social, political, legal, and administrative aspects, which need to be carefully assessed before approval of PPPs are given by the government. PPPs have various limitations that should also be taken into account while consideration of this modality is made. The major limitations include:

- Not all projects are possible (for various reasons: political, legal, financial etc).
- The private sector may not take interest or may lack the capacity to undertake a project.
- A PPP project may be more costly unless additional costs (due to higher transaction and financing costs) are off-set by efficiency gains.
• Change of ownership to the private sector per se may not be sufficient to improve economic performance unless other necessary conditions are met, which include appropriate sector and market reform, and change in operational and management practices of infrastructure operation.
• Often, the success of PPPs depends on regulatory efficiency.  

Fiscal Responsibility

[Brazil: Lei 11.079, Art. 4]
Art. 4. The following guidelines shall be observed when contracting public-private partnerships:
IV – fiscal responsibility when contracting and implementing partnerships;

[Peru – Decreto Legislativo n. 1012 Art. 5]
Responsabilidad Presupuestal. Deberá considerarse la capacidad de pago del Estado para adquirir los compromisos financieros, firmes y contingentes, que se deriven de la ejecución de los contratos celebrados dentro del marco de la presente norma, sin comprometer la sostenibilidad de las finanzas públicas ni la presentación regular de los servicios.

Debt reduction and PPP: an uncertain belief

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004, Considerando]  
..Que con motivo de la restricción presupuestaria que enfrentan las dependencias y entidades de la Administración Pública Federal, resulta fundamental la participación de los sectores sociales y privado como coadyuvantes en el objetivo de hacer un uso eficiente del gasto público federal; Que es necesario aprovechar la experiencia y los medios de financiamiento y desarrollo de infraestructura con que cuentan los sectores social y privado, con el fin de dirigir los recursos público hacia las funciones esenciales de la Administración Pública Federal, así como a la prestación eficiente de los servicios públicos por parte del Estado; Que una forma de incrementar la eficiencia en el uso de los recursos del sector público es transferir a los sectores social y privado la mayor cantidad de riesgos y contingencias relacionados con los costos financieros y de ejecución de obras, mediante la utilización de esquemas para la realización de proyectos para prestación de servicios con base a los cuales se celebran contratos de servicios de largo plazo, a fin de que el gasto de cada ejercicio fiscal se concentre en los aspectos más importantes de la función pública; Que el grado de eficiencia que los sectores social y privado pueden aportar a las dependencias y entidades de la Administración Pública Federal en la prestación de servicios de largo plazo, con el uso de activos que posean dichos sectores, puede redundar en ahorros significativos para las dependencias y entidades, con el consecuente incremento en la eficiencia y racionalidad del gasto público a ser ejercido anualmente..

35 UNESCAP, Public-private partnerships in infrastructure development. An introduction to issues from different perspectives, Seul 2007
Ensuring Affordability

In Victoria (Australia) the decision about how a project is funded is separate from the decision about how it is delivered. Potential PPPs compete for limited budget funding along with all other capital projects (to ensure that all projects fall within the range that is considered affordable). Funding is approved on the basis of the preliminary public sector comparator (PSC) for the project (see section 2 in this chapter for a discussion of the PSC), thereby allowing a project to proceed under a traditional delivery method should private bidders not offer value for money. The PSC forecasts both the capital cost and the whole-of life operating costs, discounted to a net present cost (NPC). Bids are measured against the PSC.

In Brazil, project studies must include a fiscal analysis for the next ten years. In addition, the commitment of the federal budget to PPP projects is limited by law to 1% of the net current revenue of the government. In France, affordability is demonstrated by reference to the ministerial programme (a pluriannual indicative budgeting exercise) and not to the individual annual budgets of the departments.

In Hungary, starting in 2007, there is a limit on the amount of expenditure on PPPs within the budget, so each programme must fit within this limit. The use of budgetary limits on the total amount that can be spent on PPP projects also relates to the discussion in section 1.2 of this chapter on affordability and limited budget allocations.

In the United Kingdom, procuring authorities are required to complete an affordability model for any planned private finance initiative (PFI) project. The affordability model includes a sensitivity analysis. The procuring authorities complete these affordability models based on agreed departmental spending figures for the years available and on cautious assumptions of departmental spending envelopes in the future.


Finally, it is worth mentioning that PPP and public works do not necessarily imply different impacts on the budget. In fact, if in public works the contractor is normally paid at the completion of the project, the procuring authority may always borrow the sum needed for that payment diluting the impact of the same on various budgets.
4 Bidding process

4.1.1 Competition

Yet, partnership working with the private sector based on long-term relation must be scrutinized very carefully as it may easily lead to anti-competitive behavior. Moreover, the PA may be captured by the contractual power of the sole provider of service. On the other hand when the public sector is the receptor of the services provided by the private partnership, there can be a similar concern that the public sector wants to raise maximum revenues by granting private firms the right to act as a monopolist or be themselves captured by the monopsonist, normally with a pass-through of the negative consequences to the final users.36

<table>
<thead>
<tr>
<th>Public sector</th>
<th>Private sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provision of services</strong></td>
<td>Public sector involvement in provision, whether alone or with partners, is needed only where market failures cannot be eliminated through regulation of private providers — and, even then, public sector providers should be made to compete in ‘quasi-markets’, whether or not they are working in partnerships</td>
</tr>
<tr>
<td><strong>Commissioning of services</strong></td>
<td>Joint commissioning to increase joint outputs or reduce joint costs is cost effective</td>
</tr>
</tbody>
</table>

[Peru – Decreto Legislativo n. 1012 Art. 5]  
Competencia. Deberá promoverse la búsqueda de la competencia a fin de asegurar eficiencia y menores costos en la provisión de infraestructura y servicios públicos, así como evitar cualquier acto anti-competitivo y/o colusorio.

La passation d’un contrat de partenariat est soumise aux principes de liberté d’accès, d’égalité de traitement des candidats et de transparence des procédures. Ces principes permettent d’assurer l’efficacité de la commande publique et la bonne utilisation des deniers publics. Elle est précédée d’une publicité permettant la présentation de plusieurs offres concurrentes.

36 BOVAIRD T., cit., pp. 206.
Public Consultation

[Brazil: Lei 11.079, Art. 10]
Art. 10. Public-private partnerships shall be procured by competitive tendering. The opening of the tendering process requires:
VI – submission of the draft invitation to tender and the draft contract to public consultation, which should be advertised in the official press, in newspapers of general circulation and in electronic media, informing the arguments for contracting a partnership, the scope and term of contract, its estimated value, setting a minimum period of 30 (thirty) days for comments and suggestions, which shall end at least 7 (seven) days prior to the scheduled date for publishing the invitation to tender
5 Contract design

5.1 The need for capacity and institutional integrity in contract design

The highly complex nature of PPP deals poses a serious challenge to public administration capacity, which needs normally to be handled through highly expensive external consultants. Whenever austerity regulations or lack of resources reduces the possible reliance on such experts, the inexperience of normally underpaid public officials may be overwhelmed by the private partners’ experts. This may lead to the drafting of contract provisions highly favoring the private partner. It may also favor dubious behaviors or put at risk the design of supervision mechanism which may jeopardize future accountability. On the other hand, the recurrent and indiscriminate use of external consultant may equally result in excessive (and often inflated) costs. In addition, the extensive use of eternal consultants may also produce the undesired transfer of privileged information to some of the competing bidders, especially when limited markets of such specialized consultants favor their conflicts of interest. To this regard specific incompatibility rules may reduce the emergence of such conflicts. Moreover, the standardization of commercial principles may be a useful tool in reducing misspecification of outputs, transaction cost and the incidence of corruption. Yet, the capacity of public official remains a central point which may suggest the creation of special advisory units aimed at supporting sectorial and local administration in structuring PPP deals. Those units are nonetheless exposed to other conflict of interest, whenever they operate as advisor and promoters. They are also exposed to political pressure to speed up the PPP preparation and bidding processes, if not alternating artificially such processes to make “white elephant fly”.

5.1.1 Contract misspecifications

PPP contracts are based on an output specification approach: the public-sector party defines the basic standards of service whilst the private-sector party chooses how to meet and possibly improve upon these basic standards. This approach incentivizes innovative solutions, allowing for private sector's skills and knowledge to feed into public service provision, but comes at the cost of greater risk of contract misspecifications for the public sector. In particular, problems may arise because the output characteristics specified in the contract, which form the basis of the contractual obligations, may be ill or not clearly described. Problems may also arise to the extent that the output specifications are inconsistent with the infrastructure needs that the PPP intends to satisfy, and that should be identified by conducting a careful assessment previous to the contract drafting. Mistakes at the contract drafting stage can then be very costly for the public-sector party because of the long-term nature of most PPP contracts.

A number of factors can lead to contract misspecifications. For example, they can be due to mistakes resulting from an incompetent public-sector party (or whoever acts on its behalf) in charge of contract drafting. Lack of appropriate incentives for the public-sector
party and thus inadequate effort in information acquisition and processing can also result in contract misspecifications. Corruption and favouritism explain contract misspecifications that lead to the private-sector party receiving very favourable contract terms.

Making the public-sector party accountable for its actions so as to provide adequate incentives is not an easy task. Labour market regulations often constrain the use of incentive mechanisms for the public sector and lack of financial stakes make it difficult to provide incentives in the first place. Also, PPP contracts are generally long-term contracts, so when mistakes are discovered, the public sector employee may have moved job already. In the early stages of PPPs, mistakes at the contract drafting stage have often arisen simply because of lack of experience of public administrations on the writing of PPP contracts. In Europe, a challenge for the public sector has been to rapidly build up the capacity and knowledge to devise and implement PPPs, and to manage the PPP contractual relationships over the long-run. The public sector's progress on this front has not kept pace with that of private sector partners. In the UK, recognition of this problem by the National Audit Office has led to a series of programs aimed at training public officials and to an extensive use of external consultants.

5.1.2 External consultant

However, the use of external consultants can be a means to acquire competence and knowledge for the benefit of the public-sector party, but it also has limits. First, the use of consultants does not address the problem of corruption. A priori, there is no reason to believe that external consultants maybe less prone to corruption than public sector bureaucrats, although it could be argued that large consultancy firms may have more to loose from being involved in a corruption scandal than single individuals. Second, large consultancy firms that have the specific knowledge to deal with contracts as complex as PPP contracts find themselves hired by the public sector in one contract and by the private sector in another. Working for both sides, although at different points in time, is likely to be conducive to favoritism.

5.1.3 Standardizing commercial principle for reducing conflicts and enhancing predictability

To the extent that experience with PPP in a specific sector accumulates, i.e. the PPP market matures, the public authorities could standardize parts of the contracts for that specific sector as a means to reduce the likelihood of contract and output misspecification. From ongoing projects in that sector it is possible to learn what the generic risks are, and then use this information to design a standard contract (or some parts of it) that allocates these risks properly. Thus, the use of standardized contracts also reduces transaction costs resulting from agreeing and drafting the contract, provided that both parties are willing to accept the standardized terms. 37 Finally, legislation for PPP contracts providing for the compulsory use of standardized contracts could reduce the

37 In PPP markets which are not mature, the use of guidelines on commercial principles could be a (probably imperfect) substitute for standardized contracts.
incidence of corruption by making it impossible to offer bribes in exchange of favourable contract terms. Standardized contracts are widely used for example in the UK (see HM Treasury, 2007).

However, the compulsory use of standardized contracts also brings the cost of increased rigidity and, in particular, of valuable local or specific information not feeding into the standardized contract. This problem could be overcome by adopting an ‘intermediate’ approach towards contract standardization. The process of standardization could be governed by more general guidelines on how to write PPP contracts, more general and less rigid that a standardized contract. Alternatively, the public-sector party could be given the option to introduce motivated changes into the standardized contract. The benefit of this increased flexibility would then have to be weighed against the cost of a higher risk of corruption and favouritism.

5.1.4 PPP Advisory units

For these reasons, it might be advisable to also develop public sector ‘special units’ that advice local administrations on the drafting of contracts (this entity could also advice local administrations in their evaluation of PPP projects, tender documents and bids, and in negotiations with private partners). The PPP Unit Partnerships UK in the UK and the Unità Tecnica della Finanza di Progetto in Italy serve these functions. These entities could lead the ‘learning and standardizing’ process by helping to internalize the informational externalities that exist across the different contracts, and could be made accountable for their actions.

As long as the entities are independent (e.g. the UK PPP unit is not), they could also be in charge of accepting or rejecting proposals for modifications to the standardized contracts made by local authorities, which would allow the use of flexible standardized contracts whilst maintaining control on possible abuses or mistakes. Advice, oversight and approval of modifications of the contracts during renegotiation could also be delegated to these special entities. Compared to a local public-sector party, the reputational concerns of the entity should be stronger, thus possibly limiting its incentives to renegotiate contract terms with the private-sector party. 38

As suggested by Monteiro (2005), these units specialized in PPP contract design and management should be separated from industry regulators (if any) in order to avoid a conflict of interest. A yet separate unit would then have to monitor the activity of the PPP unit, by surveying public-private relationships, collecting, analyzing, and then disseminating information on PPPs.

In fact, the very development of PPPs enticed many competent public sector employees to join the private sector. While this has probably raised overall productivity, it made the objective of creating value for money for the public sector through PPPs even more challenging. A skill retention policy, e.g. increase remuneration of project manager

38 See Bennett and Iossa (2006) for a study on how delegation of contract management and renegotiation to a PPP unit affects the investment incentives of the private-sector party.
or module training qualification linked to an existing training qualification, may help reducing this problem.

5.2 Drafting transparent and accountable partnerships agreements

In PPP, the cooperative sharing and mutual support of the parties is based on an efficient risk allocation. Such allocation provides incentives to the parties for undertaking actions aimed at controlling the overall cost of the PPPs. Nonetheless, risk allocation is effective only when it is founded on reliable basic assumptions; when risks are able to be managed by the bearing party and; when the non-bearing party does not take the risk back in the operational phase. Political pressures may nonetheless mine the institutional integrity of PPP constitution processes. Particularly, the need of aligning project completion with political cycles may cause the speeding up of prefeasibility studies, which constitute the basic assumptions for risk sharing. This may trigger material underestimation of risks and consequently nullify or reduce drastically the cost-saving effect of risk transfer to the private party.

The indiscriminate risk transfer to the private sector may also be used to artificially lay-off the weight of cost intensive infrastructure from public balances. This may nonetheless increment the total cost of the infrastructure service delivery as risk allocation is connected to the correspondent reward associated with the risk-bearing. Risk allocation must therefore be tailored to the individual projects and their cost-predictability. This may also open the possibility of sharing risks ex-ante through alliancing techniques or redistributing rewards proportionally to the private and public party, particularly in case of positive refinancing.

Output based specifications of private party performances free in most circumstances the public sector from important project risks (among others, design and construction), they also allow the private party to provide innovative cost-effective solutions. Yet, above all, they position users as main beneficiaries of the partnership. In this context, empowering users and affected stakeholders may mean connecting their satisfaction to the payment mechanism of private partners. Conversely, if payments to the private party are generally contingent to private performance, a failing payment mechanism may equally weaken the major incentive for the private party to deliver. A discrentional and ambiguous payment mechanism may also favor collusive behaviors of the parties, or eventually, jeopardize the public-private relation by favoring conflicts (normally caused by difficult interpretations). Moreover, empowering stakeholders may also mean ensuring that the public is informed of the social and environmental impacts of PPP infrastructure projects. This can be reached by encouraging better administrative arrangements to take these impacts into account, and facilitating users and stakeholder consultation and protection in regulatory decisions.

In fact, the complex, technical and extensive nature of PPP contract makes its understanding and control particularly difficult. Yet, the multi-annual commitment of extensive amount of public funds makes the transparency of PPP agreement even more
needed. The simple disclosure of contract terms is therefore a mandatory element for reassuring the community, structuring a stable fiscal policy, and allowing national auditors to scrutinize PPP deals. That disclosure is nonetheless sufficient per se to inform non-specialized user, taxpayers or even Members of Parliament in charge of scrutinizing public finance budgets. The mandatory requirement of contract summary’s publication may enhance the usefulness of contract term transparency as well as its effectiveness and accessibility. Yet, full transparency has so far suffered constraints due to commercial confidentiality. Issues such as profit margin, private entity cost, intellectual property matters, etc have been considered not appropriate to be raised in the public arena. The level of disclosure should nonetheless be increased also in those cases, eventually delegating to supervising entity (such as national auditors) the decision of recommending the timing for releasing sensitive information, depending of the nature of the infrastructure services implied and the public fund committed.

5.2.1 Making contract terms transparent

Disclosure requirements of contractual terms are a crucial tool in the governance of all economic transactions. When public money is involved, governance problems tend to increase because of the many layers of delegation that often protect public agents and the lack of market-based governance mechanisms. Disclosure requirements therefore tend to be more stringent for transactions involving public partners in the hope that higher transparency can increase accountability by facilitating taxpayer control. In the particular case of PPP procurement, accountability is made even more difficult by the complexity and specificity of each procurement.

For Public Procurement in general, where governance, and in particular corruption problems are still widespread even in OECD countries, in large part because market forces cannot discipline politically-protected public buyers that misbehave, stringent disclosure requirements are also seen as a potentially powerful remedy (see e.g. Rose-Ackerman, 1999; Kaufmann, 2005).

It is interesting that Coppier and Piga (2007) find an inverse cross-country relationship between the level of transparency in public procurement and the perceived level of corruption in a country, as measured by Transparency International. According to the authors, this relationship is the result of governments’ attempts to fight corruption by increasing disclosure and transparency in countries where this is a major problem. This relationship testifies for the widespread belief that transparency is a force that limits corruption and improves governance, but also that transparency is a relatively weak force..

The direct costs of disclosing information on contract terms and performance evaluation appear to be rather small in general (see e.g. Leuz, 2007), and even more so for repeated procurements and large infrastructure projects like PPP. Disclosure costs in terms of potential competitive harm for the private-sector party (and for potential private partners in the phases that precede the signature of the contract) should be rather small.
when disclosure regards contractual and output-related performance measures, and much larger when disclosure refers to investment choices and other input-related variables that may convey delicate information about production processes and strategic choices.

When the buyer is a public entity, another potential cost of disclosure adds to the competitive harm for the private partners: information can be deemed sensitive to the public interest, for example on national defence grounds or on the ground of weakening the future bargaining position of the public sector in future procurements.

One cost of disclosure rules that is not often discussed, but that has been identified early in relation to public procurement rules, is that public knowledge on the price and quality conditions offered by the winning private partners may harm the competitive process by facilitating anti-competitive agreements among competitors. Bid ringging tries to illegally keep procurement prices at a level higher than the competitive one, trying to prevent competitors from cutting prices by threatening to punish them with ‘price wars’. And, as the Nobel-prize-winner George Stigler wrote regarding public procurement auctions: “The system of sealed bids, publicly opened with full identification of each bidder's price and specification, is the ideal instrument for the detection of price cutting.” (1964, p. 48).

In comparison with the public procurement of standardized products or services, PPPs are likely to be even more problematic from a governance point of view, as PPP procurements tend to be infrequent for the particular public buyer, much larger, more complex, and often specific to particular assets. These features make benchmarking and other standard forms of outside control more complex. At the same time, stakes are higher than in standard procurement, so bad governance can be much more costly.

Early reports on PPP best practices recognized well the particular governance problems of PPP procurement, and therefore suggested (IPPR, 2001) or prescribed (NHS, 2003) great levels of transparency and a widespread and proactive disclosure of contractual terms.

Ex post analyses such as Gosling (2004), however, have revealed that even in a country like the UK, with a good general level of accountability and a lively public debate, non-binding ‘best practice’ recommendations to disclose information were seldom followed by public administrations, even when directly asked for the information. It is clear, therefore, that in countries with weaker general accountability and public debates, non-binding disclosure requirements are likely to have little or no impact.

We mentioned that the standard ground for labeling a piece of information as ‘confidential’ and not disclosing it is that the piece of information, if disclosed, could damage a private party by undermining its situation relative to competitors. This suggests there is a trade off between accountability and willingness of private parties to disclose delicate information on how certain needs could be faced in a PPP. Such information is crucial, for example, in the early stage of assessing the suitability of PPP for an infrastructure project.
The trade off discussed above should be relevant for information about the production processes and strategic choices of the private-sector party. The disclosure cost in terms of potential competitive harm for the private-sector party should therefore be small or absent when disclosure is limited to contractual terms (payment schemes, quality standards, deductions, prices, etc.) and other output-related measures (revenues).

However, since PPP contracts are based on output specifications and the assessment and selection phases are in the past, from a PPP governance perspective the most important contractual information that needs to be disclosed once the contract is signed is exactly that about output variables. Moreover, information should be disclosed within a pre-established, short, and binding time limit from its emergence. The time limit could be established by law, by the national auditor, and/or by the contract, but in any case it must be short and strictly binding. Notice that such information should imply little or no competitive harm for the private-sector party.

The case for confidentiality on contractual and output features that convey no information on inputs after the contract has been signed is, therefore, extremely weak.

The other cost of disclosure mentioned earlier, the direct cost of making information public, appears simply negligible if compared to the very large size typical of PPP procurements. It is not a case, therefore, that most reports and best practice documents suggest maximal disclosure of PPP documentation, limiting confidentiality to a very strict set of information (HM Treasury, 2007).

The competitive cost of disclosing information on the awarding price highlighted by Stigler, however, is likely to be relevant for PPP, as PPPs regard often such large projects that potential competitors can be counted on the fingers of one hand, making distortions of competition highly likely. This could be a reason not to disclose exact price information in the contract.

We have been writing until now about full disclosure requirements, unrestricted in terms of recipients. Disclosure restricted to bodies like Agencies and Accounting offices that would maintain the information relative to competitors under secret does not cause the costs discussed, and therefore such a disclosure must be complete (HM Treasury, 2007).

As discussed in the companion paper (Section 1), a case can be made to withhold information from the public only when that information is ‘commercially sensitive’ or is sensitive to the public interest (e.g. on national defence grounds). That is, only information whose dissemination is either contrary to the public interest or unique to the private-sector party (in the sense that it could damaged the private partner’s competitive position if it were disclosed).

39 Also, a case could be made for disclosing the criteria used in the PPP suitability assessment (e.g. the public sector comparator) and the business outline (i.e. the formal presentation of the project for approval by the public sector).
The focus here is only on the disclosure rules that apply once the private-sector party has been selected and the contract has been drafted and signed by the relevant parties. At this stage, the type of information that is important to enhance accountability relates to contract design and to output specification and performance variables. This information is not related to input variables (i.e. how to obtain the output) which are precisely the variables most likely to contain commercially sensitive information.

For this reason, and given the serious accountability problems involved in PPP procurement, the baseline of these guidelines is the presumption that all documents and information must be readily and proactively publicly disclosed unless:

(i) they are identified as ‘commercially sensitive’ by the private-sector party and recognized as such by representatives of the PPP Authority and the benefits of increased accountability achieved through their disclosure have been shown to be substantially smaller than the cost the private partner may incur in case of public disclosure;

(ii) they are identified as sensitive to the public interest (e.g. for national security reasons) and the benefits of increased accountability achieved through their disclosure are shown to be smaller than the cost in terms of public interest in case of public disclosure.

In other words, there should be a strong presumption that contractual and operational information is neither commercially sensitive nor sensitive to the public interest, and a stringent test should be used to verify claims that they are, with written and publicly available arguments in case of information that passes the test and is not disclosed.

In particular, the details of the PPP contract regarding output levels required from the private sector and connections between output levels and payments (i.e. the payment scheme) will generally not contain commercially sensitive information nor information sensitive to the public interest. Therefore, the final contract and all related documentation should be put in the public domain largely intact (with the only exception of documents related to the production plan and process, and other input variable that passed the test above). Also, output specifications, performance targets measured during the contract execution, and the payment deductions for low performance applied, should be all

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40 The present best practices are relative to contract design only. They do not consider information disclosure requirements during the consultation period preceding contract drafting (where absent protection firms would not offer suggestions on possible solutions based on private knowledge), nor disclosure rules during the competitive private partner selection process (where information disclosure may affect the functioning of the process).
publicly disclosed within a pre-determined time period after they have been measured/applied.

Ways in which best practices on information disclosure have been circumvented in the past included hiding information in hard-to-reach corners of a homepage, or delaying disclosure as long as possible without answering to the requiring parties. For this reason, information should be put in the public domain in a proactive way, possibly in electronic form and in the first page of the project’s homepage. Moreover, information should be disclosed within a pre-established, short, and binding time limit from its emergence.

Further, the experience suggests these disclosure requirements should not be left as suggested practices that the contracting parties are then free to follow or not. Therefore, disclosure requirements should be made compulsory; otherwise it is very likely that they will not be followed. Moreover, if general regulation does not cover disclosure rules, then each contract should specify disclosure rules in detail.

Information contained in the final contract that is not about input or production processes, but may have a ground in terms of ‘commercial sensitivity’, is that about financial provisions (e.g. prices and priced elements of the payment mechanism). In particular, financial provisions internal to the relationship among the contracting partners can be ‘commercially sensitive’ (for example, terms on which lending is arranged can be ‘commercially sensitive’ for the lenders). This kind of information, however, is not of the highest relevance for the accountability of the project. Still, it should pass the test before being declared confidential and not disclosed.

Of course, these baseline recommendations regard disclosure of information to the general public. Disclosure rules for Agencies empowered to control and regulate the PPP procurement should be complete, i.e. disclosure rules should include full and swift access to all contractual information, including that regarding inputs (production plans and processes, etc.).

5.2.1.1 Dealing with qualitative aspects or tasks that are too costly or impossible to specify

All was written earlier in this section assumed that all output specifications are simple to monitor, clearly defined in the contract, and easy to verify by a third party (court or arbitrator) in case of disagreement/litigation. Under this condition, the acquisition of service at the root of the PPP can be seen as an acquisition of standardized supply, which is reasonable to pursue with a detailed contract specification and competitive tendering (Albano et al., 2006a; Bajari and Tadelis, 2006).

In any kind of service, however, there are qualitative aspects or tasks that are too costly or simply impossible to specify in a contract so that they can be monitored and verified by third parties. For example, it is very hard to specify a contractually usable
standard for how ‘good’ is food provided in a canteen or how ‘smart’ are the doctors and nurses providing hospital services. Tasks with poorly measurable or verifiable quality dimension, if bundled in the same contract with other easily measurable tasks, may lead an opportunistic provider to underperform on these non-measurable tasks to cut cost and maximize profits. If only the main contract is there regulating the service, this may take place without any consequence for the supplier (in terms of deduction) because the fall in quality cannot be verified by who is in charge of enforcing the contract.

These types of tasks -sometimes very important- cannot be regulated by any of the contractual forms discussed earlier. Other forms of incentives should be adopted. First, in some cases it is advisable to ‘unbundle’ the PPP by removing tasks of this type from the main PPP contract, and have them regulated separately (Kerr, 1975; Holmstrom and Milgrom, 1991).

Second, customer satisfaction surveys run by a third independent party could be run regularly, and deductions for poor quality should depend on the level of customer satisfaction achieved (Albano et al. 2006a).

More generally, to ensure an overall high quality level of service the public sector agency in charge of the procurement contract can use past performance information (PPI) as selection criteria in new tenders (Kelman, 1990). The public sector could set up a system of private sector performance evaluation on a national basis, as done in the US for standard procurement, requiring public sector agents in charge of each PPP operate a recurrent evaluation of private-sector party performance, centered on results from independent customer satisfaction surveys. The database would then be made available to other public sector agents that are selecting private partners for related projects, and these should be required to substantially penalize poorly performing private partners in the new tendering process (US DISA, 2003).

Past performance information may both be verifiable and non-verifiable or ‘soft’ (like ‘satisfaction indicators’). Particularly for the second type of PPI these schemes rely on the public sector agencies being accountable, as it may be difficult to verify whether the information they provided are entirely truthful. To reduce dependence on public sector officials accountability, collection of ‘soft’ information may be delegated to independent third parties, firms specialized in customer satisfaction surveys, and may involved a large number of anonymous interviews to users.

This system would act as a high quality ‘reputation’ or ‘brand’ acts and sustains high quality in standard markets (Calzolari and Spagnolo, 2006). For firms also active on the private market, the incentive power of customer satisfaction surveys and past performance evaluations could be further increased by making their results easily accessible to the public (Dellarocas et al., 2006). The well performing firms will then be able to increase their deserved reputation for high quality, while the badly performing firms will be publicly unveiled and avoided by future public and private customers. This ‘certification role’ could further strengthen incentives for the provision of overall high quality.
Of course, if poorly observable tasks or quality dimension are dominant in a planned acquisition, then the acquisition is not suitable for an output oriented PPP, and will be much better handled through an input oriented cost-plus contract awarded through negotiations (Bajari and Tadelis, 2006).

Relation between price mechanism and payment mechanism

5.2.2 Balancing risks and sharing benefits between the partners

In a contract, the risk allocation between the contractual parties should accomplish two sets of goals: to provide incentives for the parties to undertake efficient actions when these actions cannot be directly contracted upon (because they are not immediately observable) and to provide insurance to a risk averse party against the risks of the project. In a PPP contract, in particular, the goals of risk allocation should be:

(i) to provide incentives to reduce the long-term cost of a project;
(ii) to provide incentives to complete the project in time and within budget;
(iii) to provide incentives to improve the quality of services and revenues yield; and
(iv) to insure the risk averse public and private partners against risk. Risk insurance for the public partner helps to improve its profile of expenditure on the project by converting variable operation and capital costs into predictable unitary payments. Risk insurance for the private partner helps to reduce the cost of capital.

In order to accomplish the above goals in the most effective way, two principles should guide the allocation of risk between the public and private partners:

(P1) given partners with similar risk-aversion, the risk should be allocated to the party that is responsible or has relatively more control over the risk factor, and

(P2) given partners with similar responsibility or control over the risk factor, the risk should be allocated to the party that is more able to bear it, i.e. the less risk-averse party.

The intuition and the implications of the above principles can be understood by way of an example. Consider a PPP where the private-sector party is in charge of constructing a facility for the provision of a public service. Suppose that there are two construction practices that can be followed, practice G (good) and practice B (bad), and that the type of construction practice adopted by the private-sector party is not observable by the public-sector party.

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41 See Martimort and Sand-Zantiman (2006) for a discussion of how risk allocation can also help to address situations where the public-sector party is more informed than the private sector party about the quality of the assets.
Suppose that if practice G is chosen, then with probability 10% problems arise during construction that lead to an increase in the cost of the project by $10,000. If instead practice B is chosen, then the corresponding probability is 50%. That is, we are in a situation where the efficiency of the construction practice affects the likelihood of cost overruns. Suppose also that practice G has a non-contractible cost for the private-sector party of $7,000 whilst practice B has a non-contractible cost of $6,000. Non-contractibility implies that this cost is borne by the private-sector party who then has incentives to take it into account when choosing between practice G and B.

Finally, consider the possibility that the private-sector party and the public-sector party are risk averse. A risk averse party faces a cost for bearing risk (we call it ‘risk premium’) which generally increases with: (i) the degree of risk aversion of the party, (ii) the likelihood that adverse events will occur, and (iii) the amount of risk borne, in the example given by the expected cost overruns. Denote by $r_{pr}$ and $r_{pu}$ the parameters, with values between 0 and 1, that capture the degree of risk aversion of the private-sector party and of the public-sector party, respectively. Denote by $x$ the fraction of risk borne by the private-sector party as provided by the contract; $1-x$ is the fraction of risk borne by the public-sector party.

For the sake of simplicity, we can use the following expressions as a simplified measure of the cost of bearing risk for the private-sector party in our example:

$$r_{pr} \cdot x \cdot 10\% \cdot $10,000 \quad \text{when practice G is used},$$
$$r_{pr} \cdot x \cdot 50\% \cdot $10,000 \quad \text{when practice B is used}.$$

Whilst the cost of bearing risk for the public-sector party is:

$$r_{pu} \cdot (1-x) \cdot 10\% \cdot $10,000 \quad \text{for practice G},$$
$$r_{pu} \cdot (1-x) \cdot 50\% \cdot $10,000 \quad \text{for practice B}.$$

Consider now the expected total cost of any given practice. This is given by the sum of the expected cost overruns, the non-contractible cost for the private-sector party, and the risk premium for each of the party that bears the risk.

For practice G the expected total cost is given by:

$$C^G = [10\% \cdot $10,000] + $7,000 + [r_{pr} \cdot x \cdot 10\% \cdot $10,000 + r_{pu} \cdot (1-x) \cdot 10\% \cdot $10,000]$$
$$= $8,000 + $1,000 \cdot [r_{pu} + x \cdot (r_{pr} - r_{pu})].$$

Whilst the expected total cost of practice B is:

$$C^B = [50\% \cdot $10,000] + $6,000 + [r_{pr} \cdot x \cdot 50\% \cdot $10,000 + r_{pu} \cdot (1-x) \cdot 50\% \cdot $10,000]$$
$$= $11,000 + $5,000 \cdot [r_{pu} + x \cdot (r_{pr} - r_{pu})].$$
It then follows that practice G always minimizes the cost of the project since \( C^G \) is always lower than \( C^B \). Therefore, the efficient practice is practice G.

The issue is then whether the private-sector party has incentives to select practice B, given that its choice of practice cannot be contracted upon. As we show below, a problem may arise because the private-sector party only takes into account its own cost and not the total cost of the project, and because of the presence of some non-contractible costs.

In particular, consider the rational choice for the private-sector party. If the private-sector party chooses practice G, it will face the cost:

\[
[x \cdot 10\% \cdot $10,000] + $7,000 + r_{pr} \cdot x \cdot 10\% \cdot $10,000 = $7,000 + x \cdot $1,000 \cdot (1 + r_{pr}).
\]

Whilst if it chooses practice B, it will face the cost:

\[
[x \cdot 50\% \cdot $10,000] + $6,000 + r_{pr} \cdot x \cdot 50\% \cdot $10,000 = $6,000 + x \cdot $5,000 \cdot (1 + r_{pr}).
\]

By comparing the above two formulas, it is immediate that unless the private-sector party bears sufficient risk (i.e. \( x \) is sufficiently high), it will choose practice B instead of the efficient practice G. In fact, consider the case where the public-sector party bears all the construction risk and therefore pays for all cost overruns, i.e. \( x=0 \). In this case, the private-sector party will not have incentives to choose practice G since practice B will cost it less ($6,000 instead of $7,000).

If instead the private-sector party bears a sufficient amount of risk, it will choose the efficient practice G. In particular, for any \( x \) at least equal to 25\%, the private-sector party will have incentives to choose practice G independently of its level of risk aversion \( r_{pr} \). This is because for any \( x \) at least equal to 25\%, the cost of practice G for the private-sector party is never greater than the cost of practice B:

\[
$7,000 + 25\% \cdot $1,000 \cdot (1 + r_{pr}) \leq $6,000 + 25\% \cdot $5,000 \cdot (1 + r_{pr}).
\]

The above example shows the rationale behind principle (P1), which leads to the following criterion: when the private-sector has relatively more control over a risk factor, then transferring the risk to the private-sector party (i.e. setting \( x \) sufficiently high) helps to provide incentives for efficient actions (i.e. choice of practice G rather than B).

Note that for \( x \) between 0 and 25\% the inequality above is satisfied only for sufficiently high \( r_{pr} \). In other words, the more risk averse is the private party, the smaller is the risk it must bear to have correct incentives to perform.

Note also that the non-contractibility of the action undertaken by the private-sector party to control the risk factor (in our example given by the type of construction practice) is critical for principle (P1) to be relevant. Should the action undertaken by the
private-sector party be perfectly observable by the public-sector party, it would suffice for efficiency that the public-sector party specified in the contract which particular action it wishes the private sector to undertake (in our example, to choose construction practice G).

The above example also explains principle (P2). Consider again the total cost of practice G, as given above by:

\[ C_G = $8.000 + $1.000 \cdot [r^{pu} + x \cdot (r^{pr} - r^{pu})]. \]

We see immediately that transferring risk to the private partner increases the total cost of the project whenever the private-sector party is more risk averse than the public-sector party. Formally, whenever \( r^{pr} > r^{pu} \), the greater the risk transfer \( x \), the greater the total cost \( C_G \). More importantly, the total cost of practice G is minimized by letting the party with the lower degree of risk aversion bear most of the risk. That is, by choosing \( x \) that minimizes the term \( [r^{pu} + x \cdot (r^{pr} - r^{pu})] \).

The aim to minimize the total cost of the project, isolating risk averse parties from risk, explains principle (P2) and yields the following criteria that abstract from the effects of risk allocation on incentives (i.e., they hold assuming that project G is selected). First, when the public-sector party is more risk averse than the private-sector party (\( r^{pu} > r^{pr} \)), then the total cost of the project is minimized by letting the private-sector party bear all the risk; this can be achieved by setting \( x=1 \). Second, when instead the public-sector party is less risk averse than the private-sector party (\( r^{pu} < r^{pr} \)), then (in the absence of incentive problems) the total cost of the project is minimized by letting the public-sector party bear all the risk; this can be achieved by setting \( x=0 \).

When we put together both the issue of incentives and that of risk premiums minimization, it is then clear that risk is optimally allocated if the following holds:

i. When the public-sector party is more risk averse than the private-sector party (\( r^{pu} > r^{pr} \)), then risk transfer to the private-sector party helps both to ensure incentives over non-contractible actions and to minimize the total cost of the project. The optimal risk allocation then calls for the private-sector party to bear all the risk: \( x=1 \).

ii. When the public-sector party is less risk averse than the private-sector party (\( r^{pu} < r^{pr} \)), then risk transfer to the private-sector party generates a trade-off: it helps to ensure incentives but it may lead to an excessive risk premium. Typically, however, the incentives consideration prevails and the efficient risk allocation has the private-sector party bearing a substantial amount of risk, the more the less risk averse it is.

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**Case Study: TransMilenio Bus Rapid Transit System in Bogota (Colombia) (Part I)**

The TransMilenio (TM) Bus Rapid Transit System was developed in 2000 to upgrade and operate the Bogotá bus transport system by a partnership between the public sector and a number of private companies.
Before the TM project, the bus transport service was provided by a few bus companies that owned the government-issued routes and rented them to private bus owners and by small private bus operators serving fixed routes. Since the operators’ revenue depended on the number of passengers, there were often ‘price wars’ to attract passengers (Colombians referred to this phenomenon as ‘war of the cents’ because only minimal price reductions were feasible in bus fares). Outcomes from such a system were far from efficient: long delays, oversupply of seat capacity, and low quality of service.

The TM project planned to rationalize bus routes by building exclusive bus lanes in critical areas of Bogotá and using a system of feeder routes to complement the main lanes. A modern infrastructure was planned involving a network of enclosed bus stops, pedestrian bridges, terminals, and transfer stations. The overall bus route system was to be built over 15 years and would include 22 exclusive corridors covering around 400 km with a capacity to transport 5 million people daily.

Contracts and partners

A publicly owned company, TransMilenio SA, was set up to manage the project. The company developed the planning and contract drafting stages. It also conducted the tendering to select private partners that would build infrastructure and operate the main routes, the feeder routes, the ticketing system, and the payments system.

After launching the TM project, TransMilenio SA was responsible for administering the new bus transport system. The TM contracts entitled TransMilenio SA to undertake monitoring and verification activities in order to ensure quality performance and customer service. In this regard, a system of fines was implemented to penalize the private partners failing to comply with their contractual obligations, responsibilities and investment requirements.

A remarkable feature of the TM project was that the public sector established a partnership with several private partners simultaneously: not only the building and operation stages were developed by different private companies, but also different activities within the operation stage were assigned to different private companies.

Long-term concession contracts were used to set out the TM project coordinating the activities of the many partners involved, ensuring bankability, an adequate balance of risks and rewards, and minimum scope for conflict of interests.

In a sort of service unbundling, the private partners in charge of the operation activities were responsible for the provision of a specific service and had to meet certain investment requirements, e.g. transport companies operated the buses, a company was in charge of collecting fares, another company managed the distribution of collected revenue among the bus operators, etc.

Financing

In the TM project, there was a clear distinction between activities to be financed by the public-sector party and those to be financed by the private partners. Public funding was required to invest in the transport infrastructure. The cost of the main construction works was estimated in USD 240 million for the period 1998-2002, and USD 480 million for 2002-2005. Most of the infrastructure cost was to be borne by the national and local governments. The contribution of the national government was around two-thirds of the infrastructure cost, partly financed with a loan granted by the World Bank. The Bogotá government was able to financially support the TM project thanks to its strong fiscal position and the autonomy granted to local authorities to fund the provision of public services. The city of Bogotá committed half of the revenues from a gasoline sales surcharge for financing the project.
On the other hand, the private partners provided financing for buses and ticket machines. Their invested funds were to be recouped by charging fares to final users, with no subsidies nor guarantees offered by the public sector to the private-sector parties.

**Activities and risk allocation**

As was mentioned above, the TM project was a partnership between the public sector and many private partners that required complex contractual arrangements to coordinate the building and operation activities.

To build the infrastructure, the public-sector party contracted with private constructors selected on a competitive basis. Being responsible for financing the investment in infrastructure, the public-sector party retained the financial risk of the project. As the works were to be undertaken in different urban districts while the bus transport services were being provided, a coordination committee was formed to monitor the building and facilitate the bus transport service provision.

To conduct the operation activities, the public-sector party contracted with different partners and unbundled the operation of buses, the collection of revenues, and the distribution of revenues among the bus operators.

The existing bus companies awarded concessions through competitive bidding to operate the bus routes. The award criterion was based in a system of points in which bidders received points according to their experience, bus quality, and emission levels. Thus, TM encouraged the bus operators to provide an efficient, modern, and non-polluting vehicle fleet. The bus operators had to invest in new buses, so financial risk was transferred to them.

Two different private companies were selected by competitive bidding to collect fares and to distribute revenues among the bus operators. One company had responsibility for investing in ticket machines and managing the ticketing system. The other company, a financial service provider, had responsibility for managing the trust fund where fare revenues were deposited and the payments system to distribute the revenues.

*Sources: see TransMilenio (Part II)*

### 5.2.2.1 Limits to risk transfer

The public-sector party should keep in mind that certain residual risks cannot be transferred, e.g. the risk of political discontent if the public service provision deteriorates as the private-sector party underperforms (objectively or according to the public’s perception).

Further, risk allocation in practice may differ from what it has been planned and originally envisaged because the public-sector party is the provider of last resort in all PPP projects. If, for instance, a PPP school were found to be massively behind schedule and over budget during the construction stage, the public sector would have to take back full control of the project. The need to ensure service continuation is often one of the reasons behind the decision of the public-sector party to renege on contracts provision either by bailing out a private-sector party in difficulty or by not levying penalties. These practices tend however to have serious negative effect in the long run, and should be avoided as far as possible, as discussed at greater length in Section 5.
Case Study: The London Underground (UK) (Part I)

The bidding process

The PPP project to rehabilitate and upgrade the London tube was offered to private-sector companies (the so called Infracos) through different contracts involving different parts of the underground network. The responsibility for providing the transportation service to final users, instead, was retained by a public-sector company, the London Underground Ltd. (LUL).

In a first stage, contracts were tendered and the preferred bidders, the Tube Lines and Metronet consortiums (Infracos), were chosen in May 2001.

The PPP was highly criticized, by the Mayor of London among others, in terms of incompleteness of the contract and unclear value for money. Some argued a PPP contract would not be the best way to upgrade the tube system and made a case for the LUL undertaking works by itself. Besides, despite PPP advocates arguing the contracts contained strong incentives to improve safety standards, some critics raised concerns about the effect on safety of the decentralized nature of the London tube PPP project.

The legal and political challenges to the PPP agreement led to large costs for the public sector arising from consultancy services and advisory fees, and to delays in the award of contracts. The uncertainty on contract negotiation and award delays even led bidders to threaten suing the government for the high bidding costs if the PPP contracts were dramatically modified.

In fact, according to the House of Commons’ report (2005), the costs incurred by the winning bidders were eventually included in the service charge at the taxpayers’ expense. As bidding costs reimbursement, Tube Lines received £134 million and Metronet £116 million. LUL even reimbursed the unsuccessful bidders for their bidding costs by £25 million. In addition, LUL paid £109 million in advisory fees. Still, the poor outcome for all parties of the PPP suggests serious flaws at the contract drafting stage.

The PPP contract for Tube Lines was completed in December 2002 and for Metronet in April 2003. Therefore, for at least 19 months the winning bidders were able to negotiate the contract terms. The Tube Lines consortium was awarded the concession for the Jubilee, Northern, and Piccadilly lines. Instead, the Metronet consortium was awarded one concession for the Bakerloo, Central, and Victoria lines, and another one for the District, Circle, Hammersmith & City, and East London lines. Thus, Metronet signed over two out of the three PPP contracts.

The type of PPP contract

The London tube PPP contract was more complex than a typical operation PFI deal. Further, in the London tube PPP there was not a construction phase followed by an operation phase since the contract involved a continuum of work to improve the assets over the contract life. That is, the PPP agreement was similar to a DBFO model with respect to the whole-life cost approach, but building and operation activities were not bundled: the concessionaires would upgrade the existing infrastructure while LUL continued to provide the transportation service.

Risk allocation

LUL kept the responsibility for delivering the transportation service and charging user fees, so that demand risk was borne by LUL.

The risk of cost overruns arising during the contract was shared between LUL and the Infracos. The amount of cost overruns to be borne by the Infracos was capped provided that the Infracos
performed in an economic and efficient manner (and it is not easy to prove that a firm does not perform efficiently). The maximum amount of cost overruns to be borne by Metronet was £50 million for the first seven-and-a-half years of the contract; for Tube Line, the amount was £200 million.

The contracts imposed weak constraints on the Infracos’ subcontracting arrangements, and this led to incentive distortions in the Metronet case. In Metronet, the shareholders were also the suppliers of the consortium, so they were less concerned about cutting costs down as an increase in Metronet’s costs translated into a higher revenue for the supplier companies, leaving shareholders financially unaffected. In fact, large cost overruns were eventually incurred, as it is discussed below.

It was expected that the private financing involved in the PPP contracts would give incentives for the Infracos to efficiently manage the project’s risks. However, substantial risk was also borne by the public sector through a debt guarantee granted to the lenders entitling them to receive 95% of their invested funds in case of early contract termination. Moreover, despite the fact that the private financing was publicly guaranteed, the cost of capital turned out to be £450 million above the cost of capital that would have been observed had the project be financed by the government.

Cost overruns

One of the Infracos, Metronet, failed in controlling the costs resulting from the pledged works. It was estimated that the Metronet costs in the first seven-and-a-half-year period of the contract would be four times what had been expected initially when signing the contract. Such cost overruns led to an Arbiter intervention, and the Arbiter warned Metronet would have to pay £750 million in cost overruns unless significant improvements were made by the consortium. If Metronet were to pay for the cost overruns, the profits earned in the first years of the contract would vanish and heavy losses would arise.

Under this circumstance, Metronet sought to be compensated for the cost overruns arguing it had not signed a fixed-price contract and therefore it should not fully bear the unexpected costs of the project. In addition, the consortium blamed LUL exercising its ‘specified rights’ to request additional works for the cost overruns incurred. Metronet eventually proposed either to share costs with LUL or to have the scale of pledged works reduced.

In reaction, the consortium was highly criticized for not undertaking the pledged works in an economic and efficient manner, i.e. for not making cost-reducing efforts, thus having no reasonable argument to support its compensation claims. In this regard, a strong criticism arose out of the fact that Metronet implemented a supply chain arrangement whereby most of the pledged works were carried out by supplier companies linked to the consortium’s shareholders. According to the critics, this arrangement may have played a role in explaining the Metronet cost overruns since the consortium’s shareholders were making profits through the supplier companies and so they had weak incentives to control the Metronet costs. Hence, the supply chain arrangement lacked transparency and was vulnerable to outright corporate abuse. In support of this view, the critics pointed out that no cost overruns were incurred by the Tube Lines consortium, which had implemented an outsourcing arrangement based on competitive tendering and used to stand up to the additional work requirements of LUL.

In the Metronet case, the debate over who should have borne the cost overruns suggests the original PPP contract was poorly designed. In particular, the Metronet’s setup by which the interests of shareholders and suppliers overlapped was an unsatisfactory arrangement from the point of view of providing incentives to cost-reducing efforts.

_Negotiations between LUL, Metronet, and its lenders_
LUL, Metronet, and its lenders have been recently involved in complex negotiations to determine the responsibility over the cost overruns incurred and the implications on the financing of the project. Cost overruns estimations made by Metronet exceed £1 billion, a figure much higher than the Arbiter’s £750 million. On the basis of its own estimations, Metronet has demanded LUL for £992 million to cover the past and projected overspending during the first seven-and-a-half-year period of the contract. The Arbiter, however, has rejected such a demand and awarded Metronet only £121 million to cover overspending over the next year.

Metronet is also negotiating with its lenders who have blocked any injection of new financing. Lenders fear the consortium may walk away from the contract if it is obliged to bear the cost overruns incurred. This is because, since the shareholders are liable only for their initial investment (£350 million), they may prefer to let Metronet go bankrupt rather than to bear heavy losses.

Nevertheless, Metronet going bankrupt would be a big problem for the public sector as it guaranteed 95% of the £2 billion debt due to lenders. According to the financial agreements, Transport for London is liable for the debt guarantees if it cannot sell the contract to another company within one year after exercising step-in rights. If it can sell the contract, but the amount collected is less than the guarantees, it has to pay for the difference.

*Sources: see London Underground (Part VII).*
Transparency of risk allocation

[Brazil: Lei 11.079, Art. 5]
Art. 5. The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:

III – the sharing of risks among the parties, including those that refer to acts of God, force majeure, acts of State and unforeseeable events;

Transparency of the liabilities, undertakings, commitments, guarantees, and contingent liability

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
32. Las dependencias y entidades deberán enviar a la Secretaría, por conducto de la Dirección General de Programación y Presupuesto sectorial que corresponda, a más tardar el último día hábil de septiembre, la actualización de los montos correspondientes a obligaciones de pago para ejercicios fiscales subsecuentes que se hayan asumido en los contratos de servicios de largo plazo. La Secretaría incluirá dicha información en el proyecto de Presupuesto de Egresos de la Federación del siguiente ejercicio fiscal.

[mexico: acuerdo secretaria de hacienda diario oficial 9 abril 2004]
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Efficient Risk allocation

[Brazil: Lei 11.079, Art. 4]
The following guidelines shall be observed when contracting public-private partnerships:
VI – objective risk sharing among the parties;
5.2.2.2 Refinancing

Refinancing of PPP projects after a few years of operation has enabled the private-sector party, and in some cases also the public-sector party, to greatly benefit from the maturing PPP market. A refinancing operation involves a change in the financing structure of the SPV under the contract agreed between the public and private parties. Refinancing gains can result from interest rate reductions, extensions of debt maturity, increases in the amount of debt facilities, etc. They may be due to exogenous factors, like a change in macroeconomic conditions (this was the case, for example, in the US mortgage refinancing wave that brought to the current sub-prime market crisis) or the natural revelation of asymmetric information between borrowers and lenders while the project gradually reaches the mature stage; but they may also be due to a particularly good performance of the borrower.

In the UK, early re-financed PFI contracts mainly benefited the private sector, e.g. the Jarvis case, but the situation has changed overtime. The Public Accounts Committee argues that the gains made from refinancing should not be ‘wholly attributable’ to the private sector for the risk that it is bearing. On the recommendation from the UK authorities, new PFI contracts provide for a 50:50 split in refinancing gains. Private partners ‘would not have to share 50% of the gains where, at the time of refinancing, they were projecting a shortfall in returns over the life of the contract compared to their expectations at contract letting’. However, ‘there would be a requirement for them to give up more than 50% of the gains if they were earning more than expected’. These clauses are rather generic, though, and may create more problems than they solve. As we also discuss later, costs can sometimes be inflated, so that profits can be manipulated and gain-sharing avoided.

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A decision to include provisions in the contract implementing a refinancing gain-sharing scheme should address a trade-off. On the one hand, it may be the case that the private-sector party improves efficiency and performance during the contract life, lowering the risks of the project and hence the cost of capital. Thus, refinancing gains can be seen as a reward for such improvements that should be enjoyed mainly by the private-sector party. In this regard, a refinancing gain-sharing scheme could weaken the incentives for the private-sector party to seek for improvements.

On the other hand, refinancing gains may have an impact on the compensations payable by the public-sector party on early contract termination. In the event of voluntary termination by the public-sector party, the private-sector party is generally compensated for the future profits it would have received had the contract not be terminated. Since refinancing increases both current and future profits, the compensations payable by the public-sector party will be higher if a refinancing occurs. Hence, there is an argument favouring the inclusion of a refinancing gain-sharing scheme: termination liabilities for the public-sector party are lower when refinancing gains are shared during the contract life.

Furthermore, to the extent that refinancing gains are due to exogenous factors, or to lenders perceiving less political and legislative risk as the PPP market matures, some form of refinancing gain-sharing scheme may be appropriate, as the merit cannot be solely attribute to the private sector. However, refinancing clauses tend to be rather generic and may create more problems than they solve.

As we have discussed in the companion paper, it is likely that the private-sector party obtains windfall benefits in refinancing its debt liabilities during the contract life. Since refinancing involves a change in the financing structure of the project, the public-sector party should be informed about any refinancing operation undertaken by the private-sector party. Further, the contract should contain provisions giving the public-sector party the right to approve any refinancing proposal and to share the benefits of refinancing.

The public sector should consider positively any refinancing proposal submitted by the private partner as refinancing is likely to be beneficial for both parties. However, in evaluating a refinancing proposal, the public-sector party should take into account possible negative effects of a refinancing operation, such as an increase in the risks faced by the public sector or in the compensation upon voluntary termination, a reduction in the private sector incentives to perform in later years and a weaker financial stability of the private partner.

The method for calculating and sharing refinancing gains should be specified on case-by-case basis. The benefits for the public sector can of course be materialized in different ways. First, the public sector may choose to receive an amount of money at the time refinancing occurs. Second, the public sector may wish to reduce the tariff or unitary payment received by the private sector over the period following refinancing. Third, the
public-sector party may prefer to increase the scope of the service as its share of refinancing gains.

There are cases when a mixture of both a cash payment and a service charge reduction may be appropriate. This is when, for example, refinancing involves gains to be realized at the time refinancing occurs along with gains to be made over a long period of time in the future.

As for the share of refinancing gains that should accrue to the public sector, it should be small when refinancing gains are caused by the private partner’s good performance, not to curb incentives to perform; and it should be larger when the refinancing gains origin from exogenous changes like improvements in the macroeconomic condition or the natural reduction of information asymmetries taking place while the project implementation goes on in time.

**Case Study: The Fazakerley Prison (UK)**

The refinancing of Fazakerley prison in the UK was caused by the successful construction of the prison and the increasing confidence of financial markets towards PFI projects (this can be seen in the decrease in the loan margin from 1.5% to 0.7% showing banks’ increased confidence in the PFI market).

The contract did not specify the Prison Service was to gain from any refinancing, but the consent of the Service was needed. As compensation for taking an increased risk regarding termination liability, the Prison Service received £1 million from FPSL (the consortium), approximately one fifth of the total refinancing gains. It was suggested that the Service could have received more from the refinancing but “the Service did not wish to deter FPSL or other consortia from bidding in future PFI prison competitions by removing opportunities for them to benefit from this type of project” (NAO, 2000, paragraph 1.10). However, there is great uncertainty in the refinancing procedure as the Prison Services termination liability could increase as a consequence of extending the loan repayment period.

*Source: NAO, (2000)*

**Case Study: London Underground (UK) (Part V)**

Broadly reflecting PFI precedents in UK, the PPP contracts contained specific provisions for sharing the benefits from refinancing operations. In May 2004, 18 months after Tube Lines was awarded the contract, the company conducted an early refinancing operation that turned out to be very profitable as gains amounted £85 millions over time.

The contract provisions entitled the public-sector party to receive 70% of the refinancing gains (i.e. £59 million), leaving the remaining 30% for Tube Lines (i.e. £25 million). The refinancing gain-sharing scheme had a proportion 70:30 that differed from the standard 50:50 recommended by HM Treasury for UK PFI contracts.

*Sources: see London Underground (Part VII).*
5.2.3 Building payment mechanisms to foster cooperation and service delivery

A key element in every PPP contract is the payment mechanism. The structure of the payment mechanism is the principal means for the public-sector party to allocate risks and give incentives to the private-sector party. In order to provide appropriate incentives and encourage good performance, payments are generally contingent on the project’s results, not on the inputs and processes needed to deliver the service. The project’s results are to be defined as output specifications in the contract.

In specifying a payment mechanism, it is desirable to meet some basic criteria. There should be simple and transparent rules linking payments to the measurable project deliverables determined in the output specification. These rules should be carefully design to provide strong and appropriate incentives for the private-sector party to perform. As discussed below, the risk allocation resulting from them is a key element in this regard. The rules should specify clearly and in detail the payments to make when performance criteria are met, and charges to deduct when they are not. Since the payment mechanism heavily affects the financial structure of the project, the rules should ensure the private-sector party is able to finance the project given the risks allocated to it, and that the public-sector party can afford the pledged payments. Otherwise, financing the project may become difficult.

To the extent that there is consistency between output specification, payment mechanism, and risk allocation, the contract design increases the likelihood that the project delivers value for money. Decisions to be taken in formulating a payment mechanism will be informed by the output specification and the project’s risk assessment; similarly, the payment mechanism may also lead to further refinement of the output specification and risk assessment. As an introductory example of the interactions between these three elements, consider a standard case in the transport sector. The output specification may target lighting, signage, and road maintenance that are closely related to the quality of the service. A payment mechanism could be based on tolls paid by users and set by the private-sector party. Thus, the demand risk is fully transferred to the private partner who has strong incentives to improve service quality and availability in order to raise revenues. An alternative mechanism could be based on tolls paid by users but set by the public-sector party, who makes unitary payments to the private-sector party. Thus, the demand risk is shared by both parties. Incentives for the private-sector party to perform are given if the unitary payments are based on usage, availability, and service performance.

Case Study: The London Underground (UK) (Part II)
The PPP contracts specified the improvements to be made by the Infracos on the tube assets. The output specifications required them to deliver substantial improvements in the physical conditions of trains, stations, tunnels, embankments, escalators, etc. It had been estimated that the private investment involved in the pledged works would have been three times the capital expenditure observed in the past.
Building, refurbishment, and maintenance works had to be undertaken meeting a precise time schedule agreed with the Infracos. The works schedule had strict deadlines; for instance, trains should be refurbished or replaced over 15 years, stations should be refurbished over the first seven-and-a-half years of the contract, etc.

Consistently with the PPP principle of letting the private partners choose how to accomplish the output specifications on the basis of their know-how and expertise, the contracts did not specify the way in which the pledged works should be undertaken.

To give flexibility to LUL, the contracts set out ‘specified rights’ allowing LUL to require the Infracos to carry out additional works in certain areas that could not be fully contracted upon in the original contract. These rights were exercised by LUL in many occasions; for instance, Tube Lines was required to deliver an extra trailer car for every train in the Jubilee line and to extend the Piccadilly line to Heathrow Airport Terminal 5; Metronet was required to increase the number of trailer cars in the Circle line and to install air conditioning equipments on the sub-surface lines.

Sources: see London Underground (Part VII).

5.2.3.1 The provision of incentives through the payment mechanisms

The economic literature on explicit procurement contracting and regulation emphasizes the role of the payment mechanism in the allocation of risks and in the provision of incentives to the private-sector party for cost reduction and good performance. The literature identifies three main categories of payment methods: cost-plus, fixed-price, and incentive payments (Laffont and Tirole, 1993).

Cost-plus payment

Under this payment mechanism, the public-sector party agrees to reimburse documented construction and operation costs associated with the infrastructure project plus a fixed and possibly a variable fee (thus giving rise to the name cost-plus). Formally, the payment $P$ would be a linear function of the cost level $P = F + (1+m)C$, where $C$ is cost, $F \geq 0$ is a fixed fee and $m \geq 0$ is the mark up the private-sector party can charge on each unit of documented cost. Since the private-sector party is fully insured against any cost increase that can happen in the construction and operation phases, a cost-plus payment gives no incentives to the private-sector party to exert any extra effort to reduce cost, as lower cost implies lower profits for the private-sector party (Albano et al., 2006a).

A cost-plus payment may therefore not be an appropriate mechanism when the project’s total costs heavily depend on the private partner’s actions, precisely because incentives to save on costs are weak. The mechanism has also a negative effect on the tendering process to select a private partner when there is a high degree of uncertainty about the bidders’ efficiency. As long as the cost-plus payment reimburses all costs, both efficient and inefficient suppliers have an incentive to submit the same offer. But, because of the uncertainty, the public-sector party cannot distinguish between them. Hence, it is likely that the tendering process ends up selecting a private partner who is not the most efficient provider, which may increase total cost.

On the other hand, the cost-plus payment has an advantage in terms of flexibility to cope with uncertainty regarding circumstances that may arise during the project. Unforeseen changes in the environment and modifications in the output specification may call both parties for a contract
revision. In the renegotiation, the private-sector party knows that any verifiable cost increase resulting from the new contract terms will be reimbursed by the public-sector party. Thus, the cost-plus mechanism narrows the scope for disputes and renegotiation costs (Bajari and Tadelis, 2001, 2006). Also, since the private partner does not bear the risk of cost overruns, to the extent that the firm is risk averse, payments to the private-sector party will not need to account for a risk premium and as such will be lower than when risk is transferred.

Finally, since the private-sector party is fully insured against any cost increase that can happen in the construction and operation phases, a cost-plus payment gives good incentives to the private-sector party to comply with the public sector needs and quality requirements. However, these incentives may not suffice so it is always preferable for the cost-plus payment to be adjusted for quality. To ensure incentives to deliver the quality standards contracted upon, a scheme of deductions must be in place. The payment scheme will comprise a component \(-d(Q_s - Q)\) where \((Q_s - Q)\) is the difference between the agreed quality standard and the provided quality, and \(d\) is a parameter that determines the size of deductions, that should increase in the importance and costlyness of the quality dimension(s).

In the context of regulation of privatized utilities, the pricing rule in a rate of return regime resembles a cost-plus payment in procurement contracting. In this case, the tariff level set by the regulator is determined ensuring that the expected revenues at that price cover the expected operation costs plus a return on the capital invested by the private partner. Since the price received by the private-sector party covers its costs, the incentive structure of cost-plus also applies.

**Fixed-price payment**

In this case, the public-sector party agrees to pay the private-sector party a fixed amount for the service provision that must achieve certain quality standards. It is then critical that a scheme of deductions is in place to guarantee that the quality standard is respected, so that payment scheme will be \(P = F - d(Q_s - Q)\), with the previously clarified notation. Since payment do not change with cost, the private partner bears all the costs associated with the project and fully appropriates the benefits of cost-savings activities. Hence, a fixed-price payment gives the private-sector party strong incentives to undertake cost-reducing efforts.

Fixed-price payments perform well when potential private partners are large companies with a diversified portfolio of activities (hence able to bear and manage substantial risk), and the quality dimensions important for the public sector are easy to monitor, so that deductions for quality below the standard are effective in guaranteeing that the quality standard will be respected. Fixed-price contracts with well specified output have the additional advantage to make competitive tendering processes extremely effective in terms of both selecting the most efficient private partner and reducing the cost of service for the public sector. In other words, well designed fixed-price contracts and competitive tendering go along very well. On the contrary, competitive tendering may even be harmful for the public sector when cost-plus contracts are adopted (Bajari and Tadelis, 2006).

A fixed-price payment may not be an appropriate mechanism when important quality dimensions are hard to monitor and sustain through payment deductions, so that cost-saving actions taken by the private-sector party are likely to cut down substantially the quality of service. Similarly, the fixed-price payment may discourage quality-enhancing efforts that raise the private-sector party’s costs if these efforts or quality aspects are hard to observe and contract upon. On the other hand, if the quality dimension is easy to monitor also for third parties, an additional payment rewarding performance above standards could be added to the fixed-price contract, eliminating the drawback. Another advantage of fixed-price payment is that minimizes transaction costs as no cost information is required for its implementation.

In the context of regulation, the pricing rule in a price cap regime resembles a fixed-price
payment in procurement contracting. In this case, the tariff level is chosen by the private partner subject to a maximum cap imposed by the regulator. The private-sector party is allowed to appropriate all the benefits resulting from cost-saving actions. Thus, price cap regulation attempts to overcome the inefficiency in rate of return regulation that arises from the weak incentive to undertake cost-reducing efforts when the price review is frequent and backward-looking. A pure version of price cap regulation has no price review, and thus the regulatory lag is of an infinite length. On the contrary, a pure rate of return regulation would allow the regulator to examine cost and profitability of the private-sector party on a continuous basis (Armstrong et al., 1998).

### Incentive payment

An incentive payment lies between the extreme cases of cost-plus and fixed-price. In general, for a given quality standard the incentive payment is the sum of two components: a fixed-amount plus a variable payment that partially compensates for the costs incurred. For example, the payment $P$ can be a linear function of the cost level $P = F + bC$. When the public-sector party bears all costs and the private-sector party is fully reimbursed, $b=1$ and the incentive payment becomes a cost-plus. In contrast, the when the public-sector party bears no cost and the private-sector party is not reimbursed, $b=0$ and the incentive payment becomes a fixed-price.

By partially transferring the cost overruns risk to the private-sector party, the incentive payment encourages it to undertake cost-reducing efforts. Since these efforts reduce both cost and payment, but the payment decreases less than the cost, the private partner’s profits increase. Therefore, the parameter $b$ representing the fraction of costs born by the public-sector party turns out to be a key element to induce the private partner to save on costs. In particular, the lower the value of $b$, the larger the private-sector party’s responsibility for cost overruns; thus, the more the private-sector party benefits from cost-reducing efforts, the higher the power of the incentive scheme.

The public sector’s choice of the cost-sharing parameter $b$ depends mainly on three factors. The first factor is the ability of the private partner to bear the cost overruns risk resulting from his degree of risk aversion. To the extent that the private-sector party is risk averse, it will require higher overall compensation for bearing the risk of suffering unexpected cost increases. The second factor relates to the predictability of shocks affecting the project’s costs, which determines overall risk. When these shocks are largely unpredictable, the private-sector party will be less willing to accept an incentive payment with a low cost-sharing parameter $b$ that transfers it the bulk of the cost overruns risk. It will then require higher payments for bearing risk. The final factor is the degree in which the private partner’s cost-reducing activities impact on the actual cost structure. The larger the expected effect of cost-reducing activities on the project’s costs, the lower will be the payment required by the private-sector party.

Implementing an incentive payment mechanism typically involves transaction costs. For instance, it is costly to collect the information needed to compute the payment, to provide accounting measures of the costs incurred, and to measure the quality of service. Thus, it may happen that transaction costs are so large that outweigh the expected benefits of setting an incentive payment mechanism. Under these circumstances, the public sector itself would prefer to save on transaction costs and adopt an alternative payment scheme. For instance, it may consider a payment mechanism easier to manage and less costly in terms of information, such as a fixed-price payment.

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43 Price cap regulation has been implemented world-wide because of its theoretical advantages; however, LAC countries did not account for its full range of implications (Guasch, 2004).
44 In practice, periodic price reviews are allowed both in price cap and rate of return regulations, but typically the regulatory lag under price cap is larger than in rate of return regulation (see Price variations below).
Of course, also in the case of incentive contracts the private-sector party has incentives to reduce the provision of costly quality, so that a quality standard should be established and ‘defended’ by an appropriate set of deductions. Taking into account deductions for quality supplied below the contracted standard the payment scheme would be something like $P = F + bC - d(Qs - Q)$, where all symbols have the meaning explained earlier.

An incentive payment mechanism can also target quality-enhancing activities rather than cost-reducing efforts for a given quality standard. Analogously to cost incentive payments, quality incentive schemes may be used to encourage high quality in service provision and good performance on the part of the private partner. In general, a quality-oriented payment specifies a fixed amount for a low minimum performance level guaranteed by harsh sanctions, like very high (total) deductions or even private-sector party replacement in case of violation, and in addition different bonuses corresponding to higher quality levels. Formally, the contract would look like this: $P = 0$ if $Q < Q_m$; $P = F + bC + \beta(Q - Q_m)$ if $Q > Q_m$, where $Q_m$ is the minimum performance level and $\beta$ is the bonus increasing with the quality actually provided.

One benefit of using positive rewards for higher quality, in contrast to deductions (or liquidated damages, were present) for lower quality, is that the latter appear highly ‘punitive’ for the private-sector party – who sees its payment reduced, although as agreed upon in the contract - while the former does not.\(^{45}\) Deductions for low quality are often not exercised by public sector buyers. Some official argue this is also because of the fear to ‘spoil the relationship’ with the supplier. Recasting the incentives in positive terms may not have this drawback: the bonus may be seen as ‘something more’ the private-sector party gets only if particularly high quality is effectively delivered, while if it is not nothing is ‘taken away’ from the supplier.

### 5.2.3.2 Payment mechanism in PPPs

PPP arrangements aim at maximizing incentives for the private-sector party to take into account whole-life costing and to undertake innovative approaches leading to cost-reduction and quality improvement. For this purpose, the payment scheme under PPPs must be output oriented, in the spirit of fixed price arrangements: the payment must depend on output (and thus on the service being provided) rather than on input (the cost of the service) and payments should only occur once the service is provided (and not before the infrastructure is built).

Also, risk allocation plays a critical role as it is via an appropriate risk transfer that incentives are provided. In general, risk allocation must follow two main principles: provision of incentives and risk insurance. In particular:

(i) risk should be transferred to the party whose actions can have an impact on risk (and hence on the likelihood that adverse events occur).

(ii) risk should be transferred to the party that is most able to bear it (i.e. that is relatively less risk averse or better able to insure the risk)

\(^{45}\) Kahneman and Tversky (1973) first showed how strong is the asymmetry with which the same pay for performance is typically evaluated when it is presented as a loss and as a gain from some reference points; see also Camerer (2003) for many examples of this asymmetry.
Point (i) ensures that incentives are provided through appropriate risk transfer; point (ii) ensures that risk averse parties are adequately insured against risk. Note that, whenever a risk averse private-sector party is asked to bear risk for incentive purposes, it will demand a higher compensation as a risk premium. Since in many instances, the public-sector party is more risk neutral than the private-sector party, this suggests that risk should only be transferred if risk transfer has a positive impact on the incentives of the private-sector party. Inappropriately transferred risk will result in no effect on incentives and in a higher risk premium.

The above two principles must lead the allocation of the main risks that affect PPPs, which are cost overruns, demand risk, legislative/regulatory risk, and financial risk as we discussed in the previous section. Payment mechanisms are means to allocate these risks between the public and private parties. To ensure the private-sector party does not bear the risks it cannot control, indexation and/or adjustment rules may be included in the payment agreement (see Price variations below). For instance, the payment structure may allow an automatic adjustment of tariffs for exchange rate variations.

In the practice of PPP there is a broad array of payment mechanisms that are used to ensure:

(i) that the private-sector party receives adequate compensation for its investment and operational cost,
(ii) that incentives are provided for the private-sector party to perform,
(iii) that risk is appropriately transferred (which also has impact on incentives)

In some payment schemes, the public-sector party makes unitary payments to the private-sector party following different criteria, such as service usage, availability, and performance. Some other mechanisms entitle the private-sector party to receive revenues from the service users, e.g. user charges. There are also many schemes where payments to the private-sector party comprise both user charges and public sector contributions. In what follows we shall discuss each of these payment forms in isolation.

### User charges

In a payment mechanism based on user charges, the private-sector party gets revenues directly through charges on private end users of the infrastructure facility. By this payment method, the public-sector party fully transfers the demand risk to the private-sector party. To the extent that users pay the corresponding fees, there is no cross-subsidy from taxpayers to users that might compromise public finances. Bearing the demand risk, the private-sector party has direct incentives to improve performance in order to encourage service usage and thus increase revenues. Moreover, it is possible to manage demand by setting a pricing rule that charges users according to usage, e.g. in the transport sector, tolls can vary by vehicle type and time of day.

If the private-sector party is able to control demand risk, it is efficient to fully transfer this risk to the private-sector party by implementing a user charge-based payment mechanism. With risk transfer, the uncertainty surrounding revenue streams and forecasts on service demand influences the cost of capital facing the project, with more uncertainty leading to a higher cost of capital. When user charges are the only source of revenue for the private-sector party, higher cost of capital calls for a higher user charge level to reimburse investments. Also, contract length...
may have to be increased. As explained above, risk transfer can help incentives but it comes at a cost. Therefore, demand risk plays a crucial role in determining the bankability of the project by affecting the project's cost of capital.

The link between demand risk and tariff level affects the public sector's choice regarding the payment mechanism to implement. It may happen that an excessive demand risk wipes out the project's benefits because the resulting cost-covering user charges are so large that users prefer to seek for alternative services, thus making the project unbankable. Under these circumstances, the public-sector party could modify the user charge-based payment mechanism in such a way that demand risk is not fully but partially transferred to the private-sector party. A possible modification is a payment scheme where the public sector sets tariffs and pays a revenue subvention to complement the fees collected by the private-sector party from the service users. By this mechanism, the public sector can set the service tariff at a level that maximizes social benefits of the project. In addition, the private partner and its providers of capital reduce their exposure to demand and collection risks. Hence, the cost of capital should be lower, and also the amount of support needed from the public sector.

Criteria to set tariffs
When the private partner’s revenues in a PPP project are based on user chargers, tariff setting criteria become a relevant issue. Tariff levels should follow three main criteria:

(i) allocative efficiency
(ii) bankability of the project
(iii) distribution considerations
(iv) other factors

(i) Allocative efficiency calls for a pricing rule which sets tariffs according to marginal costs. From the public sector perspective, the tariff setting should take into account the social costs and benefits associated with the project. Service provision involves not only the private production costs facing the private-sector party but also any cost imposed on other activities, e.g. externalities like pollution. Hence, a cost-covering tariff based on both private and social costs and benefits may be higher or lower than the tariff level that maximizes the net sum of private benefit and cost.

(ii) When user charges are the only source of revenue for the private-sector party, the level of user charges should be also consistent with recouping initial investments and sunk costs. The tariff level should be such that revenues cover operation costs and investments in the service provision, allowing a commercial rate of return. The effect on revenues of changing user charges depends on the price-elasticity of demand for the service. In turn, the volume of demand affects the operation costs of providing the service.

(iii) To the extent that the public sector is concerned with the project's social benefits, e.g. improvement of health from installing proper sewerage systems, pricing service below marginal costs might be the preferred pricing structure. But to ensure bankability and incentives to invest in service expansion and quality improvements for the private partner, the public sector must subsidize the project where it is at a loss. Distributional issues arise also within actual users as

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46 Projects with increasing returns to scale display average cost below marginal cost, so pricing according to the latter leads to economic losses.
47 For example, in the water sector, industrial and residential demands are inelastic, thus revenues increase along with tariffs (Howe, 2003).
48 International experience in the developing world clearly demonstrates that pro-poor arguments fail to justify subsidies to infrastructure services because the poorest typically have no access to them (Kerf, 1998). However, empirical evidence suggests it is difficult to reconcile the profit motive with delivering services to the poor without public subsidies or specific contractual agreements. For instance, in the water
long as they differ in terms of income and service usage. Seeking equity of treatment regarding user charges, differentiated tariffs can be set according to types of services, categories of consumers, etc. It is a common practice to establish systems of cross-subsidies where some groups pay tariffs below costs and others pay tariffs above costs to compensate. But from the perspective of efficiency, these systems have negative consequences to the extent that consumption patterns are distorted for users enjoying subsidies, and for users contributing to finance them (Kerf, 1998).

(iv) Tariff setting should cope also with other factors such as the collection risk, i.e. the risk that users of the service try to avoid paying the user charge. Since the users’ incentive not to pay increases along with the tariff level, a too high user charge may lead to the private-sector party taking excessive collection risk.

A number of subvention schemes may be offered to the private-sector party when the expected revenues are not sufficient to ensure project bankability. First, capital expenditures contributions (capex) may be offered by the public-sector party taking the form of: (i) capital grants; (ii) loans; (iii) equity. In order to avoid public sector exposure to construction risk, the construction phase should be funded by the private-sector party, and capex contributions should be injected only after project completion. Capital grants minimize conflicts of interest, but the public-sector party should take into account that a capital grant is a sunk cost which is not refunded in the event of contract termination. Moreover, as long as senior debt will be repaid first in case of private-sector party default, the use of capex contributions may not be appropriate. Second, revenue support to improve the private partner overall cash flow may be structured as depending on the number of users, thus being equivalent to user charges in terms of incentives and risk transfer. Alternatively, it could be set in such a way that payments decrease over time, thus giving incentives for the private-sector party to encourage usage; or that payments decrease as usage level increases, thus avoiding windfall earnings under unexpected increase in demand. Revenue support can also take the form of revenue guarantees payable only in years where revenues from user charges fall short of a specified level. Third, debt guarantees could be provided by the public-sector party, thus having no effects on the fiscal budget as long as it is not called upon.

User charges are paid directly by users, and this ensures that users are alerted and have incentives to monitor whether the project indeed delivered value for money, automatically implying a higher level of accountability. Conversely, any direct payment from the public-sector party to a private partner, be it in the form of usage and availability of payments or of other type of subsidies, is harder to monitor for the public, and therefore at higher risk of low accountability, particularly if part of the contract is protected by confidentiality requirements.

Therefore, from a governance perspective, user charges should be maximized, and direct transfers from the public sector avoided as far as possible. With this aim, if user

sector, serving poor households is not profitable since these cannot afford to pay for the connection or to consume enough water to cover the costs of service provision. Private partners have developed different approaches to this problem, ranging from defining contracts in a way to ring-fence profitable users to introducing cross-subsidization of tariffs. Interestingly, arguments supporting water privatization included a criticism of the public sector for subsidizing excessively and failing to set cost-recovery tariff levels, but nowadays subsidies through public finance are seen as a key to sustain the presence of private partners (Lobina and Hall, 2003).
charges appear insufficient to make the project economically viable in the current form, it is better to increase the duration of the contract, so that the private-sector party has a longer horizon to recover investment costs, rather than to add direct subsidies to user charges.

Another aspect of the payment mechanism that may be problematic from a governance perspective is its complexity. Very complex payment mechanisms are not only difficult to apply/manage, but also difficult to monitor by a third party, such as the public, the press, or an audit office. First, it is difficult to verify whether the contract is being implemented correctly; second, it is difficult to understand – in case it is found that it was not implemented correctly – whether this happened because of mistakes or deliberate mismanagement and favoritism. For this reason, too complex payment mechanisms should be avoided.

The need to limit contract complexity for the sake of governance accountability suggests to avoid mixed formula, with user charges supplemented by direct payment schemes. If user charges appear insufficient, it might better to increase the duration of the contract than to add direct transfers from the public sector to user charges.
The contract design should exhibit a consistent link between output specifications, allocation of risks and incentives, and the payment mechanism. The payment mechanism should be based on a **pay-for-performance principle** and be consistent with both the incentives the public-sector party wants to give to the private partner and the allocation of risk it wants to obtain (along the lines discussed in Section 1).

The payment mechanism should be based on **verifiable outcomes** of the service standards related to the output specifications (i.e. not based on inputs and cost of materials). In particular, the desirable service standards should be translated into measurable output indicators that can be verified by third parties.

Where quality aspects of the service provision are not readily verifiable, the public-sector party should try to find other means to obtain measures of performance to be used in the payment mechanism. In this regard, regular **customer satisfaction surveys** may help as a way of monitoring performance. For example, in the London Underground ambience and general conditions of the trains and stations were to be measured by customer surveys.

Payment deductions and rewards should depend on customers’ feedback so as to give incentives for good service provision. Where possible, the customer satisfaction surveys should allow to compare the quality of the service under the contract with the quality of comparable services elsewhere.

It is not recommended, however, that the private-sector party carries out customer satisfaction surveys itself as this would facilitate manipulation of information and
corruption. For example, when the service charge is paid by the public-sector party (i.e. final users assess the private partner’s performance but do not pay the bonus), the private partner may try to ‘bribe’ final users to report a high satisfaction level that triggers a bonus payment (or avoids deductions).

Customer satisfaction surveys should not be carried out by the public-sector party either. Independent third parties are preferable. This is because a conflict of interest may arise when customer satisfaction surveys are used to monitor and to make payments conditional on their feedback. For example, when the service is charged to final users (i.e. final users both assess the private partner’s performance and pay the bonus), the evaluator has incentives not to assess a good performance, thereby avoiding to pay the costly bonus. Anticipating this, the private-sector party may provide minimal levels of non-verifiable quality.

However, this problem can be partly overcome by linking customer satisfaction to in-kind rewards (e.g. contract renewals) instead of monetary bonuses, since it is in the interest of the public-sector party to renew the contract to a good and efficient private-sector partner.

The payment should be conditional on service provision. When the project involves a construction phase financed by the private sector, no payment should be made until the service is available. The contract should then specify a service commencement day, after which the first payment should be made, possibly with deductions for delays or with bonuses for early commencement.

The public-sector party can further protect itself from delays in service commencement by imposing liquidated damages to the private-sector party provided that it is feasible to demonstrate the existence of economic damages due to delays (otherwise, liquidated damages might not be confirmed in court).

In concession contracts involving the construction of the facility, consumers do not pay until the service commences. An exception of this is when the private-sector party is building a facility extension and operating the already operating facility where users are being charged. In this case, the private-sector party may use the revenues from the operation to finance the construction of the new extension.

The most appropriate type of payment mechanism for a PPP project is determined to a large extent by the allocation of demand risk between the public and private partners (whose principles were discussed in Section 1). Each of the most used types of payment mechanism is associated with a different level of demand risk transfer. In particular,

(i) demand risk is fully transferred to the private sector when payment to the private-sector party is mainly based on user charges;
(ii) demand risk is shared between the private-sector party and the public-sector party when the payment mechanism is structured on usage payments; and
(iii) demand risk is retained by the public-sector party when the payment mechanism is based on unitary payments, such as availability.

89
Case Study: TransMilenio Bus Rapid Transit System in Bogota (Colombia) (Part II)

The TM project specified in detail the technical requirements for the buses: operators of main routes should have afforded modern buses, and operators of feeder routes could use standard buses. To reduce journey times, both regular and express bus services were to be provided with predetermined schedules and making information available for users through an electronic system. A pre-paid ticket with a unified fare scheme was to be implemented to simplify the service charging and revenue collection.

It was apparent that the TM project would dramatically change the workings of the bus transport system and damage the interests of the existing bus service providers. In this context, a number of measures were taken to attenuate resistance to and build support around the project. For instance, the bus companies, who had legal rights over the bus routes, were invited to participate as bus operators in the main routes. The small private bus operators would be allowed to serve in parallel routes, thus competing for passengers with the TM bus services. To cope with the users’ reaction to the introduction of the new system, a 3-week free trial period was offered at that time.

Payment mechanism

The payment system implemented in the TM project implied that the demand risk was jointly borne by the bus operators since all the revenues collected were distributed among them. However, the revenue distribution was based on the weekly route distance that each bus operator served regardless of the number of passengers transported. Since TransMilenio SA could penalize a bus operator failing to comply with its contractual obligations by reducing its assigned weekly route distance (and so increasing that assigned to the other operators), it turned out that the bus operator’s performance affected its share in the revenue distribution (and implicitly the share of demand risk borne individually). In fact, TransMilenio SA was able to reduce up to 10% of the operator’s income, thus imposing a significant monetary loss for quality service failure.

In determining the fare level, both the bankability and affordability of the TM project were taken into account. In the project planning, a fare level around 0.40 cents had been estimated as consistent with the project’s bankability. In fact, one year before the new system was introduced, the fares charged by the existing bus service providers were increased from 0.30 to 0.40 cents. Hence, at the time the new system commenced, there was no price difference between the TM bus services and those provided by the small private bus operators. Since the TM bus services were much faster and of a higher quality, the small private bus operators found it hard to compete for passengers in the parallel routes they were allowed to serve.

After the initial fare was set, the contracts envisaged a mechanism to adjust the service charge periodically. Price variation provisions aimed at protecting the bus operators from unexpected changes in operation costs they could not control. Besides, it was established that the public-sector party must compensate the operating companies if it intervenes to reduce bus fares, thus preventing the public sector from manipulating the project’s (and operator’s) main source of funds with political objectives.

The implementation of a pre-paid ticket system played an important role in the TM project as it allowed for separating the operation of buses and the management of revenues. Moreover, the ticketing and payments systems greatly contributed to improving safety and service quality by eliminating the ‘war of the cents’. In addition, the systems were instrumental to ensure transparency and to avoid conflicts of interests: while an independent company collected the fees (thus avoiding potential disputes among bus operators), another company managed the trust fund (thus increasing controls over the revenue collection).
Outcomes

By all accounts, the inherited bus transport system exhibited low service quality and high levels of congestion and pollution. But soon after the TM project was launched, significant improvements were achieved in terms of the efficiency, safety, and environmental impact of the system.

One year after the TM project was launched, an evaluation reported encouraging results: journey times were reduced 32%, implying an equivalent to a one hour/day saving for the average passenger; average speed in the main routes were much higher than before; pollution levels in Bogotá resulting from the bus transport system dropped; and the number of accident fatalities decreased.

In 2004, another report reviewed the performance of the project and reported further improvements in safety and traffic managements. It was a remarkable achievement that improvements were observed in such a short period of time. Thus, the TM was considered an overall successful PPP experience.

Sources:
Fernholz and Morales Fernholz (2005)
TransMilenio SA web page

If the revenues expected at the desirable tariff level are not sufficient to ensure bankability, the public sector should consider the possibility of making transfers to the private-sector party in the form of subventions (instead of providing direct financial support, an increase in contract duration can also help, see Section 3). In practice, these subventions could take a number of forms, as discussed below.

Capital expenditures contributions (capex) could be provided by the public-sector party taking the form of: (i) capital grants; (ii) loans; (iii) equity. In order to avoid public sector exposure to construction risk and to reduce the conflict of interest resulting from having the public party on both sides of the relationship (in cases (ii) and (iii)), the construction phase should be funded by the private-sector party, and capex contributions should be injected only after project completion. Capital grants minimize conflicts of interest, but the public-sector party should take into account that a capital grant is a sunk cost which is not refunded in the event of contract termination. Moreover, as long as senior debt will be repaid first in case of private-sector party default, the use of capex contributions may not be appropriate.

Revenue support can be offered to the private-sector party to improve overall cash flow. It can be structured in different ways. For example, it can depend on the number of users, thus being equivalent to user charges in terms of incentives and risk transfer. Alternatively, it could be set in such a way that payments decrease over time, thus giving incentives for the private-sector party to encourage usage; or that payments decrease as usage level increases, thus avoiding windfall earnings under unexpected increase in demand. Revenue support can also take the form of revenue guarantees payable only in years where revenues from user charges fall short of a specified level.
Revenue support implemented as a simple payment set at a level sufficient to cover debt service obligations should always be avoided, as it almost eliminates incentives to perform.

**Debt guarantees** could be provided by the public-sector party. This financial support to the private-sector party will not have effects on the fiscal budget as long as it is not called upon.

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**Case Study: Southern Railway in Sydney (Australia)**

The New Southern Railway (NSR) project involved an underground line with 10-km, a two-track railway, and four stations. The Airport Link Company (ALC) was awarded a 30-year concession to design, build, operate, and finance the NSR. Around one quarter of the project budget was privately financed by debt and equity. The ownership of the land in which stations were built remained under the State Rail Authority (SRA), and the ALC had to pay a lease for using it.

In the pre-design stage of the project, the statutory risk (i.e. approval risk) was borne by the SRA as five local governments had to approve the line passing through their territory. The design risk of the tracks, tunnels, and station infrastructure was transferred to the ALC through a lump-sum payment. Construction risk was also transferred to the ALC since it received an inflation-adjusted, lump-sum payment in exchange for delivering the infrastructure on time and with the quality level agreed in the contract. The contract fully allocated operation risk to the concessionaire, making it responsible for the operation and maintenance costs associated with the infrastructure management. While most revenues were collected in local currency, some of the major construction inputs were imported and paid in foreign currency, so the ALC bore exchange rate risk. By government subventions, the ALC shareholders were granted tax concessions to limit tax liability after debt servicing.

The contract set out a payment mechanism based on user fees, thus transferring demand risk to the concessionaire. In addition, the ALC was allowed to charge a station fee on the passenger tickets so as to recover its initial capital costs, and to earn secondary revenues from retail activities at the stations. Some important government guarantees were set in place: the SRA agreed to compensate the ALC if usage fell short of the expected level, and to purchase the four stations if usage was so low that the concessionaire defaulted on its loans. As the SRA expected usage to increase significantly over time due to population growth and urban development, it considered these guarantees to be a relatively low risk.

Eventually, a quite poor risk management led to a remarkable project failure. Usage level turned out to be only a quarter of the expected level, partly due to an excessive user charge (including the station fee) that could hardly compete against the prices offered by alternative transport means such as buses and taxis. These problems caused a default on the ALC debt just six months after the line started to operate. The government attempted to bail out the project by subsidizing fares to increase service demand (e.g. granting concession fares to groups and offering airline-train ticket packages). A large fiscal burden transpired from both subsidizing the final users and compensating the ALC through the SRA.

Despite the remarkable failure, the government chose not to resume control of the project and thus kept it in private hands. Up to the present, the concessionaire has been heavily compensated, the service demand is still far from the initially expected level, and fares are still uncompetitive.

*Source: Loosemore (2007)*
**Subventions** are useful to keep tariffs at desired level and to go ahead with an infrastructure project despite of failures to generate sufficient revenues. However, most types of subventions reduce the extent to which risk is transferred to the private-sector party (with the exception of subventions based on the number of users).

Furthermore, in practice, some subventions do not depend on the private sector’s performance (e.g. a subvention constituted by a set payment), and as such they do not provide incentives to improve performance.

Finally, subventions increase the scope for corruption and facilitate undue payments.

For all these reasons, subventions should be limited as much as possible. When, however, their use is perceived as necessary, then subventions should: (i) not alter the risk allocation in an inefficient way (e.g. by limiting the risk transfer when it is efficient to transfer demand risk), and (ii) be dependent on performance so as to provide incentives.

The performance criteria used to deliver the payments should be chosen in such a way to minimize the risk of undue payments being made (in exchange of bribes). So, for example, they should not be set on the basis of performance indicators that are not readily observable by third parties and for which monitoring is costly and requires specialized knowledge.

The public-sector party may be interested in limiting private-sector profits when revenues coming from user charges prove to be higher than expected and lead to excessive profits. Setting mechanisms to share these unexpected benefits seems reasonable when the public-sector party has provided a kind of subvention as we mention above. These provisions for limiting revenues could take a number of forms:

**Sharing surplus revenue** provisions specify the revenue threshold above which revenues are divided between the public and private sector parties. This provision is appropriate when the public-sector party has provided a minimum income guarantee.

**Capping revenues** from user charges (similar to the band system used in shadow tolls), the public-sector party could limit the private sector revenues, but it may distort the incentives for the private partner to stimulate service usage.

**Concession fees** may be required by the public-sector party according to service usage as a form of sharing revenues with the private-sector party. But if these fees are fixed payments, the private-sector party is likely to require higher user charges or longer contract duration.

**Case Study: Chiloe Bridge (Chile)**

The concession contract combined the application of user charges (bridge tolls) with a minimum income guarantee (MIG) provided by the government. For each year of the concession, the
concessionaire was entitled to receive the difference between the annual revenue and the MIG specified in the contract.

In order to avoid excessive profit-making by the private partner, the contract also included a profit-sharing mechanism: if annual revenues were higher than an upper income band, the private-sector party would pay 50% of the excess amount to the public-sector party.

The project was however cancelled in the construction phase because the costs exceeded the maximum level predetermined in the contract.

Source: Ministerio de Obras Publicas de Chile (Tendering Document)

Usage payments

A payment mechanism based on usage can be seen as a variant of user charges, but where it is the public-sector party that pays the private-sector party instead of service users. In this scheme, the public-sector party sets tariffs to be charged on users according to its objectives. After receiving the associated revenues, the public-sector party makes unitary payments to the private partner depending on the actual usage level.

In most cases, there are bands for usage levels determining the payments, and thus setting limits to the demand risk transferred to the private partner. Usage payments imply less risk for the private-sector party as final users do not pay for the service, so in principle demand levels are not affected by income shock. As it was mentioned above, a lower exposure to demand risk leads to a lower cost of capital for the project. Using bands at low usage levels bounds the risk to the private-sector party that service demand is lower than expected. In practice, lower bands provide a certain minimum usage payment to cover debt service, but not to ensure a positive return on equity. On the other hand, using bands at high usage levels caps the number of users for which the public-sector party should make payments, thus bounding the public-sector party’s financial liability.

A usage payment has advantages in terms of incentive design since the private partner’s actions regarding service availability and quality affect the usage level on which the payment depends. Besides, the scheme is easy to implement because it is quite consistent with the traditional practices of financing infrastructure projects out of public funds. However, the scheme involves financial risks for the public-sector party because payments are uncertain ex ante, and this can cause difficulties in budget planning. Usage payment also involves distributional issues: service users may pay a relatively low fee while taxpayers end up subsidizing them.

Under a usage payment mechanism, it is the public-sector party that pays the private-sector party, not the final users of the service. Apart from cases when they allow to achieve the desired risk allocation, usage payments (e.g. shadow tolls in road projects) may be used when the public-sector party wishes to set user charges (real tolls) but traffic volumes are insufficient, or when real tolls may significantly distort traffic volumes.

For the payment structure to be applicable the contract should establish definitions of service usage that are easily measurable and observable, such as traffic volumes, water flows, etc. When structuring usage payments, the public sector should
bear in mind that the type of structure employed affects the extent to which demand risk is transferred to the private-sector party and the incentives for the private-sector party to perform.

Usage payments can be structured in a system of bands that is designed so as to achieve the desired level of demand risk transferred to the private-sector party. For example, in road projects, the band system could be structured in such a way that the revenues associated with each band cover different components of the project’s costs. Thus, the first band can be set as to cover fixed operation and maintenance costs and the senior debt service; the second band can cover variable operation and maintenance costs and the subordinated debt service; the third band can be used to pay dividends; and so on.

To cap the public sector’s payments and demand risk exposure, as well as to limit the private sector’s potential returns, the band structure should be set so as to ensure no revenues are received by the private partner when traffic volumes exceed a certain band.

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**Case Study: Randstad Wijkertunnel (Netherlands)**

In a tender to build the Randstad Wijkertunnel, the BOT contract partially transferred design and construction risk to the private partner. The payment mechanism relied on a shadow toll setting minimum revenue but letting the maximum revenue uncapped. During the operation phase, the service demand was larger than expected, so the costs for the public sector rose dramatically.

This case illustrates how demand risk allocated to the public-sector party may increase its financial burden when usage payments are uncapped.

*Source: European Commission (2004)*

**Case Study: Beiras Litoral and Alta Shadow Toll Road (Portugal)**

The concession contract required the private sector to widen and upgrade a 167-km road in the border between Portugal and Spain. Since no alternative un-tolled road was available for the heavy traffic using the road in concession, the government chose to implement a shadow toll regime making usage payments to the concessionaire.

Usage payments were based on a four-band system: the first band was intended to cover fixed costs and senior debt service; the second, variable costs and subordinated debt services; the third, dividends. Overall, there was little demand risk in the project because traffic volumes were already quite large; in addition, the usage payment mechanism implied risk-sharing between the contracting parties. Fixed availability payments were to be made mainly during the construction phase, introducing the shadow toll in the operation phase.

With this project, the public sector sought to enhance the availability of road infrastructure minimizing its financial contribution as hard constraints limited the public budget. But a number of factors eventually raised the fiscal burden associated with the project. Soon after the award, an environmental appraisal concluded that changes had to be made in the initial construction plan; since these changes would have led to large compensations to the private sector that the public sector was unwilling to pay, the construction works were delayed for years. In addition, the already high traffic volumes increased even more, thus raising the usage payments due to the private-sector party.

*Source: European Commission (2004)*

**Case Study: A55 Llandegai to Holyhead Trunk Road in Wales (UK)**
In 1998, the 30-year PFI contract to design, build, finance, and operate the A55 Llandegai to Holyhead trunk road (the final link in the improvement of the rout from Chester to Holyhead linking Dublin and Ireland with Wales and England) was awarded by UK Highways A55 consortium.

The size of the project represented a big impact on the people living in the area. Public exhibitions and consultation with residents took place to keep people informed. The design of the new highway was sensitive to the environment, integrating the road into the landscape, thus reducing its visual impact.

Despite the complexity of the project design, the 22-mile dual carriageway final stage from Llandegai to Holyhead was successfully built six months earlier than the scheduled: it took 27 months to be built, including the design stage.

Once the construction phase ended, the consortium revenues were based on usage payments (e.g. shadow tolls), combined with availability payments and safety record of the road. A mechanism to cap the maximum amount of payment was also specified.

Sources:
PPP Forum, June 2006
Private Finance Information Service

Usage payments may also limit the risk transferred to and the incentives for the private-sector party, so it should be appropriate to combine them with other schemes, such as availability and performance payments in the form of deductions and bonuses, aiming at strengthening incentives provided to the private partner.

Availability payments

In a payment mechanism based on availability, the public-sector party rewards the private-sector party for making the service available regardless of the actual service usage. The payment scheme typically involves also deductions if the private partner fails to comply with availability targets. In any case, objective measures defining service availability should be established in the contract, e.g. lanes ready-to-use in roads and capacity to undertake water treatment works. In addition, deductions should depend on whether the private-sector party can or cannot control the events causing unavailability, the private partner's effort to provide alternative services, the spread and recurrence of unavailability episodes, and the rectification period needed. The weightings of deductions are important: if deductions are too low, it may be convenient for the private-sector party to under-perform; if they are too high, risks increase and the contract may require a higher pricing (HM Treasury, 2007).

In practice, availability payments are used in projects related to infrastructure construction and management. There is no demand risk for the private-sector party, so the cost of capital is likely to be lower. Moreover, since the construction phase should be completed before services can be made available, the invested funds represent a fixed cost at the outset. In terms of incentives, an availability payment encourages efforts to ensure potential service provision. It could be coupled with user charges or usage payments to the extent that it is efficient to allocate some demand risk to the private-sector party to promote quality-enhancing efforts.
By using only payments related to service availability, the public-sector party retains demand risk. For this reason availability payments alone do not provide incentives for the private-sector party to stimulate service usage and provide service quality. However, since service availability is largely under the private partner’s control, availability payments do provide strong incentives to comply with availability targets. To reinforce these incentives, the private partner should receive no payment until the service flow actually starts, and subsequent payments should be contingent on meeting availability targets.

Availability payments are made by the public-sector party according to definitions of service availability specified in the contract. These definitions should be measurable and observable at a low monitoring cost, acting as targets the private partner must comply with. For example, in the transport sector, service availability typically involves road lanes access; in the water sector, it may reflect access to water services, the level of water flows, etc.

Also, availability definitions should be carefully described since a facility might be usable but at the same time be unavailable. For example, a school could be considered unavailable because the heating system does not work properly, even when classrooms can be used.

**Deductions** should be used to penalize failures to comply with availability, and where service failures occur, to encourage the private-sector party to promptly rectify them.

When using deductions, a scale to measure the degree of service unavailability should be specified in the contract, where possible. For example, in a road, a lane blocked due to traffic congestion may be considered a low degree of unavailability, while a road closed due to maintenance works may be a high degree of unavailability. However, it should be taken into account that measuring the degree of service availability is not straightforward, as for example it might be difficult to assess at any point in time whether there is congestion and why.

In some circumstances, **rectification periods** may be introduced, such that the deductions for low performance are lower if the private partner fixes the problem within the period, and higher if it doesn’t. It is not advisable to set a rectification period within which the private-sector party can fix the problem without being subject to any monetary deduction, as this destroys incentives to respect contractual obligations.

The rectification period after which - if the problem is not fixed - deductions increase should depend on the nature of the project and the severity of the problem. If the private partner does not rectify the failure within that period, deductions are automatically applied. To strengthen incentives to undertake corrective actions as soon as possible, a long period of service unavailability should be penalized with deductions higher than a short period.

The **monetary value of deductions** should be determined taking into account the following trade off: if deductions are too low, the mechanism provides weak incentives
for the private sector to comply with performance targets; but if deductions are too high, the mechanism may lead to excessive risk pricing (i.e. the private partner would seek for a risk premium as a compensation for the risk that events outside its control cause under-performance and thus trigger deductions). To balance these two forces, it is convenient to specify a ratchet mechanism in which, for any given failure, the corresponding deduction is increasing in the duration and frequency of the failure, much like done by rectification periods after which deductions increase. In addition, a recurrent service underperformance should be a factor entitling the public-sector party to claim an early contract termination by the private sector default.

When the exact level of performance desired by the public-sector party is not rigid, it can also be efficient to introduce **bonuses** for performance above the target level, of size comparable to the increased benefit for the public partner caused by the higher than the performance target. This ensures that, if the private partner finds an innovative process that delivers higher quality at relatively low cost, it is rewarded for finding and implementing the innovation in an efficient manner.

Since the use of availability payments also protects the private partner from demand risk, the incentives for it to provide service quality are minimal. Additional incentives should then be given by complementing availability payments with quality performance payments.

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**Case Study: Dublin Bay Wastewater project (Ireland)**

The PPP contract to design, build, and operate the wastewater treatment plant was part of the Water Services Investment Program launched by the Irish public sector. The primary goal of the Program was to improve the quality and efficiency of wastewater treatment by attracting the best technology and expertise available on the market.

The contract was awarded to an international consortium for 20 years for the operational phase.

The public sector retained asset ownership and provided no guarantee for the private-sector party since the overall investment was financed by the Irish public sector along with a grant by the EU Cohesion Fund.

The private-sector party bore the operation risk and was expected to cover maintenance and operation costs from the service charge paid by the public sector. Thus, it had incentives to undertake cost-reducing efforts in order to increase profits.

The public sector collected revenues charging commercial consumers only because the Irish law exempts domestic consumers from paying for water treatment. In determining the tariff level, the amount of untreated discharges and the capital and operation costs were taken into account.

The use of modern technologies and a sophisticated combination of treatments turned the wastewater treatment plant in a unique facility of its type.

*Source: European Commission (2004)*
**Performance payments**

A payment mechanism based on performance rewards the private-sector party for meeting certain standards of the service provision. In practice, performance payments complement other payment method such as usage or availability. The scheme sets charges for performance failures which are deducted from unitary payments. Alternatively, as discussed earlier, the contract could establish ‘bonuses’ to be awarded if and only if certain target performance levels are reached.

Several issues must be taken into account when the public-sector party uses performance payments. In order to stimulate quality innovations, the contract should specified objective measures defining service performance, e.g. quality of water in terms of pH levels, on-time delivery of the service, and adequate road signs. In particular, the standards of performance must be monitored at a low cost.

The payment structure must define the consequences of a failure to meet the required quality level of the service. The simplest approach is to categorize various types of performance shortcomings and use a grid of monetary deductions. An alternative, two-stage approach is to assign penalty points to the private-sector party any time a performance failure occurs, eventually attaching more points to a serious and recurrent failure, and to set a rule that translates points into monetary deductions. Generally, deductions are made when a certain number of points have been assigned to the private-sector party within a defined time period. To provide incentives to perform, there should be an adequate calibration between the seriousness and frequency of a failure, the number of penalty points assigned where applicable, and the financial impact of deductions on the private partner (HM Treasury, 2007).

When the private partner’s performance is continuously poor and early failures are not rectified within a certain period, the public sector may include a ‘ratchet mechanism’ in payment deductions. For example, a simple ratchet mechanism increases the number of penalty points incurred for any given failure that is repeatedly observed over a time period. The ratchet mechanism informs other parties involved in the contract, e.g. lenders of capital, the private-sector party fails to perform. Thus, it encourages the private partner to take early remedy actions to avoid reputation losses.

Quality performance payments should complement other payment schemes so as to provide the private-sector party with incentives to meet the quality standards specified in the contract. The quality performance targets should be measurable and observable at a low cost to avoid any dispute or controversy. All quality indicators (including user satisfaction surveys) that can be used to assess compliance should be included in the payment unless the expected costs of monitoring an indicator exceed the expected efficiency gains.

A system of robust **deductions** for service underperformance and, eventually, of **bonuses** for performance above the target are crucial to ensure that the private-sector party complies with quality performance targets. To also ensure a quick remedy of performance failures, the contract should envisage a **rectification period** after which, if the private partner does not rectify the failure, deductions are increased further. The **criteria** to set deductions and bonuses are the same as those discussed above for the case of availability payments.
Case Study: Moray Coast Wastewater project in Scotland (UK)

In 2001, the Catchment consortium was awarded a 30-year contract to design, build, finance, and operate three sewage treatment plants, a sludge dryer, twenty pumping stations, two new long sea outfalls and a 47-km pipeline network.

In designing the project, environmental issues had to be considered because of the natural beauty and fauna of the Moray coast. Thus, the public-sector party (the North of Scotland Water Authority) retained the statutory/planning risk. Instead, construction and operation risks related to the variability of wastewater flows were borne by the private-sector party.

The payment for wastewater and sludge treatment received by the private partner was based on daily samples of treated effluent. No payment was to be made unless the private partner complies with the sampling regime and the wastewater treatment standards required.

The contract also envisaged an arrangement to share revenues and refinancing gains between the public and private parties.

Before being awarded with the Moray project, the Catchment consortium had been selected for two PFI projects, the Highland and the Tay wastewater projects. The previous contractual relationship between the consortium and the North of Scotland Water Authority certainly facilitated the contract drafting and the project operation. The Moray project was completed on schedule and satisfactory results were obtained in the first performance tests.


Case Study: The London Underground (UK) (Part III)

The payment mechanism specified in the PPP contract consisted in a basic infrastructure service charge (ISC) combined with bonuses and deductions. To the extent the Infracos met performance, availability, and ambience targets, they were entitled to bonuses that increased their revenue. On the other hand, failure to meet these targets triggered deductions that reduced their revenue.

The Infracos’ performance in rehabilitating and upgrading the tube was to be measured by the journey time capability (JTC), i.e. the time needed for a train to complete a journey. To achieve the performance targets and reduce the JTC, the private partners had to improve track, signaling, and trains. Availability was to be measured by the number of lost customer hours, with penalties varying with the severity of a failure, e.g. breakdowns, signaling and other failures were penalized more heavily at peak times. Ambience and general conditions of the trains and stations were to be measured by customer surveys.

As it was mentioned in Part I of this case, the PPP contract also included debt guarantees allowing lenders to recoup their investments in case the contract terms were substantially modified.

Poor performance and penalties

Soon after the contracts began, the Infracos were subject to criticism because of their poor performance. The criticism on safety issues became stronger when two derailments occurred in
Moreover, the performance targets based on JTC were hardly attained as the rehabilitation works delayed significantly, suggesting the works schedule proposed by the companies were unrealistic. To defend themselves against the mounting criticism on their poor performance or overambitious bids, the Infracos argued that the assets they inherited were in physical conditions much worse than they had anticipated.

The Infracos’ poor performance led LUL to apply penalties and to threaten to take over the contracts if the situation were to persist. In the first year of the contracts, the companies were fined £32 million by deductions for failing to meet some of the targets, and earned just £12 million in bonuses for achieving other targets.

Despite the large (net) deductions applied to the basic ISC, the consortiums made huge profits. According to the NAO report (2004a), the Infracos shareholders earned a rate of return around 20%, a third higher than the normal rate of return in private finance deals.

Therefore, the impact of payment deductions on profitability must have been small (at least relative to gains from keeping low the quality of supply). Indeed, several observers argued that the deductions were too small considering both the payments made to the Infracos to undertake the pledged works and the inconvenience suffered by final users due to service disruptions. The too low deductions for poor performance appear to have distorted the incentive scheme sufficiently to generate the widespread poor performance of the Infracos together with their high profitability.

Sources: see London Underground (Part VII).

5.2.3.3 Liquidated damages and performance bonds

When the private-sector party fails to deliver the service on time or to meet the performance standards, the public-sector party may use contractual protections such as liquidated damages and performance bonds. Liquidated damages are rules that set in advance an amount to be paid by the private-sector party to compensate for the estimated economic losses incurred by the beneficiary in case of certain breaches of contract. Liquidated damages are often calculated as a percentage of the contract price that depends on the project complexity, e.g. it ranges from 10 to 15 percent in gas pipelines projects, and from 35 to 40 percent in coal-fired power generation (Kerf, 1998).

Facing liquidated damages, the private partner may increase the price required for the project to ensure itself ex ante against the risk of late service delivery. The private partner will increase its tendering price anticipating any contingency that makes liquidated damages payable, e.g. the private-sector party can raise the estimated construction cost or require a longer construction period. Therefore, using liquidated damages is likely to increase the unitary payments or user charges the private-sector party receives, and also to lengthen the time schedule of the project.
The HM Treasury (2007) suggests that since liquidated damages can compensate for the beneficiary’s economic losses but at the same time they have a negative effect on pricing, the use of liquidated damages in addition to deductions or rewards for quality is cost-effective only as long as the expected losses suffered by the beneficiary are greater than the payment increase required by the private-sector party. However, this does not take into account the gain that liquidated damages may create in terms providing incentives to invest and perform when it is not possible to introduce sufficiently strong deductions or bonuses linked to quality. By increasing incentives, liquidated damages can be suitable also when the expected losses suffered by the beneficiary are lower than the payment increase required by the private-sector party.

Performance or ‘surety’ bonds are used as a guarantee of construction completion in case the private-sector party goes bankrupt and thus the project remains unfinished (Engel et al., 2006).49 The bond is issued by a bank, an insurance company or a specialized ‘surety bonds’ company in favor of the public-sector party and guarantees a payment (typically around 10 percent of the value of the construction contract) or even the private partner replacement and project completion (in the case of surety bond companies) in case of non performance by the original private partner. When the public-sector party requires a performance bond to the private-sector party, the risk of losing the bond encourages the private-sector party to comply (Gausch, 2004; Engel et al. 2006). In addition, it prevents the private-sector party from ‘walking away’ from the project if disputes arise.50 On the other hand, as with liquidated damages, a private partner asked to post a performance bond is likely to react by passing through the cost and time schedule the risk of losing the bond in the future (HM Treasury, 2007).

Contractual protection payments are not recommended if the public sector does not suffer any significant loss as a consequence of the private partner’s bad performance, e.g. because payment deductions for poor quality have been sufficiently strong. As it has been argued, both liquidated damages and performance bonds are likely to increase the price and lengthen the project schedule, so the public sector should consider their effects on the value for money (HM Treasury, 2007).

Liquidated damages and performance bonds should be used besides deductions as further contractual protections for the public-sector party in case the private sector fails to meet the service commencement day or (for bonds only) it goes bankrupt leaving the project unfinished. Although these protections may lead the private partner to require

49 In the US in 1990-1997, more than 80,000 private partners went bankrupt leaving unfinished project with liabilities of USD 21 billion (Engel et al., 2006).
50 For example, in the Tucuman water project (Argentina), a conflict arose between the private partner and the authorities on matters of water quality and pricing. The performance bond posted by the private-sector party did have an impact in solving the conflict (Kerf, 1998). However, in the water sector, it is debatable whether performance bonds are an effective device to make private partners assume risk for poor performance (Lobina and Hall, 2003). When a public authority is relatively weak, e.g. a local authority dealing with a transnational firm, it may be reluctant to call in a performance bond. The public sector may fear retaliation from the private-sector party who could withhold payments of lease or concession fees, or threaten to discontinue the service provision.
higher tariffs and/or a longer construction period, there are typically significant gains in terms of incentives to invest and perform, especially when the public sector is in a weak bargaining position, once the contract has started, because of the need to ensure service continuation.

The amount of liquidated damages should be specified in the bidding documents so bidders can price the risk of incurring in such charges. To assess the economic value of liquidated damages, the public-sector party could ask bidders to price also a project without liquidated damages; then, the difference in the bid price should reflect the risk premium attached by the private sector to the contract including liquidated damages.

To reinforce incentives to perform the contract should specify the circumstances under which the contract may be terminated on private sector default and performance bonds are payable (See Section 4 for issues related to early contract termination).

Transparency of the payments to the private partner and gain sharing

[Brazil: Lei 11.079, Art. 5]
The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:
IX – the sharing with the Public Administration of the economic gains of the private partner resulting from the reduction of credit risk related to the funding contracted by the private partner;

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
27. LA solicitud de autorización, las dependencias y entidades deberán anexar los siguientes documentos:
I. El proyecto de contrato de servicios de largo plazo, que deberá contener, entre otros términos y condiciones, los establecidos en la fracción VI del numeral 21, así como los siguientes:
c) La forma, términos y condiciones de pago

5.2.4 Dealing with social and environmental issues in contract design

5.3 Choosing the right balance between bundling and competition

Long term contracts have two great inconveniencies: they reduce the public sector flexibility for adapting the service delivery to new or different needs and, decrease the exposure of the incumbent service provider to competition and market discipline. On the positive side, they may impulse productive efficiency and innovation particularly when construction and operation are bundled. Bundling may nonetheless favor transfer pricing, particularly when an effective supervision is absent, asymmetric information is height, and investments are scarcely verifiable. It is in this context that contract duration becomes a specific tool for controlling the performances’ “relaxation” of the private partners. Yet, contract duration is strongly linked to investment decisions of the private partners and must be tailored to the specificity of the project, including the contractibility of investments, performances and payment mechanisms. Shortening the duration of the
contract may nonetheless reduce the incentive of the private partner to undertake investments. Allowing a compensation scheme where the winning competitor pays compensation to the incumbent may be more viable alternative. The same may be achieved by re-tendering before the long-term contract expires. The unbundling of soft-facility management services may favor transparency of the private performance cost-recovery as well as the involvement of small firms that can not participate in large PPP biddings. When unitary payments are involved, it also possible to let bidders propose the duration of the contract as part of their bids. Where tariff are used, determining the length of the contract using the Least Preset Value of Revenue may also allow the pricing of the duration at the bidding stage.

**Transparency of the term of the contract duration**

[Brazil: Lei 11.079, Art. 5]
The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:
1. the term of the contract, which shall be in line with the amortization of the investments to be made by the private partner, not shorter than 5 (five), and not longer than 35 (thirty-five) years, including possible extensions;

20. Las dependencias y entidades deberán presentar las solicitudes de autorización de proyectos para prestación de servicios ante la Secretaría, a través de las Direcciones Generales de Programación y Presupuesto sectoriales. En el caso de entidades sectorizadas, la solicitud deberá ser presentada por la dependencia coordinadora de sector y, en el caso de las entidades no sectorizadas, la solicitud deberá presentarse por la entidad, directamente a las citadas Direcciones Generales.
21. Las solicitudes a que se refiere el numeral anterior deberán acompañarse de la siguiente información:
VI. Los elementos principales que contendrá el contrato de servicios de largo plazo que se celebraría entre la dependencia o entidad contratante y el inversionista proveedor, incluyendo:
b) La duración del contrato;
27. LA solicitud de autorización, las dependencias y entidades deberán anexar los siguientes documentos:
I. El proyecto de contrato de servicios de largo plazo, que deberá contener, entre otros términos y condiciones, los establecidos en la fracción VI del numeral 21, así como los siguientes:
a) El plazo para dar inicio a la prestación de los servicios;
f) Las condiciones para la modificación y prórroga del contrato;

**5.3.1 Contract duration and investment**

Contract duration can affect the investment decisions of the private-sector party both when investments are contractible (or verifiable) and therefore describable in the initial contract, and when they are not observable and therefore non-contractible.

Consider first the case of verifiable investment. With projects where the public-sector party can pay a contribution to the private-sector party, contract duration should play a limited role on investment levels since investment levels can be specified in the
contract and adequate payments by the public-sector party can ensure the project bankability whatever the contract length. Any changes in the duration of the contract can be accompanied by changes in the payment by the public-sector party to the private-sector party that leaves the level of bankability unchanged.

With financially free standing projects the private-sector party does not receive contributions or payments from the public-sector party, and its sole source of revenues is the cash flow that the project can generate through user charges. In these cases, the duration of the contract must ensure bankability and thus be consistent with expected cash flows and the time needed to recoup invested funds. As long as supplied quantity and correspondent revenue increase with contract duration, the larger the investment, the longer the optimal contract duration. If the contract is shortened, then user charges are modified so as to ensure greater revenues to the private-sector party, or the investment obligation is reduced.

However, contract duration could be determined endogenously. Engel et al. (2000, 2001) develop an award criterion based on the Least Present Value of Revenues (LPVR) that bidders must submit when tendering. The contract lasts until the winner private partner receives the LPVR it had submitted. In LAC countries, this criterion was used in highway concessions, one in Chile and three in Peru (Guasch, 2004). A similar scheme has been used also for the Dartford Tunnel in the UK (Klein, 1998). The advantage of this scheme is that it reduces the demand risk for the private-sector party as a fall in demand and hence in revenues immediately translates into a lengthening of the contract. The disadvantage is that by being more protected against demand risk, the private-sector party has less incentive to make investment that can help to control demand risk.

Consider now the case of unverifiable investment, where the investment is not itself directly contracted/contractible upon and therefore cannot be described and protected in a specific clause in the contract. If the investment is at least partly specific to the public sector’s needs or to the project (we refer to this as ‘specific investment’) it will have limited value for the private-sector party if used for alternative purposes outside the contractual relationship. In this case, if the investment helps the private-sector party to increase its profits (say by reducing the costs of the project) and if the private-sector party can appropriate (at least some) of these increase in profits (say because the original contract is fixed price), then a long-term contract provides more incentives to undertake unverifiable investments.

This is because specific investments imply larger losses for the incumbent in case of terminating the relationship with the public sector. In particular, when both parties negotiate a renewal of a short-term contract, the public sector can hold up the private-sector party by the threat of terminating the relationship, asking for price reductions or changes in the original contract terms. To the extent that the private-sector party fears holdups that reduce investment returns in the future, it has then less incentive ex ante to undertake specific investments. Since a long-term contract fixes the contract terms, it protects the incumbent against holdup. In this respect, the higher the investment
specificity, the longer the optimal contract duration (see Ellman, 2006 for an in depth discussion).51

If the contract duration is to be determined with the purpose of providing appropriate investment incentives, it is important to take into account the contractibility and specificity of investments and the payment mechanism used in the project.

For a project involving contractible investments and unitary payments made by the public-sector party, the duration of the contract should be determined ensuring a balance between the future certain payments and the funds invested by the private-sector party, taking into account the residual value of the asset.

In particular, assets should be kept by the private-sector party after contract expiration provided that they have a residual value (and thus could provide the private partner with revenues in an alternative use) and the public sector does not need them to ensure service continuation. The contract should then balance the unitary payments with the invested funds net of the residual value of the assets. Thus, for a given payment per unit of time, the contract duration should be shortened when the project’s assets have residual value and will be retained by the private sector; alternatively, for a given contract length, the payment per unit of time should be reduced.

In this regard, it is important to properly design the payment profile, i.e. the stream of outlays by the public-sector party: if payments are concentrated at the back-end, PPP turns into an expensive way of financing public infrastructure, with a negative effect on welfare across generations; on the other hand, if payments are concentrated at the front-end, the private partner faces weak incentives to perform in the long term.

If, instead of unitary payments, user charges constitute the payment mechanism, the length of the contract should be such that expected revenues to be collected from final users over the contract life are sufficient to recoup the invested funds.52 Therefore, designing a long-term contract is recommended for a project requiring a large volume of contractible investment. Besides, for any volume of investment, the longer the contract, the lower the service charge that allows recovering the invested funds. Hence, a long-term contract is advisable to ensure affordability of the project by both the public-sector party and the final users.

On the other hand, for a project involving non-contractible investments, the contract duration should carefully consider the assets specificity. When a non-contractible, highly specific investment that increases the project’s profits is available, as it is generally the case in DBFO contracts where the quality of the facility has a significant impact on the operation and maintenance costs, it is advisable to lengthen the

51 Ellman (2006) warns that self-investments may raise the private partner’s payoffs but in an inefficient way, e.g. resources are wasted in trying to hide low quality aspects of the services.
52 It should be noticed that, in principle, expected revenues are higher for a longer contract, but also the forecasts of demand and costs are less accurate for a long time horizon, thus increasing the project’s risks.
duration of the contract to encourage the private-sector partner to undertake it (assuming the specific investment raises the private profits as well).

By ensuring a protracted contractual relationship, a long-term contract allows the private partner to recover the funds invested in specific assets, and protects him from holdups by the other party that could arise in renewing short-term contracts. Hence, a long-term contract should be used to provide incentives to undertake non-contractible specific investment and ensure the benefits of the whole-life costing approach, although for the reasons discussed below, excessively long contracts should be avoided. There are indeed often legal constraints on the contract length. For example, the maximum length of concession in Chile is 50 years, and of a PPP contract using private finance in Italy is 30 years.

**5.3.2 Contract duration and flexibility**

In sectors with a rapid pace of technological change and changing user needs, the public-sector party may prefer to have flexibility to modify the contract terms adapting the service provision to the incoming innovations (HM Treasury, 2007). In order to adapt the service provision as required by the public sector, the private-sector party would undertake investments referred to as adaptation investment. The contract must then provide for the right of the public-sector party to demand changes in service provision and for the right of the private-sector party to be adequately rewarded for his adaptation investment.

In practice, requiring changes in service provision so as to adapt the service to new user needs can be very costly for the public sector as it needs to bargain with the private-sector party for the implementation and remuneration of these changes. Contract duration is then important as it affects the bargaining position of the public-sector party and thus the cost the public sector will have to pay for adaptation investment. This in turn affects the net gain for the public sector from adapting the contract to new user needs and thus the flexibility of the contract.

In particular, a long-term contract implies less flexibility because the public sector has to wait longer if it wants to switch provider. The availability of alternative providers improves the bargaining position of the public sector when requiring service adaptation from the current provider. In addition, with a long-term contract the public-sector party’s threat of no renewal during the contract is less powerful because a long-term contract implies the realization of the threat would occur far in the future, and thus the present discounted value of the cost of failing to renew the contract is negligible for the

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53 Hospitals and health services are typical examples of highly innovative sectors where PPPs have been implemented and where user needs evolve rapidly over time.
54 Adaptation investment is a term coined by Ellman (2006).
incumbent. Therefore, for the public sector a long-term contract also increases the cost of renegotiating efficient adaptations within the contract period.

On the contrary, when the contract is short-term, the public-sector party’s threat to contract with a competitor when the current contract expires can be more powerful and induce the private-sector party to accept to make the changes for a more reasonable remuneration. Furthermore, the cost of waiting for the end of the contract to adapt service provision to new user needs is lower the shorter the contract. Once the contract expires, the public sector is indeed free to redraft a new contract with another provider under more competitive conditions. For these reasons, short-term contracts provide flexibility to the public-sector party and facilitate efficient adaptation to changes of needs.55

These observations suggest that the larger the flexibility and adaptation investment sought by the public sector, the shorter the optimal contract duration, at least for the dimension of the contract subject to demand changes (Calzolari and Spagnolo, 2006; Ellman, 2006; HM Treasury, 2007). If a shorter contract without public-sector party contributions does not ensure bankability, then public-sector party contributions might be sought. Sectors where user needs change rapidly over time should be characterized by shorter contracts. In light of the earlier discussion of the effect of contract duration on investment, it then follows that a optimal contract design may require a different contract duration for different parts of the supply, longer where non-contractible specific investment are needed, shorter or more frequently open to structured renegotiation where they are not (Albano et al. 2006a). In no case should contract duration be chosen simply on the basis of financing considerations.

The duration of the contract affects the flexibility to modify the contract terms adapting the service provision to incoming innovations in user needs and technologies. In principle, it is advisable for the public-sector party to enjoy a high degree of flexibility when the project develops in a sector characterized by a rapid pace of change in user needs and technologies. Thus, it may be confidently expected that the service initially contracted will become outdated or redundant in the future, so adaptations whose nature is yet unknown, and hence non-contractible, are likely to be needed. But it may happen that adapting the service provision at the time innovations arise is costly for both the public-sector party (who should require and negotiate changes in the contract terms), and the private-sector party (who would have to undertake adaptation investment). Under these circumstances, the bargaining power of both parties heavily depends on the contract duration.

The contract should be short-term if a high degree of flexibility is to be given to the public-sector party. Having a chance to switch provider when the contract expires, the public-sector party holds a strong bargain position and thus can induce the private partner to accept contract changes and undertake adaptation investment for a reasonable

55 However, transaction costs are involved in short-term contract renewal, re-tendering, and switching private partners (Calzolari and Spagnolo, 2006). Given these costs, it is often difficult and sometimes inefficient for the public sector to credibly commit to replacing the current private partner (Lewis and Yildrim, 2006).
remuneration. Moreover, if no agreement is reached on the proposed changes, the public-sector party has the option to wait little time until it can redraft a new contract with another provider introducing efficient adaptations (rather than commencing a dispute resolution procedure).

**Case Study: The London Underground (UK) (Part IV)**

The PPP contracts awarded by the consortiums Tube Lines and Metronet to rehabilitate and upgrade the underground networks have a duration of 30 years. Periodic contract revisions were envisage every seven-and-a-half-years, so the contracts were implicitly divided in four periods.

The PPP agreements included special provisions allowing LUL to require additional works from the Infracos that could not be fully contracted upon in the original contracts. The possibility of reviewing the contract every seven-and-a-half years intended to give flexibility to LUL since service requirements and the infrastructure service charge (ISC) could be modified. Also, the consortiums’ performance was to be evaluated in the review periods.

But this flexibility may have been costly for the project: the uncertainty about what could happen in the future periodic reviews may have increased the cost of capital for the Infracos.

*Sources: see London Underground (Part VII).*

### 5.3.3 Contract duration and competition

Contract duration has implications on how market forces encourage efficiency and innovation. Economies of scale and scope leading to cost-efficiency are better exploited under a long-term contract when quantity follows duration. Also, long-term contracts reduce the frequency of interaction among competitors and may thereby hinder the formation of anticompetitive bidding agreements, fostering competition and efficiency (Calzolari and Spagnolo, 2006; Albano et al., 2006b).

On the other hand, in the absence of bidding rings a long-term contract reduces exposure of the incumbent to competition and market discipline. Then, incentives to increase efficiency result from the more competitive environment associated with short-term contract. If collusive agreements can be effectively prevented (something hard to achieve in the large concentrated markets where PPP are undertaken), frequent contract renewal and re-tendering impose market discipline on the incumbent and allow more efficient innovators or entrants to replace earlier a less efficient incumbent (Calzolari and Spagnolo, 2006). If shorter contracts induce a higher turnover among suppliers, they allow more experimentation and reduce the risk that an incumbent reaches too early a monopoly (lock-in) position, either taking all the market and causing the exit of
competitors;\textsuperscript{56} or, thanks to the vantage accumulated through ‘learning by doing’ (Lewis and Yildrim, 2006; European Commission, 2003).\textsuperscript{57} A drawback against which this advantage must be weighted is that with short term contract and higher turnover there will be then less learning by doing in the short run, with consequent higher costs and lower quality (Lewis and Yildrim, 2006).

We mentioned that, to the extent that the private-sector party fears to be replaced in the next re-tendering before it recoups invested funds (because investments were specific and non-contractible), the private-sector party will have less incentive ex ante to undertake these investments. One proposed solution is to allow a compensation scheme where the winning competitor pays compensation to the incumbent (Guasch, 2004). When investment is not contractible, this compensation can be set as a proportion of the winning bid as this bid conveys information on the value of the underlying assets and thus on the investment made by the incumbent (Iossa and Legros, 2004). This allows the incumbent to receive remuneration for its investments.

This mechanism, however, implies a ‘dangerous relationship’ between incumbent and competitors. When the investment is directly contractible, it is preferable for the original contract to appropriately reward the investment without any linkage to the duration of the contract or it can provide for the public sector to act as intermediary.

In theory, a periodic re-tendering could enhance competition and induce the private operator to invest and improve efficiency while running the concession. The extent of this effect depends however on the number of potential competitors, given the size of the bundled PPP.

If the contract duration is to be managed as a means to foster competition and market discipline, it is important to consider the possibility of collusive agreements in a bidding ring, the transaction costs associated with a re-tendering, and the sources of static/dynamic efficiency gains.

For a sector having a largely concentrated market, where it is difficult to prevent the formation of anticompetitive bidding agreements, a long-term contract is advisable to reduce the frequency of interaction among competitors and thus the likelihood of such agreements. Besides, by lengthening the contract, the private partner is given an

\textsuperscript{56} The case of Valencia water concession illustrates this point. In a 1902 tender to provide water services in Valencia (Spain), the consortium Aguas de Valencia awarded a 99-year operation contract. In 1990, the local public sector began to draw up tender documents. Then, the consortium announced it would demand compensation for past investments should it not win the re-tendering. Since the compensation would have been substantial, there was not a single competing bid in the re-tendering process. Thus, the incumbent was granted a 50-year extension for the concession, and the city will have had 150 years of a water monopoly (Lobina and Hall, 2003).

\textsuperscript{57} To avoid this in some cases long-term concession contracts introduce an instance of re-tendering before the contracts expire. For example, in the Argentine power sector, concession were signed for 95 years entitling the public-sector party to re-tender facilities 15 and 25 years after the first tendering process (Guasch, 2004).
opportunity to increase the quantity supplied and to exploit possible economies of scale and scope. However, since a long-term contract protects the incumbent from being replaced until it expires, incentive devises should be carefully designed to discipline the private-sector party as if it were operating in a competitive environment. A possible device is an instance of re-tendering before the long-term contract expires.

On the other hand, if collusive agreements in a bidding ring can be effectively prevented and the transaction costs for switching providers are small, it is recommended to use a short-term contract that allows for frequent re-tendering and thus exposes the incumbent to competition and market discipline. In sectors with significant dynamic efficiency gains, using shorter contracts also encourages experimentation and innovation because a (potential) turnover among competitors enables a more efficient innovator to replace a less efficient incumbent. Nevertheless, cost reductions and quality improvements that result from ‘learning by doing’ may be lost if the incumbent is replaced too early, so contracts should not be too short.

Contract renewal is an in-kind reward for the current incumbent that encourages it to comply with the contract terms and to undertake non-contractible investments and quality-improving actions. Using contract renewal as a performance incentive requires the contract to be short-term so that the frequency of renewal increases. Moreover, a short-term contract provides the public-sector party with an outright exit option if the private partner performs poorly. The exit option could be valuable when it is costly to specify and enforce clauses for early contract termination aiming at penalizing the private sector for a systematic bad performance.

5.3.4 Contract duration, renewals and performance incentives

Contract duration has implications on how renewals influence performance. Contract renewal gives an important incentive to the incumbent to perform satisfactorily and comply with both contracted and non-contractible quality standards. Thus, contract renewal can be used as an in-kind reward for good past performance. Naturally, the length of the contract determines the frequency of eventual renewals. The shorter the contract length, and thus the higher the frequency of renewal, the more effective the renewal is as a performance incentive. (Calzolari and Spagnolo, 2006). Besides, from the public sector’s perspective, contract renewal gives an exit option if the private-sector party performs poorly. In particular, a short-term contract reduces the lock-in effect, i.e. the fact that, despite termination clauses, the public sector might find it costly to switch private partner within the contract life even when the incumbent’s performance is not satisfactory.

We mentioned earlier, however, that a too-short contract may end up hindering the private partner’s performance by reducing economies of scale, increasing fixed set up costs (and other contract-specific transaction costs), reducing learning by doing and facilitating cartel formation. Therefore, the optimal contract duration should be chosen by evaluating the forces of this trade off in the industry under consideration.
5.3.5 Service unbundling

We have discussed the main attractiveness of a PPP when the contract bundles the different activities involved in the project. In some cases, however, the contract unbundles services related to the management of the facility undertaken by the private-sector party. Two types of services may be distinguished: ‘soft’ facility-management services (e.g. cleaning, catering, security), and ‘hard’ facility-management services (e.g. routine and/or life-cycle maintenance of buildings and equipment). Soft services neither require significant capital outlays to be provided nor affect the value of the project’s major capital assets, whilst hard services do involve capital outlays and affect the value of capital assets.

In choosing between bundling and unbundling of soft and hard services, there is a trade off to consider. Bundling soft and hard facility-management services in the contract has the advantage that, being responsible for providing both soft and hard services, the private-sector party cannot argue availability failures are not its fault but an otherwise independent soft service provider’s.

On the other hand, there are benefits for the public-sector party in unbundling soft and hard services, and thus in dealing with separate soft-service providers. These benefits arise, for example, because soft-services provision generally requires less capital investment (if any) than hard-services provision. As discussed in more depth in section 6 this makes it desirable to choose shorter-term contracts for soft services so as to benefit from the competitive pressure that more frequent tenders guarantee. Hard services instead, being more capital intensive, tend to require longer-term contracts for the protection of investment. The cost of this is the reduction in the competitive pressure.

In addition, separate tendering for soft services favors the participation of small firms to the tendering process and thus helps the competitive pressure; small firms tend not to participate in large and complex tenders for PPP projects.

A decision to unbundle services is to be made considering not only the above trade off, but also other sector- and country-specific factors. For instance, in the health sector, there are no uniform experiences across countries regarding service unbundling: in Portugal, a PPP for the construction and operation of a hospital typically includes the provision of clinical service, while in the UK hospital projects do not include these services.

A project may involve different services, e.g. a road project encompassing construction of a highway, maintenance service provision, accident recovery service, etc. In particular, the services related to facility management can be classified in two categories: ‘soft’ and ‘hard’. Soft services neither require significant capital outlays to be provided nor affect the value of the project’s major capital assets, e.g. cleaning and security. On the contrary, hard services do involve capital outlays and affect the value of capital assets, e.g. life-cycle maintenance services.
In some cases, it is possible and convenient to unbundled soft and hard services, purchasing them from different providers through contracts of different duration. These cases arise, for instance, when the providers of soft services are small firms that employ most of the staff and so are vulnerable to environmental and social conflicts; and when the soft service providers cannot be heavily penalized through performance deductions, but their failures largely affect the public opinion about the project since they constitute an inter-face between the facility and the final users. Then, if unbundling is undertaken, short-term contracts should be used for contracting soft services as little investment is required in providing them. In contrast, long-term contracts are advisable for purchasing hard services since they involve large capital expenditures. This is the case of PPP of hospitals in Portugal where the contract length for core services is much longer than for cleaning services.

5.3.5.1 Endogenously determined contract duration

In the case of an operation PFI contract involving fixed, unitary payments, it is possible to let bidders propose the duration of the contract as part of their bids. Instead, in a concession contract where tariffs are used, the length of the concession could be endogenously determined using the Least Present Value of Revenue (LPVR) method. Once the project delivers an amount of revenue equal to the LPVR submitted by the winning bidder in the tendering process, the contract expires automatically. Then, unexpected variations in service demand are accommodated by changes in the duration of the concession.
5.4 Building transparent and accountable contractual and institutional mechanisms for managing the change of circumstances

The natural contractual incompleteness of PPP long term agreements requires the awarding authorities to include in the contract specific mechanisms for dealing with (1) qualitative aspects or tasks of the private service performances that are too costly or simply impossible to specify, and (2) changes of circumstances. The unbundling of soft facility services, with the consequent reduction of the duration of such services delivery, may serve to reduce agency costs due to asymmetric information. Consumers’ surveys run by third independent parties or audited by the same may help in controlling the quality aspect of non-measurable tasks which may otherwise be cut by the private provider to reduce costs. Combined with registers of contractors and consultants, such surveys may foster “reputation” or “brands” acts and sustain high quality of the performances. Yet, absent a transparent procedure for their creation and monitoring, the mentioned registries may also serve to artificially reduce competition, favor conflicts of interest within the public administration, or cover collusive practices. Nonetheless, poorly observable quality dimensions or tasks, as well as the call for ensuring that specific needs are met may require the use of some input-based specification. To this concern, the link to specific payment mechanism cost-plus more than fixed-cost may also serve to reduce agency cost.

Transparent mechanisms for dealing with unforeseen changes in cost of major inputs, service requirements or regulatory environment, such as indexation clauses or value testing procedure (including price reviews, market testing and benchmarking) may reduce gaming to compensate non-recoverable cost. These clauses should provide the private sector with hedging cost-overrun outside its control while maintaining the incentives to undertake cost reducing efforts. Price adjustment clauses may also reduce opportunistic behaviors of the private partner, particularly when the regulatory lag is structured in a way to incentive cost-efficiency efforts and to avoid the ratchet-effect of the private party. The need for the contract to be adapted to changes of circumstances can be dealt also by building in the contract a certain degree of flexibility aimed at reducing the need for contractual changes. Such built-in flexibility can be priced at the bidding process and can reduce gaming at the subsequent renegotiation stage. Shock-absorbent clause drafted into the contract may help to avoid minor financial restructuring and reduce the emergence of costly dispute, which may jeopardize the public-private relationship. The same flexibility in the design of the infrastructure projects can be complemented with ex-ante drafted contractual devices. They should be capable of switching the project engineering or structure to fulfill new (but already priced) service demands. Furthermore, the limit to the value of additional works that can be requested after the awarding -without calling for a new tendering - may also reduce gaming and renegotiations.

The management of contract incompleteness and changes of circumstances along the PPP lifecycle challenges the relationship of the parties including affected stakeholders. An accessible and transparent monitoring, the strengthening of consultation
and the dissemination of information to the parties involved in the service delivery may serve to prevent disputes between the parties. PPP contracts should therefore include duties and rights for the parties, to achieve such goals. Relation management mechanisms should be designed to prevent crisis, and accountable and fast dispute resolution mechanism, such as arbitration, should be considered in contract drafting. This is particularly relevant in PPP because service disruption can affect the public-sector party, which can be easily captured in long-lasting disputes. Yet, adaptation and flexibility may reduce predictability and therefore clash with “bullet-proofed” cash-flow predictions needed for the bankability of highly leveraged projects. Debt providers concerns must therefore be considered and included in contract provisions. Transfer of information by the lenders to the public party may also reduce asymmetric information. Yet, capture by the same debt providers shall equally be avoided and “step-in rights” must be carefully drafted for maintaining the accountability of the taking-over entity and transparency of its performance requirements and liabilities. Change of circumstances, including defaults of any party, voluntary termination of the public sector, force majeure, may ultimately lead to an early termination of the partnership. This is why it is important for the contract to provide transparent provisions concerning the circumstances that may lead to termination together with the correspondent compensation scheme that may be applicable.

5.4.1 Price variations

To the extent that the service price is fixed during long periods of time, there is the risk that unforeseen changes in costs of major inputs, service requirements, or the regulatory environment render that price insufficient to cover operation costs and financial obligations. This risk affects both tariffs paid by final users and unitary payments paid by the public-sector party as long as they remain unchanged over time, and it is apparent in long-term contracts such as a 30-year concession. Thus, it is convenient for both parties to introduce provisions in the contract design to adjust the price in certain specified circumstances.

By reducing the risk exposure of the private-sector party, the provisions are likely to increase the initial bid price paid by the private-sector party in a concession (or lower the initial price paid to the private-sector party in a procurement agreement) in the tendering process. Besides, the provisions help in reducing the cost-covering service charge, either the tariff or the unitary payments, that is needed to ensure bankability. This is so because, when projections on demand and/or costs are highly uncertain, the private-sector party may seek to negotiate a relatively high service charge, thus requesting a sort of premium to compensate it for the possibility that the price fixed in the contract will become insufficient in the future. Under these circumstances, allowing the service charge to adjust according to the (observable) costs outside the private partner’s control, the
price adjustment clauses help in increasing the initial bid price paid by the private-sector party in a concession.  

The price-change provisions should be carefully formulated taking risk allocation and transaction cost issues into account. As we have seen before, there is no gain from transferring risk to the private-sector party that it cannot control. Thus, the clauses should provide the private partner with a hedge against unforeseeable cost overruns outside its control, while maintaining the incentives to undertake cost-reducing efforts and to seek efficiency. Further, the price adjustment rule and procedures should try to economize on the costs of collecting and processing information, and to minimize the scope for future disputes on price changes.

The payment mechanism should always encourage the private partner to control the costs of the project, but it should not transfer to the private partner the risk of cost overruns resulting from events outside its control. In order to protect the private partner from such cost overruns, and thus to avoid excessive risk pricing, the contract should include provisions to vary the service charge (i.e. the tariffs paid by final users or the unitary payments made by the public sector) according to the evolution of certain costs. As long as price variation provisions keep the service charge in line with market prices, they also protect final users and the public sector from paying an amount in excess of what other potential service providers would charge.

Price variation provisions may take the form of indexation clauses and/or value testing procedures (i.e. market value and/or benchmarking). In some cases, it is convenient to combine different provisions to reduce risk pricing. For instance, a private partner may be more willing to bear the risk that the project’s costs increase above the price index agreed in the contract if a subsequent value testing will correct the price of service so as to fully adjust the cost increase (i.e. any misalignment between the price of service and the actual costs is of a transitory character).

5.4.1.1 Inflation indexation

Inflation indexation is a typical provision to adjust tariffs and unitary payments in a continuous basis. Since price and cost indexes used are publicly available, this provision economizes on transaction costs. To adjust service charges by indexation, a choice should be made concerning the price or cost index to apply, the proportion of tariff subject to adjustment, and whether the indexation rule itself will be revised periodically. Regarding

In addition, as long as most of the cost variation experienced by the private-sector party is of an industry-wide nature, e.g. changes in prices of major inputs used in the sector, the price adjustment provisions may prevent the difference between the service charge and the market price of similar services from varying excessively over time (HM Treasury, 2007).

In terms of the formula for incentive payment mechanism, the service charge could be determined by $P = F + bC_c + C_n$, where $C_c$ are costs controlled by the private-sector party, and $C_n$ are non-controlled costs. More generally, the provisions should not distort operating, investment, and financial decisions of the private-sector party.
the price or cost index to be applied, there is an important trade off to consider. If the index used is not specific to the sector, e.g. the retail price index (RPI), it is likely that its variations do not mimic the changes in the private partner’s non-controlled costs. This may lead to price adjustments failing to track the relevant cost changes, thus distorting incentives. On the other hand, if the index is too industry-specific, it is likely that its variations could be influenced by the tariff level of the regulated service, and so manipulated by the private-sector party itself (Armstrong et al., 1994). The proportion of tariff subject to indexation also matters: to provide a proper hedge against observable, non-controlled cost overruns without distorting incentives, the proportion of tariff subject to indexation should match the proportion of variable costs in total costs (HM Treasury, 2007). Since fixed costs are known in advance, involving no risk, the proportion of the tariff that covers them should not be indexed.

The payment mechanism should include arrangements for changing the price of service to prevent the service charge from becoming insufficient to meet the project’s operation costs and financial obligations for reasons beyond the private-sector party’s control. Inflation indexation is typically a low-cost device to implement price variations.

In using inflation indexation, two important issues should be taken into account. First, the contract should specify the price index to be applied. In choosing between a general price index or an industry-specific price index, the public-sector party should consider a trade off. On the one hand, a general index like the retail price index is available at low cost, but it leads to price adjustments that fail to track the relevant cost changes to the extent the general price variations do not mimic the changes in the private-sector party’s non-controlled costs.

On the other hand, an industry-specific price index may properly reflect the relevant cost changes, but it is costly to elaborate and its variations could be heavily influenced by the private partner’s own price when the market structure is concentrated.

Second, the contract should determine the proportion of the tariff or unitary payment to be indexed. In this regard, it is a good practice to apply indexation only to the proportion of the service charge that matches the proportion of variable costs in total costs. This provides the private sector with a proper hedge against non-controlled costs without distorting incentives. Accordingly, it is not advisable to over-index service charges, i.e. to index the whole price of service aiming at reducing the initial bid price of the private partner.

5.4.1.2 Price reviews, market testing, and benchmarking

Provisions could also allow for a periodic price review taking place once during a certain specified period of time, say every three or five years.60 These reviews are useful to adequate tariffs or unitary payments to long-run changes in the private partner’s

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60 In LAC countries, the duration of regulatory lag is usually 5 years (Guasch, 2004).
uncontrolled costs, e.g. technological progress modifying the cost structure, introduction of new inputs whose prices are not tracked closely by the available indexes, etc.

The ‘value testing’ provision, for instance, establishes how to adjust prices periodically according to the evolution of the costs of service provision. In ‘value testing’ procedures, information on costs is collected directly, so implementing the procedures involves higher transaction costs compared to a simple, mechanic inflation indexation. But there is an important advantage: an adjustment of service charges based on accurate, specific information on costs closely tracks the private partner’s uncontrolled costs, and thus provides incentives to control costs and properly select suppliers.

In practice, the main procedures conducted to test value are ‘market testing’ and ‘benchmarking’. The ‘market testing’ aims at ascertaining the market value of the main inputs involved in providing the service through a re-tendering among potential suppliers of these inputs. The information collected is used in the price review for tariffs or unitary payments. In the ‘benchmarking’, information on market prices of inputs is gathered to compare the private partner’s costs and adjust prices.

‘Market testing’ and ‘benchmarking’ are useful procedures for soft services when there are competitive markets providing comparable data. In contrast, to the extent that markets are concentrated, the current supplier is unlikely to be undercut by other competitors. Furthermore, these procedures are vulnerable to collusion between the private-sector party and the supplier, where the supplier could choose not to participate (or make a good offer) in the tendering process in exchange for a monetary reward from the private-sector party. Thus, the price review may simply update tariffs or unitary payments according to the current suppliers’ prices (HM Treasury, 2007).

When value testing procedures were implemented in the UK, they proved to be a lengthy process taking around 2 years to be completed, and some difficulties arose in finding suitable benchmark data to compare with.

In implementing these procedures, a choice should be made on when price reviews and testing will take place. In fact, a trade off exists regarding the length of the regulatory lag. If the first review is planned to occur in an early phase of the project, a potential operator could bid aggressively, offering a low tariff and expecting the review to increase it soon after the contract is awarded (this kind of incentive distortion arising from expected contract revisions will be discussed in detail in section 5). On the other hand, if there is a lengthy period before the first review, the private-sector party is largely exposed to the risk of misalignments between the initial fixed price and the operation costs, and thus it may require a higher service charge level (HM Treasury, 2007).

Along with mechanic indexation clauses, the contract may include value testing procedures, i.e. market value and/or benchmarking, since without a periodic testing the

\[61\] To address the problem of concentrated markets, a ‘benchmarking’ procedure could be conducted using cost information of comparable firms in other regions or countries, or cost estimates resulting from a simulated model that formalizes the behaviour of a hypothetical efficient firm. In practice, a model of an efficient firm is used to regulate the electricity sector in Chile (Kerf, 1998; Di Tella and Dyck, 2002) and Peru (Guasch, 2004).
private sector may want to ensure itself against unexpected cost variations by increasing the bid price. Allowing the price of service to be reviewed according to market prices, value testing procedures limit the uncertainty faced by the private partner and give it an opportunity to raise prices when un-controlled costs increase. Besides, these procedures enable the public-sector party to benefit when market prices fall.

Even when market testing is included in the contract, the public sector should be able to undertake a benchmarking procedure. This is the case when, for example, the market testing procedure fails because of the lack of any bidder other than the incumbent. Similarly, provisions for market testing should be included even when the most appropriate test is thought to be benchmarking. This is the case when, for example, there is no available information or the price adjustment was not agreed.

The contract should specify the frequency of value testing exercises. Generally, value testing is conducted every five or seven years, but in some cases it may be appropriate to undertake the first testing exercise after a longer period of time. The longer initial period aims to ensure bidders do not deliberately set a low initial price which they could raise in the first price review. On the other hand, the public sector may be exposed to an excessive risk premium if the initial period is too long.

Value testing may be not appropriate for all types of service. Market testing and benchmarking are primarily aimed at ‘soft services’, i.e. facility management services such as catering and cleaning, where there is no significant capital outlay involved in providing them. Accordingly, these procedures are not suitable for ‘hard services’, i.e. services where the private-sector party is responsible for the maintenance of the facility and incurs in capital costs, since the price of the current private partner is hardly comparable to the price offered by a bidder that has not incurred in such capital costs.

Moreover, value testing may not be appropriate when the provided services are specialized and only one or two companies supply them. In particular, for the potential benefits of market testing to be realized, there should be strong competition between service providers, and the public-sector party should keep the market active and competitive, e.g. by informing suppliers about future bidding opportunities. Value testing procedures can be a lengthy process and difficulties may arise in finding suitable benchmark data for a comparison purpose.

5.4.1.3 Tariff regulation and price adjustment clauses

In practice, price adjustment clauses are an important element in the tariff regulation for services where the private partner’s revenues result from charging final users. If the price review is frequent and the price adjustment is backward-looking, i.e. the regulatory lag is small and past changes in costs are considered to compute a new tariff level, the private-sector party has little incentive to undertake cost-reducing efforts. This is so because, if the private-sector party anticipates that any cost reduction in the present will lead to a tariff reduction in the future, it may prefer not to exert cost-savings
efforts. The literature refers to this incentive distortion phenomenon as the ‘ratchet-effect’ (Milgrom and Roberts, 1992). The situation is the opposite when the regulatory lag is large and the price adjustment is forward-looking, i.e. expected future changes in costs are considered in tariff determination. In this case, the private-sector party do have incentives to undertake cost-savings efforts because it can reap the benefits from lower than expected costs until the next price review (Laffont and Tirole, 1993; Armstrong et al., 1994).\(^{62}\)

In the review, the tariff cap should be adjusted by inflation and efficiency gains in a forward-looking way, i.e. using expected values for inflation and productivity growth, so that ratchet effects are avoided. By introducing a forward-looking price indexation, the regulator attempts to compensate the private-sector party for expected costs overruns outside its control. And by subtracting expected efficiency gains, a transfer is made to consumers through a lower relative price of the service. In addition, excessive profit-making by the private-sector party is deterred; to be precise, the private partner appropriates additional benefits to the extent that cost-savings efforts increase efficiency above the expected level already discounted in the current tariff.\(^{63}\)

### 5.4.1.4 Price adjustment and strategic behavior (gaming)

To the extent that price reviews use costs information provided by the firm itself, the firm has incentives to misreport its costs and to manipulate the information provided in such a way that the subsequent price adjustment favors it. In the literature, this is known as ‘strategic behavior’ or ‘gaming’. In practice, there are a number of gaming actions. For instance, firms having private information about costs can either report them truly or make ‘creative accounting’ shifting cost across periods and categories, e.g. cost padding. ‘Creative accounting’ allows for information manipulation, but it may involve costs for the firm since it has to manage at least two parallel accounting books (Laffont and Tirole, 1993)

As we have seen, in ‘value testing’ procedures, the public-sector party makes an effort to collect information on costs directly from markets trading the main inputs. But under certain circumstances, even these procedures are vulnerable to gaming. For instance, when the market is highly concentrated and a simulated model is used as a benchmark, it is likely that the information needed for model calibration is heavily influenced by the costs of the very firm. Thus, the firm could game the public-sector party providing distorted information that leads to price adjustments favorable to it.

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\(^{62}\) In practice, however, ‘expected’ costs tend to be computed using projections based on historical costs, so the line dividing forward- and backward-looking tariff determination blurs.

\(^{63}\) From this observation, an implication is derived for choosing the optimal regulatory lag in a price cap regulation. A trade-off arises when a lengthy lag is considered: on the one hand, the private-sector party has incentives to undertake cost-reducing efforts because it might exceed the expected efficiency gains; on the other hand, there is a higher probability of allocative inefficiency arising from the excessive profits that will be observed if the private-sector party actually exceeds the expected efficiency gains (Armstrong et al., 1994).
This problem is well known in privatized industries under by price cap regulation, where the adjustment of the cap requires information to estimate prospective efficiency gains. Benchmarking in regulated sectors is vulnerable to gaming because these sectors are typically concentrated markets. Thus, since there is a small number of firms reporting information, the probability of each firm’s reports influencing the future price caps is high.

Di Tella and Dyck (2002) document a case of gaming in the Chilean electricity sector. The authors observe a U-shaped pattern for the reported costs-to-revenues ratio in the 4-year periods between cap reviews. Reductions in the ratio reached 1.2% a year, and were reverted in the years prior to regulatory reviews. The authors show that the strongest reported cost reductions occur early in a regulatory period. But, on the basis of stock market information complementing the costs and revenues reported to the regulator, they argue that firms may have shifted the incurred costs towards the end of the regulatory period by engaging in ‘creative accounting’. Firms had incentives to do so as long as they expected the high cost level reported at the end of the period to justify a higher price cap in the next review. In other words, firm had a long time to benefit from cost reductions, and revealed cost later in an attempt to influence future price caps, gaming the system.

5.4.2 Flexibility

Several recent reports on PPP contracting highlight the need for enhanced contractual flexibility, in particular aimed at taking into account possible changes in user needs that – in the presence of rigid contracts - have sometimes triggered very costly contract renegotiation processes. Enhanced flexibility, in particular directed to accommodate changes in user needs, is important for the long-term projects typical of PPP, and may be achievable through well designed change-management contractual clauses necessary to limit potential abuses. However, enhanced flexibility will inevitably come at the cost of lower predictability and higher risk for the investing private-sector party, and of reduced effectiveness of the competitive selection process.

Below we briefly discuss the trade-offs between flexibility, investment protection and predictability, and contract renegotiation. We then discuss the risks that large post-award contractual changes and renegotiation in general pose on the effectiveness of the procurement, and the consequent need to limit and structure such processes as much as possible. We conclude discussing how contract design can help in minimizing the costs arising from contractual flexibility. This section will not focus on how contract duration can be limited in order to enhance flexibility (on this, see Section 6), nor on anticipated changes in payments such as tariff indexation (on this, see Section 4).

Contract design should build flexibility into the contract so as to limit as far as possible the need for contractual changes.

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64 See e.g. HM Treasury (2006, ch.5).
Flexibility/change needs are often classified as being anticipated or not at the contracting stage. **Anticipated changes** include, for example, potential changes in quantity/capacity of the output specified in the contract, for example, caused by an unexpected demand increase. In a road project, the amount of street lights required may change over the years with unanticipated changes in urban development of some areas.

At the contract drafting stage, a substantial investment in contract design should be undertaken to anticipate the possible changes that may be required with reasonable likelihood, and to **describe and regulate** all these changes in the original contract. This will create built-in contractual flexibility while reducing as far as possible the need for contract changes/renegotiation.

If the anticipated changes involve mainly changes in the amount of output, they can easily be pre-specified in the original contract and become integral part of the bids in the initial competitive selection process. Similarly, any other anticipated change that can be foreseen in its precise form, should be pre-specified as conditional output in the initial contract and be part of the initial bid, so that the potential changes are efficiently priced at the competitive stage (in the street light example, a unit price for additional lamp or kilometer of road enlightened could be in the contract). The weight to assign in the selection process to the terms relative to anticipated potential changes should then be proportional to the likelihood and the value of these changes.

In the some (rare) cases the need of potential change is anticipated but such that the exact form of the change is not clear, so that it is not possible to pre-specify the change in the original contract to have it priced at the competitive stage. If these anticipated changes are small in size and need to be operated swiftly, provisions could be inserted in the contract establishing that the private-sector party will have to implement the changes required by the public-sector party, within certain limits, and that compensation for the extra costs will be paid. Consideration should be given to the possibility to specify in the contract that the compensation will be on a **cost reimbursement** basis, with a contractual obligation to ensure value for money for the public sector. Compensation will also allow for a mark up on the costs that should not be subject of bidding in the contracting stage as competition on mark ups of cost-plus contracts tends to have counterproductive effects. The profit **mark up** on changes operated under cost-reimbursement compensation will be chosen ex ante, according to standards of profitability in the sector and with the advice of external experts, and will be pre-determined by the contract, hence remaining fixed whoever wins the competitive phase.

The obligation of ensuring value for money for the public sector must be backed by **benchmarking** on both the definition of the mark up and on the following cost assessment that the private-sector party provides after a change is required, before approval of the changes, to ensure that mark up and projected costs are at market level. In this cases a **third party** – like a panel of expert – should also be involved in the process of approval of the cost of changes before implementation, to prevent abuses of the flexibility created by cost-reimbursement scheme.
More flexibility may still be needed along the development of the project than what is achievable through anticipated change clauses, so that a limited number of exceptional contractual changes should be admitted. Contract design can limit the possibly large negative effects of post-award contractual changes aimed at facing unanticipated change needs - discussed in the accompanying paper - by inserting contractual clauses that limit and structure contract renegotiation.

In particular, to ensure maximal transparency, the contract should define a detailed change protocol, that should precisely structure the process through which any proposed change is requested, assessed and, if eventually approved, implemented.

Small changes, e.g. linked to adaptation to particular user needs, should not require changes in payments but be covered by the provision of original contract and they may follow a faster procedure. For large changes that require pricing, transparency and value for money for the public sector become essential.

Transparency of the contract change process must be guaranteed by contractual clauses requiring full and proactive disclosure of all acts at all stages of the change protocol.

Transparency and accountability of changes should be further stimulated by involving an independent third party, an arbitrator or, better, panel of technical experts, as supervisor of changes and responsible for the governance aspects of changes. Their approval could be asked also in terms of real needs for the changes and appropriateness of the decided changes and their pricing. In case of changes required by the private-sector party and implying revision of prices, the change protocol should require the third party and the public sector to ascertain and publicly explain that the shock motivating the request for change was not an event part of reasonable business risk that a competent private partner would have anticipated and priced in the initial bid. (The cost of forecasting/bidding mistakes should be born by who makes them as far as possible).

In particular, as suggested in the Section 4 of these best practices for other contractual issues, the motivation behind the initial choice of mark up, and that behind the decision to ask for a change and the decision to approve the binding cost assessment presented by the private partner for the change (including the benchmarking exercise and the opinion of the third party) should be made public, posting them uncensored on the homepage of the PPP, within a pre-specified and short term after the approval.

Value for money of approved changes in prices should be ensured by contractual clauses requiring any such price change to be subject to a market value test, in terms of benchmarking or full market testing (new competitive tendering).

The contract should also establish a freeze period, the longer the larger the relative weight of the construction phase in the PPP, and possibly longer for demands for contract changes coming from private partners. The rigidity induced by such contractual clauses will deter opportunistic renegotiation, which typically expects revisions of terms
much earlier, stimulate investment in in-built contract flexibility, while leaving open the possibility to accommodate efficient changes later on, when it is more likely that substantial unanticipated changes in technology or demand took place that effectively require contractual changes.

Finally, the contract should establish substantial fees to accompany private partners’ demand for contract changes; these should be withheld in case the demand for contract change is rejected as unfounded. This would deter frivolous demands while leaving open a channel for serious ones.
PPP procurements often develop along a long time horizon, 25-30 years or more. In such long period many things can change, so that there is a need for flexibility and adaptation of the contractual relationship far greater than in a more standard type of procurement. Some of the possible changes can be anticipated, in which case they may be specified in and regulated by the initial contract (e.g. changes in capacity). Other possible changes, however, may be hard to specify in the original contract, or may be totally unexpected (e.g. new incoming technologies that change substantially users’ needs).

Contracts are legally binding instruments that prescribe a course of action the contracting parties agreed upon, and that make it costly for each party to unilaterally change that course (i.e. contracts make it costly to violate the promises they contain). Contracts, therefore, have the precise objective to reduce the parties’ ability to choose in the future, to ‘reduce their flexibility’, in order to increase the predictability of the future actions. This ensures that each party can better foresee what the other party will do, and so can act relying on that forecast rather than under a much higher uncertainty.

In particular, when a party must undertake non-contractible investments that are specific to the business relationship, a contract protects it by limiting the other party’s ability to ‘hold up’ the investing party asking for new terms of trade after the first party has committed its investment and is ‘locked in’ with the contractual relationship. Moreover, the benefits of competition between potential sellers/suppliers at the selection stage can only accrue to a buyer when the object of the competition – be it a good or a service - is well defined and cannot be easily modified after the competitive process is over. In procurement, in particular, a contractual definition of the procured good or service that is as clear and complete as possible, along with a strong and credible commitment not to change that definition after the contract is awarded unless extreme unexpected events occur, are essential requirements for a competitive bidding process to be effective in selecting the best supplier and offer at the efficient terms of trade (i.e., the so called ‘sanctity of the bid’ is crucial to the whole procurement).

Besides the benefits of generating certainty, fostering investments, and allowing for effective competition, the rigidity generated by contracts also brings about the costs resulting from reducing the parties’ ability to adapt to novel circumstances that could not be envisaged at the contract drafting stage. The costs of reduced flexibility are larger the less the contract itself is adaptable to changes in the environment, that is, the fewer possible contingencies have been anticipated, described and regulated by the initial contract; and the more the environment and the parties’ objectives may change in an unanticipated way along the contract life. An important trade off between the benefits from contractual protection and the predictability and costs of contractual rigidity is therefore present in any long-term transaction and is inevitable. The larger the investment required from the parties, the larger the benefits from contract rigidity relative to the cost of lost flexibility. As will be discussed in section 6 on contract duration, the longer the duration of a contract and the large the scope for unforecastable changes in the environment and the objectives of the parties, the larger the cost of lost flexibility relative to the benefits from enhanced predictability.
In PPPs, in particular, the large investment at the core of the project is the source of gains from contractual completeness and rigidity, while the long horizon for the service provision is at the root of the need for enhanced flexibility. This trade-off can be softened by increasing the initial investment in forecasting future contingencies (e.g. possible changes in knowledge or technology) and in describing and regulating them in the contract. That is, the flexibility/predictability trade-off can be attenuated by incurring in the cost of increasing built-in flexibility/adaptability of the contract. An example of this are the built-in adjustment mechanisms for tariffs and other payments, like the indexation clauses linking payments to price or cost indexes.

There are limits, however, to what a costly investment in a more complex, complete, and adaptable contract design can do to enhance flexibility, because the kind of built-in flexibility obtained by enriching a contract can only adapt to changes in the environment that are verifiable by a third party like a court. In particular, when the need for flexibility derives from changes in the contracting parties objectives/preferences, that are hard and sometimes impossible to verify by a court, then there is little more that a contract can do than allocating all authority to one of the parties (i.e. the right to decide what to do) and prescribing limits to what can be required to the other party and to cost-based compensation.

Of course, when substantial changes occur that make the original plan technologically or economically inappropriate, any contractual agreement can be modified by the mutual consent of the parties. Contract renegotiation is a (set of) change(s) in the original contract terms that is agreed upon by both parties and formalized by legally binding changes in the contract terms, and is an element that can always increase flexibility if the parties agree it is needed. However, contract renegotiation typically occurs in a very different situation than the original contract drafting and awarding did, in particular in a bilateral ‘lock-in’ rather than in a multilateral competitive situation. Because of this, contract renegotiation, as well as any analogous form of contractual change (modification or simply enrichment) taking place after the contract is signed, are subject to the risk of abuse either from the private partner (thanks to its now strong bargaining position) or from both contracting parties when one of them is a public entity managing third party money (see the section below).

Moreover, potential private partners’ expectation or even hope to abuse renegotiation tends to distort the functioning of the competitive selection process, thereby implying high costs in terms of wrong selection of supplier, projects, and terms of trade. Therefore, as we will argue, contracts need to be carefully drafted to prevent renegotiation and analogous contractual changes as far as feasible. In addition, when flexibility in terms of contractual changes is absolutely necessary, contracts need to be carefully drafted to prevent abuses through such contract changes, and more importantly, to prevent the expectation or hope of such abuses from potential private partners.

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65 Renegotiation may also include additional (complementary) contracting which completes and integrates the original contract.
5.4.2.2 More on the costs of abusing flexibility and renegotiation

Contract theory predicts that as long as the contract is complete, i.e. it specifies all possible contingencies and includes a full description of the renegotiation process, the contract will never actually need to be renegotiated (it is renegotiation-proof). This result does not depend on the ability of both parties to commit not to renegotiate the contract in the future, but in reality it is hard to imagine a complete contract, particularly for complex and long-lasting business relations. Renegotiation, therefore, cannot be excluded. When it is not abused, renegotiation is efficiency-enhancing and typically arises because the contract is incomplete to some extent, as not all possible future contingencies can be forecasted and regulated by the contract at reasonable cost.

The literature offers a number of reasons why contracts are incomplete and they cannot specify all possible contingencies. First, some circumstances that may affect the contract terms are not predictable ex ante, so unforeseen events cannot be incorporated in the initial contract. Second, there may be some non-contractible contingencies, either because they depend on non-observable variables, such as effort exerted by the private sector party, or because they are non-verifiable by third parties and thus cannot be enforced in court. Third, it may be too costly to write down clauses accounting for all possible events affecting the contractual relation, so the parties must decide which contingencies to include and which not, in order to save transaction costs. Fourth, economic agents may display bounded rationality, being unable to identify and order all the contingencies that are truly relevant for the contractual relation. In this regard, agents may learn along the contract period and rely on renegotiation or additional side-contracting to correct past decisions that turned out to be wrong or to complete aspects that were left unregulated.

In a context of incomplete contracts, and looking at it ex post, renegotiation is a ‘Pareto-improving’ mechanism to redress inefficiencies caused by incompleteness or mistakes. To be specific, renegotiation provides the parties with the opportunity to adjust the original contract terms when unforeseen events occur, agents learn more on project design, new information becomes available, etc. Thus, the higher the degree of contract incompleteness, the more likely renegotiations or additional side (complementary) contracting will occur.

Contract renegotiations are also affected by the interactions between project complexity, contract incompleteness, and features of the payment mechanisms. In this regard, Bajari and Tadelis (2001, 2006) argue that, in an optimal contract design, there is a trade off between the costs of ex post renegotiation of contracts with different payment mechanisms.

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66 Despite the fact that revisions due to unforeseen events allow for improving the contract terms, the negotiations may fail to accomplish this aim, and end up terminating the contractual relation. For instance, in a tender to manage a motorway in Hungary, a key variable in the award criteria was the tariff level required by the private partner. Thus, the DBFO contract was expected to allocate the traffic risk to the private-sector party. However, the award criteria induced excessively optimistic forecasts on traffic volume, and the private partner’s revenues happened to be half of what had been estimated. This led to litigation on tolls, suspension of investment and loan disbursements, and a default of the private-sector party debt. Both the concession and debt obligations were taken over by the public sector (European Commission, 2004).
mechanisms, and the ex ante incentives provided by these mechanisms. According to the authors, contract design costs are increasing both in the desired degree of completeness and in the complexity of the project to be implemented.

Consider two possible payment mechanisms for any given contract: a fixed-price and a cost-plus payment scheme. It has been discussed in section 4 that the fixed-price mechanism is a high-powered incentive scheme, but it makes renegotiations more costly: for the public-sector party, locked-in by the well specified contractual obligations of fixed-price contracts; and in general, because asymmetric information and haggling over prices cause efficiency losses. In contrast, the cost-plus mechanism is a low-powered incentive scheme, pushing less towards cost-efficiency but facilitating contract revisions because the public-sector party reimburses any cost increase resulting from changes in the contract terms. Hence, when choosing the contract design, the public-sector party faces a trade-off between providing incentives to reduce costs (in fixed-price) and facilitating efficient contract revisions and information sharing (in cost-plus).

In this context, the authors characterize the optimal contract design. A fixed-price payment is optimal for a project of low complexity that has a design with low degree of incompleteness, and where renegotiation is less likely. In other words, when the project is not too complex and/or uncertain, it is better not to save on design costs and write a more complete contract; as a consequence, renegotiation is less likely, allowing to take advantage of the fixed-price mechanism in terms of incentives.

On the other hand, a cost-plus payment is optimal for a project of high complexity and subject to high uncertainty that has a design with high degree of incompleteness, and where renegotiation is more likely. In other words, when the project is highly complex, it may be better to save on design costs and write a less complete contract; as a consequence, renegotiation is more likely, but the cost-plus mechanism ensures it won’t be too costly.

Despite the benefits of contract renegotiation in terms of improving the original contract terms ex post to cope with unforeseen events or to introduce learning, there are many undesirable outcomes that typically arise when revisions take place or are expected in a context of imperfect enforcement and opportunistic behavior by the contracting parties, including rent-shifting activities, politically-motivated investments and corruption. All these negative effects, even if only anticipated, tend then to distort bidding behavior during the private partner selection phase and thereby to generate an inefficient selection of private partners and terms of trade (overly aggressive bids).

### 5.4.2.3 Incentive Distortions

Whilst in the previous section we have highlighted the ‘Pareto efficient’ side of renegotiation, it is important to note that renegotiations can have negative consequences on ex ante efficiency because, when the private-sector party anticipates future contract revisions, it faces distorted incentives and misbehaves in the tendering process. This line of reasoning is akin to the soft budget constraint problem (Kornai, 1986; Rajan, 1992; Dewatripont and Maskin, 1995), which may also lead to inefficient project being financed.
The literature on soft budget constraint (SBC) helps in identifying negative effects of recurrent, and thus expected, contract renegotiations on the private partner’s incentives and risk exposure. The original formulation of the SBC problem by Kornai (1979, 1980, 1986) was developed to explain the survival of persistent money-losing state-owned enterprises in socialist and transition economies. The interpretation of SBC as a dynamic commitment problem, due to Dewatripont and Maskin (1995), asserts that entrepreneurial incentives are distorted by the managers’ belief that the public sector will bail out firms in the future if they fail or underperform. This belief is supported by an objective fact: it is often in the interest of the public sector to rescue firms to avoid the social costs of investment project termination. Ex ante, the public sector should commit not to bail out firms in order to get entrepreneurial incentives right and to discourage entrepreneurs from undertaking bad investment projects. However, such a commitment is not credible because ex post the public sector will do better by bailing out all bad projects already undertaken. Thus soft budget constraint may lead to more bad projects being financed.

The SBC problem provides an insight to account for the pattern of PPP renegotiations in LAC countries. According to the empirical evidence reported below, concession revisions changed essential contract terms and tended to benefit the private partners by reducing or rescheduling investment requirements, increasing tariffs, granting subsidies or tax exemptions, lengthening the contract duration, etc. Ex ante, private partners expecting future renegotiations to favor them face weak incentives to perform, to reduce costs, to improve quality of service, and to innovate. In addition, they enjoy a de facto low exposure to risks leading to financial disequilibrium. For these reasons, ex ante a benevolent public sector wishes to commit itself not to change the original contract terms in the future, at least not in a way that simply benefits the concessionaire and do not address Pareto-improving issues resulting from contract incompleteness. But the public sector’s threat of no-renegotiation may be empty to the extent that, ex post, the public sector prefers to rescue the firm and avoid contract disruptions. Under these circumstances, the private partners’ expectative on future contract revisions is strong, and thus incentive distortions and risk misallocation arise at the outset.

Furthermore, renegotiation brings about a cost in terms of commitment loss: if abused in the past, the public sector’s reputation may be ruined, and this can reduce the incentive power of future contracts and distort competition in future tenders.

There are a number of reasons why ex post the public sector may prefer to support a concessionaire calling for a contract revision. For instance, if an unfavorable event occurs and the private-sector party undergoes financial stress, it could threaten to abandon the concession unless the public sector accepts to change the original contract terms.\(^67\) The

\(^67\) There are cases in which the public-sector party refused to renegotiate the contract terms precisely because the bidding behavior of the private partner seemed to be strategically aggressive. For instance, in a tender to provide water services in Buenos Aires, a key variable was the lump-sum fee due to the provincial public sector. The winner offered to pay a fee 18 times larger than the strongest competitor’s, but soon after awarding the concession it sought to renegotiate the contract terms. Cross accusations of non-compliance led the public sector to refuse revising the original contract terms. Then, the private partner abandoned the
concessionaire’s threat is effective when it has an informational advantage in the operation of infrastructure and the provision of service that renders it difficult to substitute, or when its sunk costs and specific investment are not large, so its losses are not heavy if it leaves the concession.

On the other hand, the public sector’s bargaining position is weak when arranging a re-tendering to select a new private operator involves time and large transaction costs, even more when the market structure is not competitive and few operators are ready to take over the concession (Kerf, 1998). Thus, a public sector refusing to renegotiate takes the risk of suffering disruptions in the service provision when the private-sector party abandons the concession. Therefore, the public-sector party is likely to accept the private partner’s demands regarding changes in the contract. 68

5.4.2.4 Bidding distortion

So far, the discussion has focused on the negative effect of anticipated renegotiations on the private partner’s incentives to perform and risk exposure, assuming that it has already awarded the concession. Thus, expected contract revisions create a moral hazard problem. But it is clear that renegotiations also distort the private sector’s bidding behavior in the initial tendering process, i.e. they create an adverse selection problem. To the extent that firms bidding in the tendering anticipate that a contract revision could be called for later, they do not deem the original contract terms proposed by the public-sector party as binding commitments. Hence, bidders seek to win the concession at any cost, regardless of what the current contract terms are. To maximize the probability of being awarded, bidders have incentives to bid aggressively, offering low tariffs or high transfers to public-sector party, ambitious investment plans, etc. Once the concession is granted, the private-sector party calls for a renegotiation to change its formal contractual commitments. 69

concession and the public authorities reassumed responsibility for providing water services (Guasch, 2004). Another case is the electricity distribution privatization in Peru. The public authority sold 30% of the state-owned enterprises’ assets to the private sector, planning to divestiture the remaining assets in subsequent phases. The winning bid exceeded the other competing offers by such a large amount that some analysts estimated that current tariffs would be insufficient for the private-sector party to recover its initial investment. After winning the privatization, the private partner requested both a tariff increase and a valuation of her assets based on the large amount she had paid in the privatization. Since regulators refused to change the established valuation criteria, the firm refused to purchase an additional 30% of shares and sued the public sector for breach of contract. Subsequently, the public sector regained control of the distribution companies (Guasch, 2004).

68 Outright political affiliation between the public sector and the concessionaire also explains the willingness of the former to favor the latter in a contract revision. In fact, contract revisions were observed in sectors like highways where the private-sector party did not have an advantage in terms of know-how, and thus could have been replaced at no significant costs for the public sector, i.e. there was no information-related hold up problem (Engel et al., 2006).

69 The case of the Lima airport illustrates an aggressive bidding under expectations of a future renegotiation. In the tendering process, a key variable was the percentage of gross revenues to be transferred from the private-sector party to the public-sector party. The winner consortium submitted a very attractive bid whose financial viability was questionable: it offered to transfer 47% of revenues and to undertake an ambitious investment plan. But after winning the concession, the consortium demanded a
Interestingly, a high degree of competition in the tendering process may worsen the negative effect of anticipated renegotiations on bidding behavior. If a private operator faces strong competition in the tendering, it will bid very aggressively to undercut the competitors and win. Next, if the operator wins offering very generous terms for the public sector, it is more likely to seek for a renegotiation. Guasch (2004) reports empirical evidence on concessions in LAC countries supporting this point. Most of the contracts were awarded through competitive bidding (78 %), and a few through direct adjudication and bilateral negotiation (22 %). Among the concessions awarded by competitive bidding, 46 % were revised at least once. In contrast, only 8 % of the concessions awarded by non-competitive procedures underwent renegotiations.\(^70\) Hence, competition in a tendering process might have induced aggressive, financially-unsustainable bids by the participants, and thus made it convenient for the winner to revise contracts afterwards. On the other hand, bilateral negotiation in non-competitive procedures might have granted favorable terms to the private partner, ruling out financially-unsustainable proposals but allowing for corruption and rent-seeking, and thus lessened the incentives to call for a concession renegotiation.\(^71\)

It is noteworthy that competition and market structure have different effects on the contract renegotiation issue. On the one hand, higher competition in the renegotiation stage increases the bargaining power of the public sector, making it more able to resist unacceptable proposals backed by the private partner’s threat of contract termination. Hence, since contract revisions that simply benefit the private-sector party are less likely to happen, competition reduces the incentive distortion created by renegotiations (Segal, 1998).

On the other hand, it was argued lack of competition might rule out aggressive bids that are financially doubtful, thus decreasing the probability of a future renegotiation that aims precisely at benefiting the concessionaire (Guasch, 2004). In this sense, someone would think that competition may increase the incentive distortion. But it is likely that it is not competition that generates more renegotiation but the lack of guarantees and weak enforceability of contracts, which leads to expected renegotiation and distortive behavior in the bidding stage.

### 5.4.2.5 Enforcement problems, rent-shifting and corruption

From the incomplete contracts perspective, renegotiation is beneficial for both parties because it allows them to correct inefficient outcomes that would arise because of

\(^70\) The figures exclude telecommunications concessions.

\(^71\) The case of water concession in Cochabamba (Bolivia) illustrates why bilateral negotiation involving political affiliation reduces the probability of renegotiation. The Aguas del Tunari consortium was the only bidder in the tendering. Since the local partner in the consortium was owned by one of the most influential men in Bolivia, Aguas del Tunari awarded the concession despite omissions and irregularities in the tendering process. The contract entitled the private partner to a 15 % return for 40 years guaranteed by the public sector, so there was little incentive for the concessionaire to change the contract terms (Lobina and Hall, 2003).
contract incompleteness, i.e. they can make mutually advantageous deals on issues not envisaged before. But the previous discussion on SBC has emphasized that anticipated renegotiations distort incentives ex ante, and that the bargaining power of both parties affect the outcomes resulting from a contract revision. In particular, it has suggested the threat of concession termination by the private partner could back demands for new contract terms that only benefit it and have nothing to do with correcting inefficient outcomes. Indeed, fearing disruptions in the service provision, the public sector may end up satisfying the private partner’s demands.

The risk that the private partner abuses renegotiation increases with the existence of enforcement problems. If the public-sector party finds itself unable to force the private-sector party to meet the original contract terms, it can hardly oppose a change in these terms required by the private-sector party, no matter how unacceptable the change could be from the public sector’s perspective (provided that this new contract terms are enforceable). Thus, the renegotiation may entail a rent-shifting benefiting the private partner, who calls for the revision aiming to exploit the public sector’s inability to enforce the original contract (Guasch et al., 2006). Moreover, the lower is the enforcement, the higher is the probability of shifting rents, and thus the stronger is the incentive for the private-sector party to call for a contract revision.

Beyond enforcement problems, the public sector may lack transparency and accountability, thus providing incentives for corruption (Lobina and Hall, 2003). It was argued the quality of enforcement is negatively related with the level of corruption, which also affects the probability of renegotiation (Guasch, 2004). Corruption may be related with illegal payments made by the private-sector party. Bribes aim to align the public sector’s interest with the private partner’s rather than to the public interest. As long as the private-sector party believes the public sector can be bribed, it will bribes in order to increase its chances of appropriating rents in a contract renegotiation. Hence, lack of public accountability mechanisms alters the bargaining relationship in renegotiations, while corruption opportunities distort the parties’ behavior.

5.4.2.6 Political interests

Letting aside the mutual gains resulting from completing the original contract terms, the arguments of SBC and imperfect enforcement emphasize it is the private partner that benefits from the contract revision, thus suggesting it has strong incentives to call for the revision.²²

However, in the study of Guasch, Laffont, and Straub (2006), almost two-thirds of the concession renegotiations were initiated by the public-sector party, and most of them took place in periods surrounding elections. Consistently with these facts, a number of political motives have been proposed in the literature to explain the interests of the

²² In the SBC argument, the public sector’s gain results from avoiding the costs of a concession termination.
public-sector party itself in revising PPP contracts. Naturally, renegotiations involving political interests are likely to go far beyond contract incompleteness issues.

For instance, a government wishing to increase its chances to be re-elected may seek for financing investment and expenditure in public works that create jobs and boost economic activity. Facing fiscal or political constraints to expand spending, the government may attempt to get private partners to do it (Guasch, 2004). In a regular budgetary process, issuing public debt to finance additional spending requires approval from the opposition parties, which may block the public sector’s spending plan if it reduces their own electoral chances. Thus, instead of negotiating with the political opposition, the public sector may prefer to call for PPP contract revisions and increase the investment requirements to be financed by private partners (Engel et al., 2006). Since these renegotiations are not included in the regular budgetary process, the government circumvents the opposition’s scrutiny and reaps the political benefits resulting from higher present spending, e.g. a higher probability of being re-elected. Private partners, on the other hand, may obtain better contract terms, higher user charges, revenue subsidies, an extension in the contract duration, etc. 73

In the short-run, both the public and private partners benefit from politically-oriented renegotiations, but the resulting bias towards over-spending in the present may imply an intertemporal resource reallocation that negatively affects social welfare. In this context, ensuring the public sector is accountable to the Parliament or independent oversight agencies for the PPP agreements it negotiates would help to reduce opportunistic behavior leading to politically-oriented contract revisions. Beyond the accountability issue, the public sector agency running a concession program should be given appropriate incentives. For instance, if the agency is part of the ministry of public works, whose purpose is naturally to build new projects, it will probably attempt to expand the public works program (Engel et al., 2006).

5.4.2.7 How contract design can help to maintain flexibility while limiting abuses

As the discussion above emphasizes, while there is a clear need of maintaining flexibility in time to deliver what is really needed at that time, there is also a clear need to structure

73 Engel et al. (2006) describe two types of concession renegotiation often used in Chile to anticipate spending: the public sector changed the contract terms to obtain additional works from the concessionaire, or both parties exchanged an ‘insurance premium’, i.e. the private-sector party made an upfront cash payment and was entitled to a potential concession extension. Twelve out of the sixteen highway projects awarded by 1998 were revised in the following five years. The revisions required the provision of additional infrastructure, increasing 15% the value of the original investment plans. Renegotiations set the so-called ‘complementary contracts’ which were agreed bilaterally and without public review. Since Chile had undergone a recession in 1998-2002, traffic flows grew less than expected, and tax revenue were insufficient to undertake public works. Concessionaires were granted a public sector guarantee for the toll revenue that would have collected if traffic had grown at certain annual rates during the contract life. Should actual revenues increase below such rates, the concession would be lengthen by up to almost 10 years and the public-sector party would pay the remaining difference. Thus, the renegotiation proposed an asymmetric variable-term contract to replace the original fixed-term contract. Concessionaires, on the other hand, had to pay an ‘insurance premium’, around 8 % of the guaranteed revenue, in the form of additional investments. Thus, the public sector engineered an intertemporal transfer, receiving additional current infrastructure in exchange for a guaranteed income that future administrations would pay.
this flexibility so as to limit as far as possible the potentially very high costs it may imply, particularly if abused. As a general principle, therefore, post-award contractual changes should be avoided as far as possible; they should be rare and exceptional events, particularly when changes are requested by the private-sector party.

One general and somewhat obvious principle of contract design that may help to soften this trade off is trying to build in the original contract clauses for all anticipated potential changes. This sums up to try ‘making the contract as complete as possible’, taking into account the cost of writing a complex contract that details many possible contingencies from which only few will effectively realize. A contract that regulates ex ante anticipated potential changes produces a sort of built-in flexibility that reduces the need for contractual changes and is not subject to most of the downsides of renegotiation discussed earlier.

If the anticipated potential changes can be properly specified in terms of output, then the price of these changes may already be established at the initial competitive selection stage. If they cannot, then clauses dealing with contractual changes should determine cost-based compensation for the changes (as in cost-plus contracts).

Although investments in contract design that regulate potential changes are welcome, a complete contract is not something one can aim at in a 30-year long procurement relationship. The complexity and long-term horizon typical of PPPs are bound to make any such contract incomplete and subject to requests for changes linked to unanticipated events. Even the contractual provisions for anticipated changes may easily become obsolete over time, and their adaptation may become necessary in the light of unexpected major technological changes. In this context, post-award contract changes, renegotiation, and contract completion can be efficient means to address issues arising from contract incompleteness, and so they should not be ruled out. The challenge for contract design is then to identify and support efficiency-improving contract revisions.

To the extent that a revision may lead to ex ante undesirable outcomes, such as rent shifting and politically-motivated investments, there is a case for the design of contracts that explicitly foresee future renegotiations and pre-emptively establish principles and procedures to rule the revisions if the parties call for them. Let us call them ‘bad renegotiation’-proof contracts. The literature provides useful insights on how contract design can ensure that future renegotiations will contribute to achieving the PPP objectives. Contract design can do something about renegotiation (influencing its occurrence and outcomes) not only because it can directly affect the contract characteristics determining the degree of incompleteness and the likelihood of revisions (as documented by Guasch et al., 2006), but also because it can require compulsory and structured renegotiation processes that limit the scope for abuse.

In this regard, the initial PPP contract should already address as clearly as possible:

(i) the circumstances that justify tariff and output adjustments,
(ii) when and how to implement benchmarking and market testing to test the value for money of the proposed changes,
A basic and somewhat obvious criterion often advanced to deal with contract changes required by the private-sector party is linked to the size of the shock leading to the proposed changes. Small unexpected shocks are unlikely to constitute a real threat to the financial stability of the firm. Thus, small shocks do not justify the costs and risks linked to a contract revision. Very large unanticipated (hence exceptional) shocks, instead, may threaten the financial stability of the firm in such a way that - unless a contractual change is introduced - the private-sector party may not be in a position to continue fulfilling its service obligations.

As mentioned earlier, under these conditions renegotiation often occurs in reality, particularly if the cost of service disruptions is considered large. However, one also has to be sure that the shock is really unanticipated, exceptional, and independent of the private partner’s efforts before going for a costly bail out of a failing private-sector party through renegotiation, rather than going for its replacement. The risk, again, is disrupting the whole procurement process by favoring private partners that are unable to anticipate shocks or to act so as to minimize their impact, i.e. less able private partners, and by selecting their overly aggressive offers – which are probably cheap because they do not anticipate well the possible shocks – rather than more appropriate and expensive ones.

Another basic principle is that, given their negative effects on governance and efficiency, renegotiations should be extremely open and transparent procedures. To improve on transparency, the contract may envisage calling a third party, e.g. an arbitrator, an independent commission, or a group of experts, to evaluate the case and seek to conciliate the needs of both parties without too much harm for the taxpayer. To limit discretion and disagreement the contract may also provide a limit as to the amount that can be renegotiated without calling for a new tendering process.

Problems such as rent shifting and politically-motivated anticipated spending, i.e. problems that arise from weak enforcement, political interests, and failures in the regulatory environment, are probably beyond the range of influence of the contract design. However, the contract design should manage efficiently the risks resulting from these problems, e.g. regulatory risk resulting from weak institutions, cost overruns and financial risks resulting from macroeconomic shocks as we discussed in section 3.

It is noteworthy that some of the regulatory and institutional factors are not outside the range of influence of the institutions ruling- and agencies implementing PPP agreements. Thus, certain actions can be taken to address some of the problems distorting renegotiations outcomes, i.e. leading to ‘bad renegotiations’. For instance, improving skills of regulators, ensuring the agency negotiating PPP contracts do not depend on the ministry of public works, etc.

5.4.2.8 Dispute resolution
Since contracts are incomplete and disputes may arise on interpretation or technical issues, the contracting parties could agree to specify clauses on dispute resolution mechanisms to handle these disputes. A dispute resolution procedure properly described in the contract (e.g. arbitration) is likely to be faster and less costly than going to a court to settle a controversy. Besides, a contract design allowing for dispute resolution procedures helps in mitigating the regulatory risk faced by the private-sector party, and thus reduces both the cost of capital and the cost-covering service charge level (Guasch, 2004).

As service disruptions can be very costly to the public-sector party, the speed of the dispute resolution mechanism plays a critical role. A sluggish mechanism could indeed be a disadvantage for the public-sector party if the dispute risks compromising the continuation of the service provision. Further, the private-sector party would benefit as well from a fast dispute resolution process since PPP contracts generally involve a large financial commitment and protracted disputes might create excessive financial distress.

Alternative dispute resolutions have also the advantage that the arbitrator (or conciliator, etc.) may be selected among experts in the field, which is helpful since PPP contracts often require sector-specific knowledge. However, it is desirable to avoid that the parties appoint the arbitrator themselves, since, as discussed by Iossa (2007), dispute resolution mechanisms where the decision maker is appointed by the parties in dispute may exhibit a decision bias in favour of the repeated player. Further, as emphasized by Medda (2007), strategic behaviour by the contracting parties can undermine the efficacy of dispute resolution mechanisms such as final offer arbitration, and inefficiently affect the risk allocation among PPP partners.

Whilst discussing the pros and cons of different dispute resolution mechanisms is beyond the scope of this paper, it is important to point out that the design of the dispute resolution mechanism is a key issue for the success of the contractual relationship, especially given the need to avoid costly service disruptions and the long-term nature of most PPP contracts. There have been instances (e.g. the PPP Arbiter for the London Underground PPP) where it has been viewed as advisable to set up a permanent office, independent of the contracting parties, that has the authority to deal with all the contractual disputes between the parties in the contract.

The contracting parties should include clauses in the contract specifying a dispute resolution mechanism to handle disputes that may arise during the contract life. An alternative dispute resolution procedure, such as arbitration, is preferable to courts.

A simple dispute resolution procedure may involve three stages, with the contracting parties moving from one stage to the next if the former fails. The first stage is an internal consultation in ‘good faith’ between the parties trying to reach a mutually convenient agreement on a certain case. The second stage is an external consultation where the case is put before an appointed expert, or a conciliator, whose decision may or may not be binding. If either party disagrees with the expert’s determination, the last stage envisages a PPP arbitration for a final and binding decision on the case. The
contractual clause should clearly specify the procedure that will be followed for the appointment of the expert and of the arbitrator.

Despite the benefits of the three-stage procedure in terms of smoothing the conflict resolution process, the procedure may require too much time for certain pressing issues and give rise to transaction costs. To cope with pressing issues that require immediate decisions and may lead to an increase in costs, an extraordinary, fast-track procedure accelerating the three stages should be established in the contract.

In implementing external consultation and PPP arbitration, a number of issues should be addressed. Regarding the costs of undertaking such procedures, the contract should envisage a mechanism for appointing and compensating experts and PPP arbitrators. To encourage both parties to control transaction costs, it might be convenient that each party bear its own legal costs.

The contract should also envisage a mechanism for compensating experts and PPP arbitrators. Experts and PPP arbitrators should be appointed from panels or among distinguished professionals, thus avoiding affiliations that may lead to a conflict of interests, e.g. persons linked to the public-sector party, the private partner, competitors, or suppliers. In this regard, it is important to ensure transparency in the selection of experts and PPP arbitrators.

For the dispute resolution mechanism to attain its purpose effectively, the contract should facilitate any action and decision-making by the experts and PPP arbitrators. For instance, they should be entitled to access any document relevant for the case, to call the parties for hearings, to require written submissions from the parties, etc. Whether the information conveyed by the parties to them must be kept confidential or not is an issue that should be discussed on the basis of the specific circumstances of the dispute, but where possible confidentiality should be avoided. As discussed in the companion paper, transparency is key for reducing the likelihood of performance failure.

It is recommended to specify strict deadlines for the PPP experts and arbitrators’ decisions and to require a written justification for any decision they make. Enforceability of decisions made by experts and PPP arbitrators is an essential requirement for the dispute resolution mechanism to work and be legitimate. In particular, the parties must be obliged to acknowledge and observe the decisions made by PPP arbitrators regarding compensations to be paid by one party to the other.

While the dispute resolution mechanism is underway, it may happen that the private-sector party attempts to avoid penalties resulting from construction delay or poor performance in service provision by arguing that these events are consequence of the yet unsettled dispute. However, the contract should not allow for lower payment deductions when a dispute has arisen.

In any case, if the private-sector party undertakes works to meet its contractual obligations while the dispute resolution mechanism is underway, but the final resolution
makes these works redundant, then the private-sector party should be entitled to a compensation to be determined by the expert or PPP arbitrator.

More generally, the contract should specify which party is liable for any extra cost resulting from the final decision made in the dispute resolution procedure, e.g. economic costs of delaying service commencement, costs for rebuilding parts of the facilities, etc.

Case Study: London Underground (UK) (Part VI)

In order to handle disputes that may arise during the contract life, the PPP contracts included provisions to appoint a PPP Arbiter. The Arbiter can be called for to determine key financial terms of the PPP agreements at the periodic contract reviews every seven-and-a-half years. The Arbiter can also be appointed in the case that a specified circumstance makes it necessary for the parties to carry on an extraordinary contract review, e.g. a major cost overrun when upgrading a line.

The difference between the Arbiter and an arbitrator is that the former has a continuum role and the ability to give guidance as well as directions under the contract terms, whereas an arbitrator is called for only in specific circumstances when the parties have reached a certain stage in the dispute resolution procedure.

In the London Tube PPP case, the Arbiter did not escape from criticism. As there was no dispute to arbitrate during the first 20 months of the contracts, but the Arbiter Office enjoyed an annual budget of £1.6 million, some argued that it was being a costly procedure for resolving disputes.

Sources: see London Underground (Part VII).

5.4.2.9 Step in rights

In order to preserve service performance, ensure service continuation, and protect the value of investments, the contract normally includes step-in right clauses entitling the public-sector party and the lenders to take responsibility in specified circumstances over the decision-making that would have been under the private-sector party’s control had the times be normal. The HM Treasury (2007) deals with the issue of step-in rights in detail. The recommendation is that the step-in clauses should identify the circumstances under which some party can step-in, and the compensation the parties are entitled to.

Regarding the public-sector party step-in rights, the contractual provisions allow the public partner to take over the private partner’s obligations in the project for a period. These provisions differ from early contract termination clauses in that they apply to situations where the public-sector party is supposed to have advantages to deal with certain types of problems. Typically, the public sector executes the step-in rights as a matter of urgency to remedy a serious short-term problem, such as a safety risk, a health issue, or an environmental issue.

To determine who bears the costs arising from the step-in action, it is important to distinguish whether the problem triggering the step-in by the public sector is caused by a
private sector breach of contract or not. In the case where the problem is not caused by a breach of contract by the private-sector party, the cost of stepping-in should be borne by the public-sector party in order to induce the latter to internalize the cost of its actions. When instead a private sector breach of contract is the cause of the problem, the costs of stepping-in should be borne by it, e.g. by setting deductions against tariffs or unitary payments.

In a DBFO contract where the private-sector party finances the project upfront, the lenders of the private-sector party may also be entitled to step-in. In fact, it is often argued that the possibility for the lenders to intervene directly in the project management is one of the advantages of using private finance. In PPP contracts, providers of finance look to the cash flow of the project as the source of funds for repayments. Financial security against the SPV is rather limited since the SPV has minimal assets. The facilities often do not have a capital worth in terms of a wide market to which the lenders would wish to attribute values. Moreover, in many cases, lenders have no right to sell the project’s assets if the contract terminates. Lenders, therefore, have strong incentives to analyze the project’s risks and to monitor the private partner’s performance in carrying out the activities assigned by the contract. In this regard, lenders step-in rights allow them to intervene directly in the project management as a means for protecting their invested funds.

This monitoring rule exercised by lenders can then alleviate asymmetric information problems between the public and private partners that arise because the private-sector party has better information on the likelihood of project failure due to private partner’s default. In particular, the availability of private finance becomes the means through which the private information of the lender as to the riskiness of the project is credibly transmitted to the public-sector party. The argument is similar to the one made in the economics literature on trade credit to explain how the availability of trade credit can help to alleviate asymmetric information problems between banks and firms that can preclude financing of valuable projects (Biain and Gollier, 1997).

The nature and aim of the lenders’ step-in rights is different from the public-sector party’s: while the public sector may step-in to cope with a short-term problem, the lenders may step-in when there is a risk of early contract termination for private sector default. If the public-sector party threatens to terminate the contract early following an event of private sector default, the lenders may be at risk of losing the funds invested in the project. Under this circumstance, step-in rights allow lenders to substitute the private partner or to replace it by a new private partner in an attempt to keep on the project and get their financial claims repaid.

To the extent that a lenders step-in action may revive the project and avoid service disruptions, the lenders step-in provisions seem to be advantageous for both lenders and

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74 A similar argument has also been made to rationalize the benefits from extending product liability to the lender in consumer-credit transactions between the consumer, the seller, and the lender (Iossa and Palumbo, 2004).
the public-sector party. In fact, a direct agreement between lenders and the public-sector party is usually required prior to any lenders step-in right being exercised. In this agreement, both parties settle the service conditions to be applied and acknowledge that the project’s benefits will be assigned to debt repayment.

As we have discussed in the companion paper, there may be circumstances under which it is be desirable for the public-sector party and the lenders to take over the responsibilities that the private-sector party has in normal times. Therefore, the contract should include provisions to give step-in rights to the public-sector party and to the lenders. Since the public-sector party and the lenders may wish to intervene in the project under different circumstances, the contract should specify each of them. In addition, the contract should set out the private-sector party’s duties and rights when other parties are stepping-in.

It is advisable to establish public-sector party step-in rights to deal with short-term problems involving safety, health, and environmental issues that must be sort out immediately. But in no case the public-sector party should be forced to step in. The contract should contain procedures for the public-sector party to notify the private partner of the motives leading the former to step-in, the date commencing the step-in action, and the expected period in which the step-in action develops.

The contract should contain provisions specifying who bears the cost of step-in. Generally, when the problem triggering the public sector stepping-in does not result from the private-sector party’s action, and hence its causes are external to the contract, the costs arising from the step-in action should be borne by the public-sector party. This helps to ensure that the public-sector party has incentives to undertake actions to control these costs.

Further, during the step-in period, it is recommended that the public sector continue paying the private partner for the service as if it were fully delivered. For instance, if the service becomes unavailable as consequence of the step-in action by the public-sector party, unavailability deductions should not apply to payments to the private-sector party.

However, to the extent that some parts of the service are still provided by the private-sector party during the step-in period, payment deductions for poor performance should apply. In the case where payments to the private-sector party are based on service usage and third party revenue, the contract should also include provisions to calculate such payments despite the fact that the service may not be actually delivered.

On the other hand, when a private sector breach of contract causes the problem that leads the public-sector party to step-in, it is the private-sector party that should bear any cost arising from the step-in action. The private sector’s failures should trigger the corresponding penalty provisions included in the contract. However, during the step-in period, it is advisable to pay the private-sector party as if it had not breached the contract. If the private sector breach of contract subsists after the public-sector party steps-in, it is recommended to set out provisions allowing for early contract termination on private sector default.
It is advisable to establish **lenders step-in rights** to encourage lenders to intervene in a project that is at risk of termination on private sector default. The public-sector party should notify the lenders of its intention to terminate the contract, giving them the possibility to step-in in order to revive the ailing project either by managing it by themselves or by replacing the private partner. Similarly to the case of public-sector party step-in rights, lenders should not be obliged to step in. If lenders choose not to exercise their step-in rights, then the public-sector party should be entitled to proceed with the early contract termination, choosing whether to re-tender or not and making the corresponding compensations (see the following sub-section for more details on early termination on private sector default).

On the other hand, if lenders choose to exercise their step-in rights, they should pay for any outstanding liability of the private partner as well as take action to remedy the breaches of contract. In order to give lenders an opportunity to undertake a **rectification action**, it is recommended to specify a rectification period within which the contract is relieved from termination provisions. In addition, the penalty points accrued prior to the lenders step-in action that may trigger an early contract termination should be suspended as soon as lenders step-in; otherwise, lenders may be reluctant to exercise their step-in rights as there would be a high risk of contract termination arising mainly from the private-sector party’s past poor performance.

If the breach of contract arising prior to the lenders step-in action cannot be remedied by the lenders, or if new breaches occur during the lenders step-in period (e.g. outstanding liabilities are not paid by the stepping-in lenders), or if lenders choose to step-out because they no longer wish to revive the project, the public-sector party should maintain its right to terminate the contract early. In particular, the public-sector party should be entitled to proceed with the early contract termination on private sector default as described below.

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**Case Study: London Underground (UK) (Part VII)**

The contracts entitled LUL to make deductions from the basic ISC payments when an Infracos’ performance fell short of the targets. In addition, the contracts envisaged a number of actions that could be taken by LUL to cope with a persistent underperformance by the Infracos.

First, LUL could issue a corrective action notification requiring the Infracos to promptly remedy their poor performance in providing the service, and it could also call for an extraordinary contract review introducing the Arbiter into the picture.

Second, LUL was entitled with step-in rights allowing it either to intervene in the pledged works to remedy the problems arising from the Infracos’ non-compliance or to appoint a third party to work them out.

Third, when the breaches of contract by the Infracos were repeated and/or the LUL had stepped-in for over a year, LUL was allowed to enact a mandatory sale of the contract aiming at ensuring continuity in the service provision. In this regard, unlike other PFI contracts in the UK, the lenders are not allowed to sell the contract to other providers in order to protect their investment;
according to the House of Commons (2005) report, this led lenders to call for an initial debt guarantee by the public sector, as discussed before.

The contracts had provisions for **early contract termination** that restricted termination to extreme circumstances such as insolvency or fraud.

One might ask why LUL didn’t step-in and/or terminate the Metronet contract after the apparent PPP failure. It may be argued that LUL has little incentive to follow such a course of action because, if LUL fails to find a new provider within one year after stepping-in, it will become liable for the £2 billion debt of Metronet.

Sources:
NAO (2004a), (2004b)
Public Private Finance, various issues
Public Finance, various issues
The Economist, April 2007, June 2007
The Financial Times, various issues
The Guardian Unlimited, various issues
The House of Commons, Committee of Public Accounts (2005)

5.4.3 Early termination

There are circumstances that may lead the public sector and/or the private partner to terminate the contractual relationship before the contract expires. Thus, the contracting parties could agree to specify clauses determining their rights to terminate the contract earlier.

According to HM Treasury (2007), the clauses should address two important interrelated issues: first, the reasons that may trigger a contract early termination, and second, the compensation each party is entitled to receive when the early termination occurs for one of these reasons.

Contract early termination may result from:

(i) default of either or both parties,
(ii) voluntary termination by the public sector,
(iii) force majeure events,
(iv) corrupt gifts and breach of refinancing provisions.

For each of the above cases, HM Treasury suggests the contract should specify the precise circumstances that can lead to termination of the contractual relationship and the criteria to establish the compensation of the parties and how the project’s assets are transferred.
The compensation scheme suggested by the HM Treasury for cases (i) and (ii) is that the party in breach should fully compensate the other party in such a way that the latter bears no financial consequences from the breach (or voluntary termination). That is, the innocent party should be left in the same position it would have been in had the contract not be terminated. Instead, in case (iii), the mutual compensations should be based on the principle that force majeure events are the fault of neither party.

In practice, it may happen that some of the costs incurred by a party are non-contractible, and so under-compensation occurs despite the principle of full compensation. Anticipation of the possibility of contract termination can then discourage a party from incurring in non-contractible cost such as unverifiable investment. This is a key issue when the public sector voluntarily terminates the contract because, for example, the service is no longer needed, but the private-sector party has made non-contractible investments. Any under-compensation in the event of contract termination is then likely to damage the public sector reputation and to reduce incentives for non-contractible investments in future projects.

A key debated issue is the compensation payable on default by the private-sector party. Payments and asset transfers involved in this compensation should balance the protection of the public-sector party’s interests and the convenience of not imposing unfair, excessive deductions on the private partner for its default. Excessive deductions would also create the negative effect of distorting the incentives of the public-sector party to call for contract termination. Consistently with such a balance, it may happen that the public-sector party is entitled to have the project’s assets transferred to it (being compensated for the damages the private partner default imposes on it), but it is also obliged to make a payment to the private-sector party (avoiding a possibly disproportionate transfer of value from the private partner to the public sector), despite the private partner’s default.

In the UK, for instance, three different approaches have been followed over time and across projects as regards to compensation in the event of private partner default: no compensation, stage-based compensation, and market-based compensation.

**No compensation**

In early roads projects, contracts provided for no compensation, and in prisons projects, contracts offered no compensation if termination occurred in the construction phase. The rationale for the ‘no compensation’ approach is that it provides incentives for the private-sector party to perform and for the major lenders to step-in to sort the project out in the event of private partner default. But this policy may expose the public-sector party to the charge that it makes an unfairly large windfall gain in that event (e.g. if it takes over a valuable asset and makes no payment to the private-sector party). In addition, the public-sector party may suffer from an excessive risk pricing attempted by the private-sector party to protect itself against the large losses caused by the no compensation policy in the event of default.

**Stage-based compensation**
The second approach was used in early accommodation, schools, and hospital projects, where contracts envisaged compensations, assets transfers, and payments. In particular, payments from the public-sector party to the defaulting private-sector party were calculated according to the stage in which the project was terminated: if termination occurred in the construction phase, payments depended on the capital costs net of rectification costs; if it occurred in the operation phase, payments were based on the net present value of future cash flows. Thus, the compensation approach embedded in the contracts attempted to overcome the shortcomings of the ‘no compensation’ approach, i.e. the risk of treating the private-sector party in an unfair way and the problem of excessive risk pricing.

However, the contractual procedures to value the assets to be transferred from the private-sector party and to calculate the payment to be made by the public-sector party typically involve large transaction costs. In practice, these procedures are difficult to negotiate and implement, e.g. there may be difficulties in verifying past capital expenditure, as well as disagreements between the partners in projecting future cash flows and assessing the impact of project termination.

Besides, the incentives for the major lenders to step-in and rescue the ailing project may be weakened to the extent that the payment made by the public-sector party upon the private partner default is high enough so as to fully repay senior debt. Lacking a stake in the project after debt repayment, lenders are unlikely to choose to step-in and continue the project.

Market-based compensation

The third approach, currently in place in UK, is the market value approach. Under this approach, the contract facilitates the lender’s right to step-in in the event of private partner default, allowing them either to rescue or to sell the project. If the lenders fail to step-in, the contract envisages compensation on termination based on the market value of the remaining duration of the contract.

In the market-based compensation approach, the lenders are given rights to step-in when the public-sector party has the intention to terminate the contract following the private partner’s default. Moreover, the contract encourages lenders to continue the project by themselves or to sell it, e.g. by allowing them to propose remedies for the ailing project or to seek for a new private partner managing themselves the sale of the unexpired term of the contract.

In the case that lenders choose not to step-in or fail to find a suitable new private partner, the public-sector party has the right to re-tender the unexpired term of the contract seeking for a new private partner by itself. The purpose of the contract re-tendering is two-fold: to increase the likelihood that the project continues as a new private partner takes it, and to collect information about the market value of the project that can be used to compute the compensation payable to the defaulting private partner.

For the above purpose to be accomplished, however, there should be a liquid market in the sector where the project develops, i.e. a sufficient number of firms so as to ensure that bids in the contract re-tendering do reflect the fair value of the project. In this
regard, the contract should allow the parties, especially the public-sector party and the lenders, to agree whether the market is liquid or not at the time the early contract termination occurs.

If a re-tendering is conducted and a new private partner is awarded the unexpired term of the contract, the public-sector party pays the proceeds of the sale to the defaulting private partner as compensation, after deducing all the cost that the private-sector party default imposes on the public-sector party (including the costs of the re-tendering).

On the other hand, if no re-tendering takes place, either because the public-sector party chooses not to conduct it or because the interested parties agree in that the market is not liquid, the public-sector party pays compensation to the defaulting private partner using public funds. To compute such compensation, it is advised to use standard market valuation procedures, so that the compensation amount is a reasonable approximation to the market value that would have arisen from a re-tendering had the re-tendering been conducted. Alternatively, the public-sector party could appoint an independent financial expert to determine the value of the remaining project.

The problem with the market value approach is that it might lead to an excessive compensation being payable to the private partner in default, especially if the new private partner is more efficient than the existing one and so can pay a decent price for the contract. A compensation that is equal to the full market value of the remaining duration of the contract (net of the costs imposed by the private partner default on the public sector) could result in the private-sector party bearing minimal losses for its failed performance. Therefore, it might be preferable to include in the contract a formula that establishes how to compute the compensation for the private-sector party and that ensures the compensation is a fraction of the full market value.

Furthermore, private partner default may occur not just because the private partner is inefficient but also because the contract was ill designed (e.g. the risk allocation was inefficient) and the parties did not realize it in advance, or because new circumstances have unfolded and made the contract inadequate. In all these circumstances, re-tendering of the unexpired term of the existing contract is suboptimal and it is unclear why parties should rely on market value in determining compensation payments.

How to design termination clauses is an issue that has been highly debated in the economics literature, which has focused on two main issues:

(i) how termination clauses can help to ensure that there is an efficient partnership dissolution, i.e. clauses that dissolve the partnership when it is efficient to do so and assign the assets to the partner valuing them the most (see Cramton, Gibbons and Klemperer, 1987), and

(ii) what is the relationship between the effort (investment) decision made by the partners and the possible termination of the partnership.
Regarding point (ii), some authors have argued that not writing an ex-post efficient termination clause can improve the partnership’s performance (Bernheim and Whinston, 1998). The idea is that contracts that contain some ‘gaps’ (e.g. by not regulating the terms for the break-up) or generate high transaction costs in case of separation (e.g. prescribing joint ownership of assets) may help in establishing the appropriate incentives to cooperate and perform.

In particular, when the contract is silent on some aspects of the parties’ obligations, it may be easier for the parties to establish a cooperative partnership. The parties may find it desirable to coordinate as they have an implicit mutual understanding that any breach of the implicit agreement on cooperation by one party will be followed by a similar breach by the other party. The general idea is that it might be beneficial to improve ex-ante efficiency (larger effort/investment) by imposing some inefficiencies ex-post (costly bargaining due to lack of termination clause) that push parties to perform and escape the risk of very costly termination.

However, when it is easy to establish who’s default led to termination, the logic above would suggest not to have any compensation for the defaulting party, in order to protect non-contractible cooperative investments undertaken by the well-performing party and to deter bad performance. In other words, most of the value should stay with the party that did not damage the relationship.

An empirical study by Lerner and Malmendier (2004) focuses specifically on partnership termination clauses. They employ a dataset on research agreements between biotech and pharmaceutical companies. Typically, in these alliances the pharmaceutical partner finances the project while the biotech unit carries out the research project. What Lerner and Malmendier show is that when the contribution of the biotech is non-contractible, it is more likely that the initial agreement stipulates that the pharmaceutical firm holds the ‘right to terminate’. The basic idea is that the termination right serves to protect the pharmaceutical company from the possible opportunistic behaviour of the partner whose contribution cannot be specified in a binding contract.

The contract should specify the circumstances that may lead the public-sector party and/or the private partner to terminate the contractual relationship before the contract expires. Thus, the contracting parties should agree to specify clauses determining their rights to terminate the contract early. These clauses should describe the reasons that may trigger a contract early termination, and the compensation each party is entitled to when the early termination occurs.

Contract early termination may result from a number of factors, including default of either of both parties, voluntary termination by the public-sector party, force majeure events and corrupt gifts and fraud.

Regarding a public-sector party default, the contract should specify the failures that allow the private-sector party to call for terminating the contractual relationship, making sure that the public-sector party has had the opportunity to remedy the situation.
For instance, the public-sector party may incur in default if it fails to make a due payment after a predetermined period (including interests in arrears), or if it breaches the contract in such a way that it becomes impossible for the private-sector party to perform the service provision during a certain period (e.g. expropriating assets needed in providing the service). Under circumstances like these, the private-sector party should be given the right to terminate the contract early.

In the case of public-sector party default, the public-sector should compensate the private-sector party fully in such a way that the latter bears no financial consequences from the breach. The private-sector party compensation should then be sufficient to cover: (i) the equity return (i.e. the loss of profits over the remaining project term); (ii) the outstanding debt obligations; and (iii) any costs arising from the termination of existing contracts between the private-sector party and its employees and suppliers (e.g. redundancy costs).

The private-sector party should be required to submit a method to calculate compensations at the bidding stage, and that method should be applied if a public-sector party default eventually occurs. Further, provisions should be made to ensure that the losses estimated by the private partner are not artificially inflated.

Of critical importance is the provision specifying what happens to the assets built by the private-sector party, which should aim at minimizing service disruptions. The provision should generally ensure that the project’s assets are transferred to the public-sector whilst the private-sector party is fully compensated for the losses.

As far as the private-sector party default is concerned, it is the public-sector party that calls for early contract termination. For instance, the private-sector party may incur in default if it fails to meet a predetermined service commencement date, or alternatively a long-stop date, in an infrastructure project involving construction and operation phases.

There may be also a default when the private partner persistently fails to comply with certain obligations such as service performance standards, despite of warning notices and rectification periods allowed to remedy the failures (whilst still imposing deductions). Failure to contract the required insurance and outright private-sector party insolvency may also lead to private-sector party default. In general, the contract should specify the circumstances that give the public-sector party the right to terminate the contract early.

The public-sector should enforce deductions and call for a termination of the contractual relationship whenever the conditions for deductions and for termination arise. Failure to impose deductions and to call for contract termination not only destroys the

75 Regarding the equity return, for instance, three methods have been proposed to compute the compensation: (i) a compensation based on the internal rate of return level set out in the original ‘base case’ (i.e. in the financial model agreed by the contracting parties in order to compute the service charge) for the whole life of the contract; (ii) a compensation based on the market value of equity for the entire duration of the contract; and (iii) a compensation based on the rate of return level set out in the original ‘base case’ for the remaining life of the contract starting from the early termination date.

76 Early termination on private-sector party default could also happen when the private-sector party requires protection from a court against possible bankruptcy actions undertaken by lenders, as provided for by an administration order in the UK bankruptcy law or Chapter 11 in the US bankruptcy law.
incentives for the current private partner to perform and meet the contractual obligations but it also damages the reputation of the public-sector party with future private partners, which in turn weakens the incentives of these other them.

In the case of private-sector party default, it is recommended to entitle the public-sector party to have the project’s assets transferred to it. But to avoid benefiting the public-sector party at the expense of the private-sector party by transferring valuable assets, the contract should also envisage a compensation for the later paid by the former.

In addition, to avoid the costs for the public-sector party associated with terminating the project and interrupting the service provision, it is convenient that the contract includes procedures to facilitate the continuation of the project, e.g. transferring the project to the lenders or to a new private partner.

The contract should envisage a scheme to address the issues of determining the compensation amount and facilitating project continuation. In the companion paper we discuss three possible alternatives: (i) No compensation, (ii) Stage-based compensation, and (iii) Market based compensation, and the benefits and costs of each of them. Depending on the project circumstances, the availability or not for a liquid market in the sector where the project develops, the cost of re-tendering and the presence of alternative private partners, the appropriate approach should be chosen.

It should however be taken into account that approach (iii), currently used in the UK, might not be appropriate in other countries as it might result in a private sector in default receiving an unduly high compensation. In countries where the private sector has had weak incentives to perform so far, approaches such (i) or (ii) can help to provide stronger incentives for the private party and to increase the credibility of the public-sector party.

The contract should envisage circumstances under which the public-sector party has the right to voluntary terminate the contract early. For instance, changes in policy at national or regional level may create restrictions hindering the continuity of a project or making the service provision redundant, and then the public sector may prefer an outright project discontinuation.

In the event of a voluntary early contract termination, the private-sector party should be fully compensated, receiving a payment that leaves it in the position it would have been in had the contract not be terminated. It is recommended to set the same compensation amount payable to the private-sector party in early contract terminations triggered either by the public-sector party’s default or by it exercising the right of voluntary termination. This is because, otherwise, the public sector could face distorted incentives regarding the means by which it is entitled to terminate the contract early. In any case, since the private-sector party is being fully compensated, the project’s assets should revert to the public-sector party as this will help minimizing service disruptions.

Case Study: Balmoral High School (Northern Ireland)

The education authorities in Northern Ireland face a £7 million bill to maintain a school abandoned after less than five years of service. The 500-place Balmoral High School, on
the western outskirts of Belfast, was one of the two schools built under a £17 million PFI deal in 2002.
But demographic changes have seen pupil numbers fall from over 400 when the scheme was planned to 154 today.

The Belfast Education and Library Board has not confirmed plans to close the school yet. But it will have to pay a £7.4 million bill to maintain and service the school over the remainder of the 20-year contract.

Source: Public Private Finance, April 2007, issue 112

Contract clauses addressing **force majeure** events should carefully define which events are to be considered as such, e.g. natural catastrophes, acute social conflicts, war or terrorism in the jurisdiction where the projects develops. Under such circumstances, the contract should not entitle any party to claim for a breach of contract by the other party or to impose charges on that party. On the contrary, the contract should encourage both parties to seek for means to mitigate the effects of the force majeure events and to ensure project continuation. Since it may happen that the contracting parties fail to agree on how to deal with these events, it is recommended to give the right to early contract terminate to both of them. Then, in determining compensations applicable to early contract termination on force majeure events, the negotiation between the contracting parties should be based on the principle that force majeure events are the fault of neither party, and that financial damages should be shared. It is advisable to entitle the public-sector party to have the project’s assets transferred to it. In addition, the private-sector party should be partially compensated by a payment covering the equity return (party), the outstanding debt obligations, and a fraction of the costs arising from the termination of existing contracts between the private-sector party and its employees and suppliers (e.g. redundancy costs).

The contract should consider **corrupted gifts and fraud** as causes for early contract termination. In addressing this issue, it is advisable to take into account both the interest of the public-sector party in ceasing the contractual relationship with a corrupted and/or fraudulent partner, and the interest of the lenders, who may not be involved in any prohibited act, in recovering their funding to the project. The contract should specify which actions imply corrupted gifts and fraud. If the private-sector party is directly responsible for a prohibited action, the public-sector party should have the right to terminate the contract by paying the outstanding financial liabilities; in addition, the public-sector party should be compensated by the private-sector party and receive the project’s assets. Instead, if the private-sector party is not directly responsible (e.g. the prohibited action is undertaken by an employee acting on his own), it should be given an opportunity to displace the responsible person and then continue the contractual relationship with the public-sector party.
6 Contract design

The main dilemma of public-private partnerships is the extent to which the division of labor and responsibility between public and private spheres delivers the optimal infrastructure service or public good. Privatization has often been viewed as an excessive response to the inefficiencies of public sector, even when privatization comprises stringent regulatory environments (Martimot and Pouyet, 2007).

The literature stresses the trade-off between efficiency and rent extraction when the regulated firm has an informational advantage. Privatization reduces the information the government can access about the firm, thus makes privatization and asymmetry of information to raise firm’s incentives to invest. Contract design and risk transfer in PPPs is on incomplete contracting. Market relations are problematic when they require relation-specific investments while taking place in a complex environment. This complexity makes contractual incompleteness unavoidable, leading to underinvestment by one party in the relationship due to fear of ex-post hold-up. Higher investment by one party can trigger tougher ex post bargaining by the other party, which is tempted to grab a share of the surplus generated by the investment. Asset ownership is assumed to confer residual rights to control over the asset and it motivates individuals to invest by giving them bargaining power ex post (since they retain control over the asset they own in case of disagreement) and thus higher returns of investment.

PPPs can mitigate or exacerbate inefficiencies arising from asymmetric information. Iossa and Legros (2004) present a general model of regulation under soft audit information, but it can easily be applied to PPPs. There are two periods, and one can think of the first as the building stage and the second one as the operating stage of a given infrastructure project. The public sponsor of the project can allocate the right to operate to the builder or another agent (e.g. an entrant). An entrant does not have information about building effort in the first period but may acquire it by doing costly auditing. In these circumstances, it is optimal to elaborate a contract that gives the potential entrant the option to buy the right to operate the project in the second period and to have the builder (e.g. first-period agent) receive monetary payment from the operator in this case. If the entrant does not exercise his option, the builder continues to operate the asset. In this way the willingness to exert the right produces the desired efficiencies.

Other authors (Bentz et al., 2002) stress the importance of whether operating costs are high or low. When costs are high the operator exerts effort during the building phase with a view to cutting operating costs. This leads to two types of inefficiencies in contracting. First, since the operator privately knows whether operating costs are high or low, even an optimal operating contract will leave an informational rent with the operator. Second, since there is moral hazard at the building stage with positive probability, the builder needs to be given incentives to invest in the reduction of operating costs. This arises from an increase probability of lowering operating cost which is relatively small compared to the required investment.
PPP then allows the ability to contract with only one agent, the consortium, who builds and operates the infrastructure. Without a PPP, the (risk-neutral) builder contracts without private information and, as a result, has to be paid only for the expected cost of the investment; but the informed operator gets an informational rent to reveal operating cost, enabling him to give incentives to the builder. PPP stimulates both the socially desirable and the undesirable investment, when is a PPP better than traditional public procurement? Hart concludes as follows: (i) if the cost-cutting, quality improving investment \( e \) can be verified, traditional procurement is better than a PPP because the investment is optimal and the initial financial requirements can be set at the efficient level by contracting with the builder; (ii) instead, if the cost cutting though potentially quality-shading investment \( i \) can be verified, PPP dominates traditional procurement since the contractor has better incentives to carry out the quality-improving investment.

Another source of contractual incompleteness that may influence the choice of procurement is a possible change in the objectives of the parties. To illustrate: a highway from point A to point B could be viewed as the right design when the sponsor invites contractors to bid for the project, but large migration or relocation of industries may make a highway from B to C the better design when project implementation starts. This could suggest that transferring ownership to the contractor reduces the risk associated with a change in objective of the sponsor. In that sense, transferring ownership to the contractor under a PPP could provide protection against political risk or ‘soft objectives’. However, this view assumes that there is no way to protect ex ante the contractor under traditional procurement against such a change in objectives. Then, PPPs have potential to only help avoid cost overruns resulting from soft objectives.

Cost overruns are due to the desire of firms to get the contract and, therefore, to bid well below what they expect the cost of delivering the project to be (Flyvberg et al. 2003). Changes in the design of projects after awarding contracts often explain cost overruns. Besides this ex ante inefficiency, there will also be an ex post inefficiency if bargaining takes place under asymmetric information, a case of concern for PPPs. For instance, the sponsor may not know the quality of the investment made by the contractor before the bargaining starts, or the contractor may not be aware of future budgetary constraints that are known by the sponsor. In this case, the efficiency of bargaining will depend on the outside options of the parties, which are given by the initial contracting terms. There is then a trade-off between specifying many contingencies in the initial contract – which is usually positive in the absence of renegotiation – and modifying the outside options of parties – the effect of which is ambiguous when renegotiation cannot be prevented and when there is still asymmetric information. The issues of transparency, specification of strict performance targets, and completeness of contracts are key elements of the European Directive for public work contracts.
Project design, cost overruns, and competition

Suppose there are two firms A and B that can bid for procurement of a public service. Like in Box 3, consider two potential designs for a highway: A and B. But now suppose that firm k (A or B) is specialized in design k: it has cost c of procuring design k and cost c + a (where a stands for ‘additional cost’) for procuring the other design.

The sponsor has valuation v for having the right design and zero for the wrong one. Ex ante, there is an equal chance that the sponsor will prefer design A. The sponsor can invest ex ante to learn about his preferred design, for instance by doing macroeconomic simulations of labor demand, collecting information about the reliability of different designs, etc. We assume – to take the case most difficult for us – that this ex ante investment is not costly for the sponsor.

Contractors know whether the sponsor knows his best design and then bid for the contract. If the design is not specified and firm A is selected, there is a 50-percent chance that the sponsor learns that design B is best: we assume that renegotiation enables the firm to extract a compensation r from the sponsor (obviously r ≤ v). If the sponsor knows his preferred design he specifies it prior to the bidding stage. We consider both situations in turn. Suppose the design is not specified: the two firms are in fact in a symmetric situation since they each face renegotiation with probability ½. Competing for the contract leads them to offer a price p = c + (a - r) / 2 and the sponsor obtains \( v - r / 2 - p = v - c - a / 2 \).

We now turn to the other situation. If the sponsor specifies the design prior to bidding, the two firms are no longer symmetric: for instance if design A is specified, firm A can bid slightly less than \( p = c + a \) and gets the contract. Firm A obtains a rent of a while the sponsor has a payoff of \( v - c - a \), which is strictly less than what he gets when the design is not specified. Hence, even if there are no costs of specifying the design, it is better for the sponsor to keep the firms in a symmetric situation: this increases competition for the contract between the firms, though the sponsor must accept an increase in the likelihood of renegotiation or cost overruns.

Source: Adapted from Dewatripont and Legros (2005)

6.1 Building transparent and accountable partnerships agreements

In PPP contracts the regulator is expected to act in the public interest and has considerable, although bounded and accountable, discretion in its decisions over tariffs and service standards. Some have argued that the fundamental challenge for regulatory design is to find regulatory governance mechanisms that restrain the degree of regulatory discretion over substantive issues such as tariff-setting (Levy and Spiller, 1994). Others have taken the view that a certain degree of regulatory discretion is inevitable (and even desirable) and hence the fundamental problem is how to establish governance arrangements and procedures that allow for a non-trivial degree of bounded and accountable discretion (Stern and Cubbin, 2005).

An important issue that calls the attention to shape PPPs contracts to reduce inefficiencies has to do with governance issues. In particular, transparency to tackle corruption practices, which in represent a widespread problem in countries with large project infrastructures portfolios. Contract design is an effective mechanism to improve governance since market forces cannot discipline politically-protected public buyers that
misbehave, stringent disclosure requirements are also seen as a potentially powerful remedy (Rose-Ackerman, 1999; Kaufmann, 2005). The direct costs of disclosing information on contract terms and performance evaluation appear to be rather small in general (see e.g. Leuz, 2007), and even more so for repeated non-PPP procurements and large infrastructure projects like PPP. But in the case of contract design procurements tend to be infrequent for the particular public buyer, much larger, more complex, and often specific to particular assets. These features make benchmarking and other standard forms of outside control more complex in PPP compared to traditional procurement practices. At the same time, stakes are higher than in standard procurement, so bad governance can be much more costly.

In terms of contract designs, transparency and accountability are important to ensure sustainability. But transparency and accountability depend on exogenous and endogenous aspects that shift the conditions of contracting in PPPs. Some aspects can be internalized in contracts, as Iossa, Spagnollo, Vellez (2007) assert, given the identification of the following conditions:

i. Characteristics and trends of the targeted sector and its market structure (Exogenous)
ii. Degree of macroeconomic instability (Exogenous)
iii. Country’s regulatory and institutional framework (Exogenous, sometimes endogenous when the PPPs contracts depend on legal reforms)
iv. Contract design and management, in particular the payment mechanism and the risk allocation built-in the contractual terms (Endogenous)

Therefore contract design should focus mainly on (iv) in order to guarantee efficiency, accountability and sustainability. Making the public-sector party accountable for its actions so as to provide adequate incentives is not an easy task. First, public-sector relies heavily on experience to contract the right incentives. Such experience is essential because as specific sector knowledge accumulates, the public authorities could standardize parts of the contracts for that specific sector as a means to reduce the likelihood of contract and output misspecification (Iossa, Spagnollo, Vellez; 2007).

In addition there contract design must recognize the distinction between regulatory governance and regulatory substance. Regulatory governance refers to the legal design of the regulatory system, institutional arrangements, and the processes of regulatory decision-making. It includes issues such as regulatory commitment, clarity of roles and functions between the regulator and policy makers, regulatory autonomy, the organizational structure and resources of the regulator, and issues such as transparency, participation, accountability, predictability, proportionality, and nondiscrimination, whereas regulatory substance refers to the content and outcomes of regulation, such as tariff-setting or service standards, and their impacts on consumers or utilities (Eberhard, 2007).

Transparency is also often compromised in regulatory contracts, such as concession agreements or power purchase agreements. Few of these contracts are open to public scrutiny. Government officials and private operators often justify such secrecy on the grounds of “commercial necessity or competition.” But it is unclear why the secrecy is needed if the operator has been granted a de facto or de jure monopoly that eliminates
any possibility of competition, at least for a significant number of years (Mwenechanya, 2006).

When there is no access to these contracts, it should not be surprising that the general public tends to assume the worst (that is, excessive profits or corruption). This, in turn, leads to a lack of trust in the regulator and government in general. Transparency requires a set of measures that assist all stakeholders to understand and have confidence in regulatory processes and decisions. Such measures include the following: clarifying the objectives and functions of regulation; stakeholder consultation in the process of developing new regulatory methodologies and standards; publishing final standards, regulatory contracts, and regulatory methodologies, including scheduled tariff review procedures and timetables; public hearings where stakeholders can make submissions and inputs into important regulatory decisions; written public explanations of regulatory decisions; prescheduled independent regulatory reviews and impact assessments; accountability through appeal mechanisms; and open access to information. Transparency measures provide a common understanding of the “rules of the game” and how they are applied (Eberhard, 2007).

In terms of accountability it is important to stress how contracts may improve it compared with other conventional procurement mechanisms. The most important benefits of PPPs relative to conventional procurement arise from the efficiency gains associated with private management of relevant risks and enhanced government accountability, rather than from access to private finance.

The key benefits from PPPs relative to conventional procurement (where the government is responsible for investment, operations and all project risks) are “potential”, in the sense that they will only be realized if the public sector rises to the challenge of appropriate contract design and monitoring and if private sector performance is spurred by the disciplines of transparency and competition where feasible (especially for the right to provide the specified services). Benefits include:

- **Enhanced government accountability.** Strategic clarity is achieved by focusing government resources on contract design and management of contract outcomes (procurement, monitoring and performance evaluation), which in turn facilitates accountability. Accountability enhances access to increased levels of local and foreign private finance. PPP projects are ultimately financed by local consumers through user charges and/or by taxpayers through (hidden or explicit) top-up subsidies or direct payments. To the extent that there is no dedicated stream of user charges to fully fund the provision of the public service, PPPs are an additional claim on public resources just as conventional procurement, requiring a stream of payments to be set aside to meet the obligations entered into under the contract.

- **Transfer of appropriate risks** to private sector management, generating “value-for-money” (defined as the optimum combination of whole-life costs and quality to meet user needs). While planning and regulatory risks are mainly borne by government, design, construction, operation, third-party liability and latent defect risks are typically more efficiently borne by the private provider (with demand or volume risks typically allocated between both parties). The main gains so far appear to come both from avoidance of time and cost overruns during the design & build phase (through fixed price & date certain contracts for asset provision), and from improved operational performance – driven by private sector commercial and managerial skills and incentives, and adoption of best practice technologies and innovative
practices. It is still early for the expected long-term operational benefits of PPP procurement in terms of whole-life costing and locked-in standards to have become apparent.

But contracts should be viewed with caution because while transparency and accountability may be internalized, they only tackle generic risks. Generic risks deal with mechanisms to prevent major failure in operation and management. If public sector has accumulated experience more sophisticated contracts are needed to allocate risks into parties depending on the magnitude and conditions of the infrastructure sector. In such way allocation of risks and benefits can reduce significantly transaction costs. This is why we see in many countries that have developed substantial experience in PPP contracts, specialized units to design contracts where management is separated from industry regulators to avoid conflict of interests (Monteiro, 2006).

### 6.1.1 Other Governance Issues in Contract Design

Governance in PPP is essential to achieve and improve long-term service outcomes (Clifton and Duffield, 2006). Management, conversely, integrates efficiency through incentives into contractual agreements of PPPs. The interaction between these two concepts produces financial sustainability and credibility of PPPs. Commercial benefits, public interests, and community acceptance are tested through project procurement and bidding processes and are rectified contractually with terms and conditions that involve charge/pricing regimes, risk allocation and expectations of contract compliance. Behavior of participants in PPPs and the incorporation of any changes are managed throughout the life-cycle of these contacts.

Recently, governance and management issues have been focusing on the identification of appropriate projects that provide management engagement. Management is important because it delivers service subject to numerous variations in contracts where societal interests and regulations make it difficult to confront such variations.

*Societal Interests:*

**Distributional Equity**—Ensure those who benefit from infrastructure share the costs and that those who are disadvantaged are compensated.

**Intergenerational Equity**—Ensure the cost of infrastructure is fairly distributed over the life of the asset such that current users do not pay in advance for future demand. Management and governance provide the basis for this particular aspect of equity.

*Regulation:*

The role of regulation is to manage reasonable limits expected by society. It is related to ensure that variations to the contract agreement are due to exogenous factors rather than the responsibility of the concessionaire. It also offers control of pre-agreed service criteria such as maintenance. Regulation can help in many times to provide with the general principles of contract administration and the provision of an independent body to receive and investigate complaints, environmental issues, and social harms. In sum it
provides a liaison between stakeholders and project’s management. The difficulty to introduce a regulator is that authority may undermine the commercial integrity of the original financial transaction established during the tender process.

As a final remark, in the presence of agency costs and renegotiation, ex ante transparency stipulated in contracts is also subject to incentive problems. For instance, while a sponsor may learn about his preferred design for a highway by making the right surveys and developing models that will take into account the evolution of economic variables like the cost of petrol, the growth of urban population, and the effect of corporate taxes on the location of firms and industries, these studies are expensive and time consuming. The sponsor may then decide to wait and negotiate a change in design rather than invest ex ante with a view to giving more information to the potential contractors.

6.1.2 Balancing risks and sharing benefits between the partners

PPP contracts are characterized by a relevant level of risk transfer to the private-sector party, although the specific risk allocation varies with the form of PPP used for the project, as different is the scope of activities delegated to the private sector. Infrastructure projects involve long term contracts that allocate risks between the public and private parties.

The crucial point of designing a contract is first to recognize type of risks faced given the nature of the project, but also to provide the incentives in the contractual arrangement to tackle such risks. Those incentives have to target on reducing long-term costs and keeping projects within their planned timetables and budgets. In addition, the quality and revenues yield should also be included within the incentive structure. In that way, contract design will tackle the majority of endogenous risks. In that case, the allocation of risks between the public and private parties involved is crucial. This involves the definition of responsibilities, rewards, and transparency of processes to assure adequate risk insurance (Iossa, Spagnollo, Vellez, 2007).

Optimal risk sharing means it is efficient for less risk-averse parties to take a bigger proportion of the risk. One could argue that the government should be less risk averse than private operators, for which large infrastructure projects would potentially imply large risks that are not easy to diversify. This casts doubts on the government’s ability to save money through PPP financing schemes. Instead, one should expect the private contractors to demand a higher remuneration from the government for having to bear significant risks. Moreover, private contractors will face less favorable financing conditions in capital markets because they are ‘worse risks’, having a higher default probability than the government, which benefits from its ability to tax. Pure risk sharing considerations, therefore, do not seem to offer a justification for PPP. Therefore, pure risk-sharing considerations do not seem to offer a strong justification for PPPs. In reality, the problem comes from the difficulty of disentangling exogenous risk from endogenous risk, that is, what the contractor can influence through his action.
Optimal risk sharing implies that the marginal cost of shifting risk from the public to the private sector equals its marginal benefit. It is therefore a good idea to neutralize the effect on the contractor’s compensation of purely random shocks that can be independently observed. Relative-performance evaluation is thus about partly filtering out common shocks to lower the risk borne by each contractor for a given strength of incentive pay. Its goal is not primarily to induce contractors to work harder by pitting one against the other. But it is true that the availability of another contractor’s performance measure leads to higher effort at the optimum by strengthening the relation between individual effort and performance.

Allocating the responsibility and ownership to the private sector through an ex-ante designed contract, aimed at delivering goods or services, depends on its comparative advantage in achieving efficiency and equity. A government that designs the characteristics and quality attributes through contracts chooses the degree of involvement from a private party to build and retain ownership. Managing and owning assets is highly relevant in contract design since it provides the necessary incentives to allocate efficiency.

If we consider the different stages of a project as comprising the design (D), the building (B), the finance (F) and the operation and management (O), we have that PPPs differ in terms of which of these four stages are delegated to the private sector. However, the term PPP is generally used to indicate a substantial involvement of the private sector in at least the building (or renovation) and operation of the infrastructure for the public-service provision. The bundling of project phases encourages the private-sector party (typically a consortium of firms) to think about the implications of its actions on different stages of the project (from the building to the operation) and thus favours a whole-life costing approach (Bennett and Iossa, 2006; Martimort and Pouyet, 2007).

In order to achieve efficient risk allocation Iossa, Spagnollo and Vellez (2007) propose two principles under which the issues of incentives and risk premiums minimization can be aligned so that risk is optimally allocated:

i. When the public-sector party is more risk averse than the private-sector party, then risk transfer to the private-sector party helps both to ensure incentives over non-contractible actions and to minimize the total cost of the project. The optimal risk allocation then calls for the private-sector party to bear all the risk.

ii. When the public-sector party is less risk averse than the private-sector party, then risk transfer to the private-sector party generates a trade-off: it helps to ensure incentives but it may lead to an excessive risk premium. Typically, however, the incentives consideration prevails and the efficient risk allocation has the private-sector party bearing a substantial amount of risk, the more the less risk averse it is.

**Bundling and Alliancing**

The concept of bundling management and ownership into a single contract may prevent non-verifiable outcomes and reduce moral hazard, but it can also have negative consequences by delivering services that do not meet social welfare objectives. Under
moral hazard, there is a trade-off between providing incentives to the builder to improve the quality of infrastructure and giving him insurance against adverse shocks on the realized quality. This decrease quality of assets may excessively increase operating costs and this exerts a negative externality on the operator if building and managing assets are unbundled. So the design of the contract has powerful consequences on efficiency through incentives because the contract also determines the degree in which risks are allocated between public and private parties. But in complex environments it is difficult to make complete contracts that can anticipate all endogenous and exogenous shocks, and that distribute risks evenly. Complete contracts cannot anticipate quality attributes of infrastructure interventions, and thus ownership can provide the incentives to improve quality.

Bundling contracts may be taken carefully when designing them since the may indeed provide efficiency gains, but such gains may be offset by influence costs and other intrinsic costs. In fact, bundled or unbundled contracts could be optimal depending on the type of externality between tasks and industry attributes. Inefficiencies in assets quality-enhancing and cost-reducing tasks stem from the hold-up problem that arises when no contract can be written and only ex-post negotiation between the government and the private party is feasible.

Holmstron and Milgrom (1991) showed that incentives in one task may destroy incentive in another when tasks are substitutes in agent’s cost function. In many infrastructure concessions many tasks tend to be substitutes, which then put pressure on costs. Martimot and Pouyet (2008) found that higher quality induces positive externalities when building infrastructure projects and thus reduces operating costs to the agent. This happens when, for instance, roads are build with design standards makes it easy to reduce accidents and enhance safety. In the case of negative externalities, novel infrastructure design calls for innovating in most operating tasks, giving up routines and learning to new processes. For example, airports that have designs that facilitate passengers to access terminals and other services may nevertheless be accompanied by increased costs in providing such services. Therefore, trade-offs in externalities deal with risk-averse agents and thus require the adequate incentives to exert effort on agent’s tasks in order to reduce the risk he bears for insurance purposes.

When positive externalities are lower than costs, bundling concessions may be an adequate option for delivering certain infrastructure services. This is when consortiums are created to align risk profiles into a one-risk entity. Merging two agents may be better to share risk because benefits are a coordinated choice which may dissipate agency problems. This is true only when riskiness is different for both agents. When agents have identical risk-averse firms, efforts are mutually observable and benefits perfectly distributed. The presence of production externality between building and operating assets raises the issue of optimal organization of such tasks. Bundling allows to better internalize externalities and improves incentives when the externalities are positive. When externality is negative, unbundling in different agents reduces agency costs and is socially preferable. Bundling or unbundling becomes then a crucial issue when designing a contract.
Regardless of the short-term political motives, the value for the public sponsor of a PPP lies on the cost and the quality of service, with cost and quality depending on the financing, bundling, and operation of the project. There are clear links between financing, building, and operating infrastructure concessions, but inefficiencies may arise unless the party responsible for building is induced to internalize possible externalities on the operating phase. The potential costs of these inefficiencies can be large if, for instance, poor construction raises the risk of a bridge collapsing during a storm. As recent work has shown, the builder has an incentive to internalize externalities if he also has the right to operate and maintain infrastructure.

In choosing between bundling or unbundling of soft (organization, customer service) and hard (works, maintenance) services, there is a trade-off to consider. Bundling soft and hard facility-management services in the contract has the advantage that, being responsible for providing both soft and hard services, the private sector party cannot argue availability failures are not its fault but an otherwise independent soft service provider’s. On the other hand, there are benefits for the public-sector party in unbundling soft and hard services, and thus in dealing with separate soft-service providers. These benefits arise, for example, because soft-services provision generally requires less capital investment (if any) than hard-services provision. A decision to unbundle services is to be made considering not only the above trade-off, but also other sector- and country-specific factors.
Novel mechanisms can provide governance and managerial incentives to increase the value of infrastructure concessions under complex regulatory contexts. Alliance contracting of PPP/PFI can result in improved long-term service outcomes through enhanced governance structures and management, which in turn lead to greater value for money over the long-run. Alliance contracting is referred as an agreement between parties to work cooperatively to achieve agreed outcomes on the basis of sharing risks and rewards (Clifton and Duffield, 2006). There are certain features that differentiate alliances from conventional partnerships regarding risk allocation structures:

a) Instead of a conventional requirement for the owner to reimburse project costs (which inherently always rest with one party) performance obligations are stated to be collective. In that way, the regulations are determined in order to maximize efficiency in operation because excessive regulations can enhance costs. In addition, social costs are internalized more efficiently since performance obligations depend on common objectives.

b) All parties win and loose together. Reimbursement to the non-owner participants (NOPs) is 100% open book and structured so that NOPs receive an equitable

### Risk Classifications

<table>
<thead>
<tr>
<th>Typology of Risks</th>
<th>Process Covered</th>
<th>Type of Infrastructure Project</th>
<th>Mitigation Through Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statutory/Planning</td>
<td>Permission for construction; timing or Costs of Planning</td>
<td>Transport, Airports, W&amp;S, Energy, Telecom</td>
<td>Highly Endogenous/Low Exogenous</td>
</tr>
<tr>
<td>Misspecification of output requirements risk</td>
<td>Output characteristics specified in the contract; contractual obligations are ill or not clearly described</td>
<td>Energy, Airports, W&amp;S, Transport</td>
<td>Highly Endogenous</td>
</tr>
<tr>
<td>Design risk</td>
<td>Risk of failing to complete the design process; possibility of changes in technical standards during the design phase</td>
<td>Highway Roads, Airports</td>
<td>Highly Endogenous</td>
</tr>
<tr>
<td>Construction risk and time schedule risk</td>
<td>Changes in labor and materials costs, inadequate cost management, inefficient construction practices</td>
<td>W&amp;S, Roads</td>
<td>Highly Exogenous/Moderately Endogenous</td>
</tr>
<tr>
<td>Operation risk</td>
<td>Shortage of skilled labor, labor disputes, late delivery of equipment, poor maintenance schedule</td>
<td>Telecom, Energy, W&amp;S</td>
<td>Highly Endogenous</td>
</tr>
<tr>
<td>Demand risk</td>
<td>Making lower-than-expected revenues if the actual demand for service falls short</td>
<td>Highway Roads, Energy, W&amp;S</td>
<td>Moderately Exogenous</td>
</tr>
<tr>
<td>Risk of changes in public needs</td>
<td>Changes in society's preferences; relative importance of this risk increases with contract length, as for a longer contract the chance of changes in public needs is greater</td>
<td>Transportation</td>
<td>Moderately Exogenous/Moderately Endogenous</td>
</tr>
<tr>
<td>Legislative/Regulatory risk</td>
<td>Unexpected modifications in tax legislation, tariff-setting rules, and contractual obligations</td>
<td>Telecoms, Energy, W&amp;S</td>
<td>Highly Exogenous/Moderately Endogenous</td>
</tr>
<tr>
<td>Financial risk</td>
<td>Interest and exchange rate fluctuations, capital controls restricting convertibility and transferability of profits</td>
<td>Telecoms, Airports</td>
<td>Highly Exogenous</td>
</tr>
<tr>
<td>Residual value risk</td>
<td>Risk of holding a facility</td>
<td>Energy, Highway Roads, Telecoms, Airports</td>
<td>Moderately Endogenous</td>
</tr>
</tbody>
</table>

Source: Adapted from Iossa, Spagnollo and Vellez (2007)
sharing of gain and loss depending on how actual outcomes compare to pre-agreed targets in cost and non-cost performance areas.

c) Alliances provide better legal ground to reduce probabilities of litigation which can be costly and can undermine projects’ efficiency. The strong commitment of shared interest reduces friction between the parties and induces more cooperation to take corrective decisions.

**How Alliencing Techniques could be utilized in PFI/PPP projects?**

During the 1990s PPP projects using alliances where mooted to implement a full alliances. But alliances combine the benefits of private sector risk taking with government’s comparative advantage in securing funds. Alliances bring, however, their own risks. One is the risk of not getting the incentives and sanctions right (Guasch, 2002). There is a need to ensure that the alliance delivers value for money. An alliance should not compromise the principles of accountability and transparency that are so integral to the public sector. Efficient risk allocation may achieve timely and cost-effective delivery targets, instead of transferring risks which will involve paying a risk premium to the contractor for taking those risks and hence increase project costs.

### PPPs and Incentives of Project Alliance

<table>
<thead>
<tr>
<th>Comparison of Allocation Structure</th>
<th>PPP Conventional Allocation</th>
<th>Alliance &quot;Pure&quot;</th>
<th>Public Private Alliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Risks (local conditions, environment)</td>
<td>Private Party</td>
<td>Shared except in the case of wilful default</td>
<td>Shared except to the extent caused by a breach of the contractor</td>
</tr>
<tr>
<td>Design Construction and Commissioning</td>
<td>Private Party</td>
<td>Shared except in the case of wilful default</td>
<td>Shared except to the extent caused by a breach of the contractor</td>
</tr>
<tr>
<td>Financing</td>
<td>Private Party</td>
<td>Government</td>
<td>Private Party</td>
</tr>
<tr>
<td>Tax</td>
<td>Private Party</td>
<td>Government</td>
<td>Private Party</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Private Party except to the extent of specific gov. commitments (availability payments, traffic network changes, interface, etc.)</td>
<td>Government</td>
<td>Shared except to the extent caused by a breach of the contractor</td>
</tr>
<tr>
<td>Market</td>
<td>Private Party</td>
<td>Shared except in the case of wilful default</td>
<td>Private Party</td>
</tr>
<tr>
<td>Industrial Relations</td>
<td>Private Party</td>
<td>Shared except in the case of wilful default</td>
<td>Private Party</td>
</tr>
<tr>
<td>Legislative and Government Policy</td>
<td>Private/Public (when changes in law/policy of the State is directed specifically to the project)</td>
<td>Shared except in the case of wilful default</td>
<td>Shared except to the extent caused by a breach of the contractor</td>
</tr>
<tr>
<td>Force Majeure</td>
<td>Private Party except when gov. holds some risk of service discontinuity subject to insurance availability</td>
<td>Shared except in the case of wilful default</td>
<td>Private Party except government holds some risk of service discontinuity subject to insurance availability</td>
</tr>
<tr>
<td>Asset Ownership</td>
<td>Private/Public</td>
<td>Government</td>
<td>Private Party</td>
</tr>
<tr>
<td>Governance</td>
<td>Private/Public</td>
<td>Government</td>
<td>Shared</td>
</tr>
<tr>
<td>Management</td>
<td>Private/Public (when specific managerial commissions are assigned)</td>
<td>Government</td>
<td>Shared</td>
</tr>
</tbody>
</table>

Source: Adapted from Clifton and Duffield (2006)

In the table above the public private alliance discussed enhances governances and management because the risks are shared. However, the risk sharing premise of alliancing in PPPs requires integrating budget security. The implementing risk sharing mechanism makes it difficult to have prospects of budget allocations on a multi-year basis since each
party adapts to respond to the challenges and risks that emerge. Regardless the obstacles in having multi year budgets in alliancing which can turn complex, incentives in alliances are based on traditional scopes of work contracts and risk allocations, making these arrangements more flexible than PPP/PFI contracts.

Risk allocation principles of PPP/PFI projects are easily written in contracts, but much more difficult to implement. Alliancing allows allocate management of risks at least cost regardless the party associated with this responsibilities. Alliancing may induce fewer contract specifications in commercial requirements, bargaining power and financiers requirements (Clifton and Duffield, 2006). But alliancing is difficult to implement in projects with great degree of complexity such as large infrastructure or multisectorial projects.

### Laws and Decrees on Risk Allocation: Latin America

**Efficient Risk allocation**

[Brazil: Lei 11.079, Art. 4]
The following guidelines shall be observed when contracting public-private partnerships:
VI – objective risk sharing among the parties;

[Peru – Decreto Legislativo n. 1012 Art. 5]
Asignación adecuada de riesgos. Debería existir una adecuada distribución de riesgos entre los sectores público y privado. Es decir que los riesgos deben ser asignados a aquel con mayores capacidades para administrarlos a un menor costo, teniendo en consideración el interés público y el perfil del proyecto

**Inefficient risk allocation**

Que una forma de incrementar la eficiencia en el uso de los recursos del sector público es transferir a los sectores social y privado la mayor cantidad de riesgos y contingencias relacionados con los costos financieros y de ejecución de obras, mediante la utilización de esquemas para la realización de proyectos para prestación de servicios con base a los cuales se celebran contratos de servicios de largo plazo, a fin de que el gasto de cada ejercicio fiscal se concentre en los aspectos más importantes de la función pública.

**Optimal Risk Sharing Contracts**

PPP cannot rest on the claim that they relieve strained budgets. As mentioned above, one justification of PPPs is that bundling may enhance productive efficiency. An additional advantage of PPPs is that they reduce the sums flowing through the public budget, reducing the inefficiencies associated with subsidy transfers. In this section we derive the optimal contract when subsidy financing is less efficient than user-fee financing (Engel et al. 2008).
When thinking about the risk allocation implied by PPPs, what matters is the inter-temporal risk profile of cash flows, not the year-to-year risk profile. This has interesting implications: for low and high demand projects, an optimal PPP contract replicates the net cash flow streams of conventional (‘public’) provision. Under privatization, the project is sold for a one-time payment and all risk is transferred to the firm. Moreover, the link between the project and the public budget is permanently severed. This is not the case with a PPP, where at the margin cash flows from the project always substitute for either taxes or subsidies. The conclusion, then, is that from a public finance perspective there is a strong presumption that PPPs are analogous to conventional provision—in essence, they remain public projects, and should be treated as such (Engel et al, 2008).

**Optimal risk-sharing contract: overview**

The tradeoff faced by the planner when some of the resources are wasted in the process (\( \xi > 0 \)) is the following: On the one hand, she would like to utilize user fee revenues as far as possible to compensate the concessionaire, in order to avoid paying subsidies. On the other hand, using only user fees may expose the concessionaire to excessive risk, and an efficient contract would insure against low demand states through subsidies.

The figure above shows how the trade off is resolved optimally when \( v_{\min} < I < v_{\max} \) i.e., there are some states of demand in which user fee revenues is smaller than \( I \) while there are others in which revenues are larger than \( I \). The horizontal axis plots the support of \( v \) while the vertical axis shows the total revenue received by the concessionaire in each state, \( R(v) + S(v) \). To derive the optimal contract, note that in state \( v \) the planner will only resort to subsidies after exhausting user fees—otherwise, it could slightly reduce subsidy payments, which would save \( (1 + \lambda)(1 + \xi) - \alpha \); and increase \( R(v) \) which would cost only \( 1 + \lambda - \alpha \). Thus,

\[
R(v) < v \implies S(v) = 0
\]

In these states the concession lasts indefinitely, for otherwise they would be high demand states. But no subsidies are paid out by the government, for otherwise they would be low demand states.

It follows that \( R(v) = v \) and \( S(v) = 0 \).

Transparency of risk allocation

[Brazil: Lei 11.079, Art. 5]
Art. 5. The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:
III – the sharing of risks among the parties, including those that refer to acts of God, force majeure, acts of State and unforeseeable events;

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
20. Las dependencias y entidades deberán presentar las solicitudes de autorización de proyectos para prestación de servicios ante la Secretaría, a través de las Direcciones Generales de Programación y Presupuesto sectoriales. En el caso de entidades sectorizadas, la solicitud deberá ser presentada por la dependencia coordinadora de sector y, en el caso de las entidades no sectorizadas, la solicitud deberá presentarse por la entidad, directamente a las citadas Direcciones Generales.
21. Las solicitudes a que se refiere el numeral anterior deberán acompañarse de la siguiente información:
VI. Los elementos principales que contendrá el contrato de servicios de largo plazo que se celebraría entre la dependencia o entidad contratante y el inversionista proveedor, incluyendo:
d) Los riesgos que asumirán tanto la dependencia o entidad contratante como el inversionista proveedor.

Transparency of the liabilities, undertakings, commitments, guarantees, and contingent liability

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
32. Las dependencias y entidades deberán enviar a la Secretaría, por conducto de la Dirección General de Programación y Presupuesto sectorial que corresponda, a más tardar el último día hábil de septiembre, la actualización de los montos correspondientes a obligaciones de pago para ejercicios fiscales subsecuentes que se hayan asumido en los contratos de servicios de largo plazo. La Secretaría incluirá dicha información en el proyecto de Presupuesto de Egresos de la Federación del siguiente ejercicio fiscal.

[Brazil: Lei 11.079, Art. 5]
The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:
II – the penalties applicable to the Public Administration and to the private partner in case of non-compliance with contractual obligations, which shall always be determined proportionately to the magnitude of the offence committed and to the obligations assumed;
VI – the facts that trigger public sector payment default, the means and terms for reestablishing the payment stream and, if applicable, the form by which guarantees are enforced;

6.1.3 Government Guarantees
Government guarantees can help persuade private investors to finance valuable new infrastructure, but because costs are hard to estimate, and usually do not show up in the
government’s accounts, governments can be tempted to grant too many guarantees. One way to ensure that the costs of guarantees are considered alongside their benefits is to agree to them in the budget. If the government sets a limit on total spending and the budget rules count the cost of guarantees, a decision to grant a guarantee can require dropping another spending proposal. The cost of a guarantee therefore becomes the loss of the benefits of the project it displaces. If the costs of guarantees are truly captured in the budget, the need to involve the minister of finance or the cabinet in decisions about particular guarantees is much reduced (Irwin, 2007).

A second way to improve incentives by ensuring that costs as well as benefits are considered is to charge the beneficiary of the guarantee. The charge could be set equal to the estimated value of the guarantee, plus, perhaps, a premium to cover the government’s administrative costs. The beneficiary of the guarantee might be considered to be the firm, its lenders or investors, or the ministry promoting the project. If the beneficiary is charged, it must compare the price with the benefits of the guarantee and decide whether the guarantee is worth taking. Charging can thus reduce the chance of the government’s issuing guarantees less valuable to the beneficiary than they are costly to the government. Charging can also help draw the government’s attention to two possible purposes of a guarantee: to subsidize and to reallocate risk. Charging for a subsidy is, of course, self-defeating. But if the purpose is to subsidize, giving a guarantee may not make sense. Yet if the government’s purpose is to protect the firm from risk rather than to subsidize it, charging may be justified (Schick, 2002) [REF. Schick, 2002 “Budgeting for Fiscal Risk.” In Government at Risk: Contingent Liabilities and Fiscal Risk, ed. Hana Polackova Brixi and Allen Schick, 79–98. Washington, DC: World Bank.]

Charging won’t necessarily affect the firm’s profits. If the government offers a guarantee at a fixed price when it solicits bids for a project, the bidders can be expected to reflect the costs and benefits of the guarantee in the price they offer to charge. Thus, the winning firm’s expected profits won’t depend on the guarantee fee, even if the firm takes the guarantee and pays the fee. The guarantee can be expected to change the distribution of value between customers and taxpayers, but not the distribution of value between these two groups, on the one hand, and the firm, on the other. The main value of charging for the guarantee in this case is to prevent the government from giving the guarantee when the firm values it at less than the price.

One way to charge for guarantees explicitly in contracts is to demand exposure to upside risk in return for bearing downside risk. If the government offers a revenue guarantee, it can insist on sharing revenue above some threshold. If it gives an exchange-rate guarantee protecting the firm from depreciation, it can insist on getting a comparable guarantee from the firm that means the government, not the firm, benefits from appreciation. Doing so also limits the firm’s profits when things go well, which may be advantageous if the firm’s profits are public knowledge. It is more complex than charging in cash, however: getting the in-kind fee right requires estimating the cost of the revenue-sharing agreement as well as the guarantee.
**Trends in Innovative Guarantees**

*Partial credit guarantees* (PCGs) cover part of the debt service payment. Provided by a creditworthy guarantor, they improve the credit rating of a borrower’s debt issue and thus its market access and the terms of the commercial debt. Debt transactions using such guarantees reflect the hybrid credit risk of the guarantor (for the guaranteed part) and of the borrower (for the rest). The guarantee coverage can be structured flexibly, effectively sharing the credit risk between the lender (or bond investor) and the guarantor. The PRG was designed to protect the investors in the electricity distribution concession against the regulator making decisions that are in conflict with the tariff-setting provisions in the concession agreement.

*Full credit guarantees*, or *wrap guarantees*, cover the entire debt service in the event of a default, normally obtaining debt terms similar to those of the guarantor. These guarantees are often used by bond issuers to achieve the higher credit rating demanded by capital market investors. Wrap guarantees have been widely used for asset- or mortgage-backed securities in the United States. Companies that provide wrap guarantees are usually known as *monoline* insurers. Some official agencies also provide such guarantees.

Source: Matsukawa and Habeck, 2007

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### 6.1.4 Defining public goals through measurable output based specifications

There has been a shift in recent years to innovative mechanisms that has allowed PPP to define public goals in a more effective way. Proponents of PPPs have asserted models that encourage private sector innovation and thereby improve the (dynamic) efficiency and quality of public services. But this has proven not to be enough. Innovation in PPPs has been attributed mostly to the move from an input specification, under traditional procurement, to output specification. Output specification changes incentives because once works are terminated public sector assumes responsibility for continuing operation and maintenance. Under PPPs public sector provides an output specification wherein they specify the requirements for service to be provided. This allows competing bidders the scope to create innovative solutions under Value for Money, while attaining public sector goals.

By setting the output specification, the public-sector party delegates to the private-sector party the decision of how to organize the service provision. For the purpose of control and monitoring the service provision, the performance standards should be clearly defined, measurable in quantitative and qualitative terms, and verifiable by third parties like courts or arbitrators. The output specification is important not only for control and monitoring but also to design an incentive-oriented payment mechanism. Well-defined performance standards allow to reward the private partner for meeting them and to penalize it for failing to do it. This payment mechanism turns the private partner’s creativity and know-how instrumental to the pursuit of the public sector’s aims.
There should be simple and transparent rules linking payments to the measurable project deliverables determined in the output specification. These rules should be carefully designed to provide strong and appropriate incentives for the private-sector party to perform. Since the payment mechanism heavily affects the financial structure of the project, the rules should ensure the private-sector party is able to finance the project given the risks allocated to it, and that the public-sector party can afford the pledged payments.

The contract specification for a public private partnership affords the opportunity and freedom to potential contractors to propose innovative solutions which integrate the design, construction, operation and maintenance of a new or existing public facility. It should be expressed in terms of the service outputs and outcomes required rather than a tightly specified list of inputs. In some cases, the main outputs of projects may be green objectives, for example targets for recycling and composting in PFI projects for waste management. The specification should be sufficiently tight to ensure compliance with what is required but not so explicit that it discourages innovative solutions that offer good value for money. PPP contracts are based on output specifications in the sense that the public-sector party defines only basic standards of service, leaving the private-sector party with the choice as to how to meet and possibly improve upon these basic standards. The idea of the output specification is to provide incentives for innovative approaches, allowing for private sector’s skills and knowledge to feed into public service provision.

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<tr>
<th>Transparency of the criteria for evaluating the performance of the private partner</th>
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<tr>
<td>[Brazil: Lei 11.079, Art. 5] The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state: VII – the objective criteria for evaluating the performance of the private partner;</td>
</tr>
<tr>
<td>[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004] 27. LA solicitud de autorización, las dependencias y entidades deberán anexar los siguientes documentos: I. El proyecto de contrato de servicios de largo plazo, que deberá contener, entre otros términos y condiciones, los establecidos en la fracción VI del numeral 21, así como los siguientes: h) La metodología y fórmulas para evaluar el desempeño del inversionista proveedor y, en su caso, la forma y términos en que se determinarán, calcularán y ejecutarán los descuentos que resulten aplicables, de acuerdo al título IX de estas Reglas;</td>
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But output specification may give rise to multiple problems. First, output characteristics specified in the contract, in the form of contractual obligations, may be ill or not clearly described. Problems may also arise to the extent that the output specifications could be inconsistent with the infrastructure needs that the PPP intends to satisfy, and that should be identified by conducting a careful assessment previous to the contract drafting. Mistakes at the contract drafting stage can be very costly for the public sector party because of the long-term nature of PPPs.
6.1.5 Contract Incompleteness and payment mechanisms

In PPP/PFI contracts, contractors are paid to deliver particular levels of service which is set out in the contract, or service agreement. Client should not specify how the services will be delivered, but they do retain the right to incentivize contractors to ensure the services are up to their required standards. This right is usually exercised through a relatively elaborate payment mechanism that decides the amount of cash paid to the contractor on a month by month basis, known as the unitary charge.

This mechanism for determining the level of cash paid also has a big impact on the relationship between clients and their contractors. Therefore, for PPP/PFI contracts to work well, it is important the way cash payments are assessed and made by the client not only take account of the clients’ expectations, but also the needs of contractors.

In addition, a prerequisite for successful PPPs is a credible legal and regulatory framework that protects private sector interests and property rights and enables commercial contracts to be legally enforced. It is also of vital importance that the government agencies have the necessary authority to grant concessions and licenses, and this is often made possible through specific concession laws. No contract can be totally complete, because not all the information regarding the PPP is available at the time of contracting. It is therefore important to have mechanisms in place that can solve disputes and potential conflicts of interests in a cost-efficient manner.

Financiers want to be paid for any borrowings on capital assets in which they have an interest. Payment mechanisms should be structured accordingly to meet these payment objectives over the life of the contract. This is can be achieved by having two kinds of deductions from the unitary charge:

- Availability deductions
- Service delivery deductions.

The primary purpose of separating these deductions is to ensure that any penalties for service failure are proportionate to the cost of providing those services. However, it also allows portions of the payments from the client to be ring-fenced by contractors so that finance payments can flow more directly to the financiers and the service payments can flow to the appropriate sub-contractor. Separating these cash flows also allows the performance of each sub-contractor to be monitored separately and more easily. It can also ease the process of replacing an under performing sub-contractor by the main contractor if this is the case (Arizu, Gencer and Mauer, 2006).

Some or all of the unitary charge is usually indexed through application of a relevant index, for example inflation or average wages. These indices must be chosen with care. While they may not be directly relevant to the underlying cost stream (and in the PFI contracts, it is usual for there to be no link between cost structure and the index used for risk transfer purposes), it is possible that unrelated indices could lead to cost and prices
becoming misguided and perhaps unsustainable. In any event, the client should be aware that it will pay a premium at the start of the contract to cover any perceived inflation risk.

In practice it is unlikely that a PFI/PPP contract is likely to be fundable unless caps are placed on any performance deductions made from the contract over a period of time. The size of the cap is usually related to the proportion of the unitary charge which is paid to the contractor.

**Availability Payments and Performance Payments**

Availability payments should relate to the usability of the asset(s). In the case of the provision of a building the availability measure could take into account the importance of each part of the building by:

- Measuring the environment of the building to make sure that it is within specific limits (often known as availability criteria). Any breach of these limits results in a deduction from the availability payment or when social and environmental safeguards are not met

- The size of deduction should relate to importance of area and period

It is important to avoid large sums of money being deducted from contractors for small transgressions, as this would be unfair. This situation can be avoided by the contractor given a reasonable period to rectify any problem but once this period is exceeded the deductions it can then be accelerated to encourage the contractor meet the requirements of the PPP/PFI contract more quickly.

Deductions from payments to contractors arising from any unavailability are usually calculated using an agreed unavailability tariff – based on the level of importance of various areas in the physical infrastructure. Each area is allocated a charge (tariff) per period of measurement that represents its importance to the client. The total of the unavailability tariffs in any one measurement period does not necessarily have to relate to anything, but is usually one to two times the availability charge for that period of time.

In the case of parallel services of PPPs, availability is measured by units of types of area, such as personal offices, open plan offices, restaurants or corridors. If any area fails its availability criteria, the area is deemed unavailable. Availability should be measured during the normal operational hours of the infrastructure. It is good practice to split the working day into more periods (say by the hour) to measure availability. This incentivizes the contractor to fix the problem as soon as possible, as it will be able to stop the unavailability “clock” that much earlier. However, in many situations, it does not make sense to the client to close an area for a short period of time, and in this case the availability period will be linked the actual time the client will be unable to use the area. For example, if a courtroom becomes unavailable, the court manager may have to cancel a half day list of cases at a time.
It is possible to define a trigger level, above which the whole building counts as unavailable. This may be a certain percentage of the building, or relate to particular key rooms. In the case of whole building or site unavailability, clients can choose to vacate the site. In this case, the total charge covering availability for that measurement period should be deducted from the payments due to the contractor. Mechanisms usually include a rebate on the deduction if the client does not depart from the unavailable area. Another complication can be added in the form of consequential unavailability, which makes deductions for areas which are not affected by the unavailability incident, but will not be used because another area is unavailable – for example, rooms off a corridor when the corridor itself is unavailable.

Finally, contractors should be allowed time to put right any area that becomes unavailable. The rectification period should be practicable to allow the appropriate personnel to attend each incident. If a failure is not rectified by the end of that period, then an unavailability deduction should be made. Clients should note that a short rectification period will signal to the contractor that a higher level of resources is needed to service the contract, for example an on-site engineer. Clients should therefore ensure that this is necessary before requiring it – as it will obviously increase the price of the contract.

Output-based specifications identification

[Peru – Decreto Legislativo N. 1012]
Art. 7 Las entidades públicas identificarán los niveles de servicio que se busca alcanzar, a partir de un diagnóstico sobre la situación actual, señalando su importancia en las prioridades nacionales, sectoriales, regionales y locales, según sea el caso, en el marco de las cuales desarrollan los proyectos de inversión.

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
Art. 10 Las dependencias y entidades no deberán realizar pago alguno al inversionista proveedor antes de recibir los servicios objeto del contrato de servicios de largo plazo, salvo que la Secretaría autorice pagos anticipados conforme a los términos y condiciones establecidos en el contrato respectivo.

Measurable service outputs.
[Victoria (Australia) - Partnerships Victoria, Practitioner’s Guide, 2001]
Government requirements can be expressed and measured in output terms. Payment mechanisms are generally structured around these output specifications to provide incentives for achieving key performance indicators;

Payment related to level of output achieved

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]
Art. 31 El contrato de servicios de largo plazo deberá contener una metodología específica que
permite evaluar el desempeño del inversionista proveedor. En caso de que el desempeño del inversionista proveedor, evaluado mediante la metodología prevista en el contrato de servicios de largo plazo, sea inferior al convenido, se aplicará un descuento al pago que deba realizar la dependencia o entidad contratante o alguna otra forma de penalización por deficiencia en el desempeño. El cálculo del descuento o la determinación de la penalización se hará conforme a las fórmulas que al efecto se establezcan en el contrato de servicios de largo plazo.

[Brazil: Lei 11.079, Art. 5]
Art. 5. The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:
V – the mechanisms to preserve the nature of the service provision;

II - La rémunération du cocontractant fait l'objet d'un paiement par la personne publique pendant toute la durée du contrat. Elle est liée à des objectifs de performance assignés au cocontractant.

Output specifications as mandatory contract clauses

[Brazil: Lei 11.079, Art. 5]
The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:
V – the mechanisms to preserve the nature of the service provision;
VII – the objective criteria for evaluating the performance of the private partner;

Art. 7. The payment provided by the Public Administration shall obligatorily be preceded by service delivery.
Sole paragraph. According to the terms of the contract, the Public Administration may pay the private sector partner for the portion of the service that is made available.

Performance payments for the services under a PPP/PFI contract should be SMART (specific, measurable, achievable, realistic and time-bound) and linked directly to the requirements of the ‘output specification’ for the PFI/PPP contract. They should also be weighted to reflect the importance of each test. The performance of contractors can be measured against a series of key performance indicators (‘KPIs’). Services that fail to meet these KPIs will attract a penalty. Each KPI should be weighted to reflect its importance to the client, and the size of the penalty will be directly linked to the weighting of the KPI. It should be noted that it is not unusual for contracts to allow some failures to occur before a deduction is made. For example, a building may be allowed to have five areas identified as dirty during any 30 day period before a deduction is triggered. Subsequent breaches would attract deductions, which can be ratcheted to reflect a higher level of service failures overall. The KPIs are useful to ensure output given compliance to specifications and deliver payment mechanisms (see graph below).

If outputs do not meet specifications, contract is not awarded (if project is in the bidding process) or contractors may be penalized. The area where KPIs are met and public sector underperforms in relation to the private contractor (in terms of cost and delivery) is where contractor is subject to payment.
In addition to deductions within individual services, clients could also consider escalating the deductions further aimed at penalizing poor overall management of the services. For example, when total service deductions pass 25% of the month’s unitary charge, an additional deduction of 5% could be added. However, if this kind of structure is adopted, it is very important to ensure that one ratchet does not cause the other one, as this is unfair to the contractor.

Contracts, or project agreements, generally contain a provision that links termination to a level of deductions over a period of time (measured as a percentage of the unitary charge), or to the number of KPIs failed in that period of time. It is critical to the fair operation of the contract that the payment mechanism is graduated and does not contain any ‘small triggers’ that could lead to a termination for a minor transgression. If it does, then the contractor will have priced for this risk and included for it in the payment mechanism – the client will therefore be paying over the odds for the service. One way of ensuring that the termination provisions do not contain any nasty surprises is to construct an escalating system of warnings and lesser penalties before the final termination position is reached. Payment mechanisms are often in more innovative contracts where risks are shared between the parties and performance is attached to costs and service delivery.

Payment Mechanisms and Risk Sharing provide a Cooperative relationship
Cost Plus Payment (CPP) and Fixed Price Payment

This payment mechanism is based on documented proof of cost to reimburse the contractor. The public-sector party agrees to reimburse construction and operation costs associated with the infrastructure project plus a fixed and in some cases a variable fee. Formally, the payment $P$ would be a linear function of the cost level $P = F + (1+m)C$, where $C$ is cost, $F \geq 0$ is a fixed fee and $m \geq 0$ is the mark up the private-sector party can charge on each unit of documented cost. Since the private-sector party is fully insured against any cost increase that can happen in the construction and operation phases, a cost-plus payment gives no incentives to the private-sector party to exert any extra effort to reduce cost, as lower cost implies lower profits for the private-sector party (Albano et al., 2006a).

This is particularly problematic when large infrastructure projects are settled to cover CPPs because the private party will always gain from charging the documented cost, which are large if the total cost of the project is a proportion to accrue the construction and operation costs. When project is in an advanced stage these cost can indeed be substantial to the government and the society. A cost-plus payment may therefore not be an appropriate mechanism when the project’s total costs heavily depend on the private partner’s actions, precisely because incentives to save on costs are weak. The mechanism has also a negative effect on the tendering process to select a private partner when there is a high degree of uncertainty about the bidders’ efficiency.

Cost Payment Schemes
In the case of the fixed price payment, it does not require disclosure of the costs by the contractor. The public-sector party agrees to pay the private-sector party a fixed amount for the service provision that must achieve certain quality standards. It is then critical that a scheme of deductions is in place to guarantee that the quality standard is respected, so that payment scheme will be \( P = F - d(Qs - Q) \), with the previously clarified notation. Since payment do not change with cost, the private partner bears all the costs associated with the project and fully appropriates the benefits of cost-savings activities. Hence, a fixed-price payment gives the private-sector party strong incentives to undertake cost-reducing efforts.

**Transparency of the payments to the private partner and gain sharing**

[Brazil: Lei 11.079, Art. 5] The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state: IX – the sharing with the Public Administration of the economic gains of the private partner resulting from the reduction of credit risk related to the funding contracted by the private partner;

[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004] 27. LA solicitud de autorización, las dependencias y entidades deberán anexar los siguientes documentos: I. El proyecto de contrato de servicios de largo plazo, que deberá contener, entre otros términos y condiciones, los establecidos en la fracción VI del numeral 21, así como los siguientes: c) La forma, términos y condiciones de pago

**Other aspects of contractual incompleteness and economic incentives**

In PPPs there is a clear interaction between property rights, heavy bureaucracies and contract effectiveness, especially among developing countries. Recent research has been focused on the interaction between environments with insecure ownership bureaucracies
and enforceable contracts (Schwartz, 2008). This has clear economic consequences that result in underinvestment. The problem of underinvestment by private or public partners originates from the divergence of ex ante and ex post incentives to invest. The contractual arrangements constitute the ex ante conditions under which PPPs can reduce or minimize adverse incentives to underinvestment. Such contracts are routinely renegotiated and the resulting investment level is lower than when contracts are enforceable (Guasch, 2002; Schwartz, 2008). To improve investment incentives, economic agents employ a variety of commitment mechanisms to induce honoring of the ex ante contract. Ownership shares are based on ex ante contract, which the ruler could alter at an exogenous cost by using the bureaucratic machinery.

Any legal system that provides effective protection of property rights relies on the very same instruments that bureaucracies use. The literature on judicial enforcement and judicial review develops similar arguments. There is a substantial literature on law enforcement - starting with Becker (1968) and Stigler (1970, 1971) and all the way to a recent survey of the literature by Polinsky and Shavell (2000). Although they focus primarily on courts, the problem of contract enforcement under different conditions is explored extensively.

For example, consider the allocation of property rights for an asset produced by a regulated private firm. The firm’s ownership rights over the asset are limited and dependent on the regulatory restrictions. The ex ante property rights allocation resulting from these restrictions is frequently suboptimal ex post, and it is optimal to alter it ex post for social efficiency. This causes an ex post commitment problem for the regulator and results in investment distortion.

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**Best Practice: Capital and Revenue Support, and Debt Guarantees**

The New Southern Railway (NSR) project involved an underground line with 10-km, a two-track railway, and four stations. The Airport Link Company (ALC) was awarded a 30-year concession to design, build, operate, and finance the NSR. Around one quarter of the project budget was privately financed by debt and equity. The ownership of the land in which stations were built remained under the State Rail Authority (SRA), and the ALC had to pay a lease for using it. In the pre-design stage of the project, the statutory risk (i.e. approval risk) was borne by the SRA as five local governments had to approve the line passing through their territory. The design risk of the tracks, tunnels, and station infrastructure was transferred to the ALC through a lump-sum payment. Construction risk was also transferred to the ALC since it received an inflation-adjusted, lump-sum payment in exchange for delivering the infrastructure on time and with the quality level agreed in the contract. The contract fully allocated operation risk to the concessionaire, making it responsible for the operation and maintenance costs associated with the infrastructure management. While most revenues were collected in local currency, some of the major construction inputs were imported and paid in foreign currency, so the ALC bore exchange rate risk. By government subventions, the ALC shareholders were granted tax concessions to limit tax liability after debt servicing.

The contract set out a payment mechanism based on user fees, thus transferring demand risk to the concessionaire. In addition, the ALC was allowed to charge a station fee on the passenger tickets so as to recover its initial capital costs, and to earn secondary revenues from retail activities at the stations. Some important government guarantees were set in place: the SRA agreed to compensate the ALC if usage fell short of the expected level, and to purchase the four stations if usage was so low that the concessionaire defaulted on its loans. As the SRA expected usage to increase significantly over time due to population...
growth and urban development, it considered these guarantees to be a relatively low risk. Eventually, a quite poor risk management led to a remarkable project failure. Usage level turned out to be only a quarter of the expected level, partly due to an excessive user charge (including the station fee) that could hardly compete against the prices offered by alternative transport means such as buses and taxis. These problems caused a default on the ALC debt just six months after the line started to operate. The government attempted to bail out the project by subsidizing fares to increase service demand (e.g. granting concession fares to groups and offering airline-train ticket packages). A large fiscal burden transpired from both subsidizing the final users and compensating the ALC through the SRA. Despite the remarkable failure, the government chose not to resume control of the project and thus kept it in private hands. Up to the present, the concessionaire has been heavily compensated, the service demand is still far from the initially expected level, and fares are still uncompetitive.

Source: Loosemore (2007)

6.1.6 Dealing with social and environmental issues in contract design

The long term and integrated nature of PPP service contracts incentivizes the contractors to consider the synergies between the design of an asset and its ultimate operating costs. This can result in the delivery of public services in a more environmentally sensitive way and without an additional price tag. The emphasis on whole life costs means that public sector contracting authorities are required to take account of all aspects of cost, including running and disposal costs, as well as the initial purchase price of an asset. Environmental considerations, set out in documents such as environmental policies, are intended to help achieve the Government’s objective of a more sustainable environment. There is a problem of perception that environmental technologies and materials are an expensive luxury that government can not afford. This is clearly wrong. PPP projects have demonstrated that investing to deliver environmental improvements can secure not only best value for money through lower running costs but also health and social benefits such as better working conditions (GPPP, 2002).

Good design is crucial to the success of a project and should achieve savings in whole life costs and improvements in environmental performance and productivity. In addition well designed public buildings can help deliver wider benefits to the communities where they are located. To enable good design there should be a clear and concise statement of output requirements that includes the values and evaluation criteria to be employed. Sufficient time must be allowed to enable full and proper consideration of these requirements. There also needs to be a commitment from both the service provider and contracting authority to achieve quality objectives such as reducing the use of energy, water and other resources, minimizing waste and controlling pollution.

Even from the bidders perspective contracts can ensure to cover the following issues so that private partners fulfill environmental requirements:

- Minimizing waste.
- Reducing whole life costs – by optimizing the balance between initial costs and maintenance and operating costs without compromising user comfort.
- Enhancing service delivery – a building which is well lit and airy, relying on natural light, can positive effects on users with obvious benefits to productivity.
- Promoting wider social and environmental benefits – by addressing health, safety and environmental concerns of those living and working in the area, a project can have a significant impact on improving the morale and well being of the community.
- Encouraging in-built flexibility – by enabling the facility to save time and cost in the delivery of new services and to respond efficiently to changing requirements and new technologies particularly those which can conserve resources and reduce waste.

The contract specification for a PPP project should correspond with the National Environmental Safeguards and Frameworks as well as with all rules from programs operating under central and local governments where project will take place. Also objectives and targets must be aligned with these strategies and other contained in any relevant departmental strategies. The PPP contract should ideally be sufficiently flexible to take account of any new targets and future monitoring and reporting requirements which may develop over the lifetime of the project.

<table>
<thead>
<tr>
<th>Environmental Issues and Prospects</th>
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<tbody>
<tr>
<td>In a report of Fitch Ratings on Global Infrastructure and Project Finance 2008 there is a special emphasis on environmental issues and its prospects. The report informs that environmental policy continues to evolve around the world, following paths unique to each region and country. This is important in the context of various infrastructure projects. In the current U.S. regulations for SO2 and NOx are becoming more stringent, while new regulations for mercury and carbon control have been introduced. In Europe, a number of directives imposing strict requirements to operators to minimize harmful emissions (SO2, NOX, VOCs) are either in place or are being phased in. In Australia, there is a CO2 reduction plan and an emissions trading scheme by 2010. In general, merchant projects may be offset by corresponding increase in energy prices. Contract oriented projects, however, are more valuable since the incremental costs of environmental compliance are rarely passed through to the counterparties. As future environmental policies are finalized, and timing of implementation known, rating companies like Fitch will more fully incorporate environmental issues into the outlook of individual projects.</td>
</tr>
</tbody>
</table>


The significance of the contract in the wider political sphere will need to be acknowledged and arrangements should be made for monitoring environmental performance and reporting on progress to stakeholders such as Environment Ministries, NGOs, and the public. Benchmarking performance is an important way of driving up performance within the life of a long contract. It is realistic to expect environmental standards agreed by government to become more rigorous over time.

The contract must specify the liabilities caused by environmental damage arising from construction or operating activities during project life cycles, but also arising from pre-project term activities whether undertaken by the PPP, a third party or attributable to
subcontractors. This requires thorough diligence of pre-existing environmental conditions, limited by cap and subject to project financial valuation. Remediation works due to environmental damage must be determined by independent monitoring agencies. Many contracts consider special insurances on this regard to prevent from sudden changes in cost and revenue streams.

**When Environmental and Social issues transcend the PPP contract: The case of the Maggi soybean expansion plant in Brazil**

In many LAC countries, the public sector faces fiscal constrains and lacks expertise and technical capacity to manage the statutory/planning risk it should bear according to the efficient risk allocation. Hence, the public sector may fail to perform the tasks corresponding to it under such an allocation. The case of Environmental and Social risks is an example to illustrate this point. Brazil has been a country with problems in designing the adequate mechanisms to conceal externalities from environmental and social damages. One example is the case of Maggi Soybean Plat PPP.

The rise of large-scale soybean farming in the central western part of Brazil is causing severe social and environmental problems as part of a private and public partnership to develop the sector infrastructure and output. Deforestation of the cerrado (savannah) is increasing rapidly, while the soybean expansion is also threatening the Amazon rainforest more to the north. In the inter-ministerial Plan on Deforestation of the Brazilian government, released in March 2004, soybean cultivation is mentioned as "one important factor in recent Amazon deforestation". Monoculture is disrupting the hydrological balance in this area and is threatening its high biodiversity. Land conflicts with small peasants and indigenous groups have intensified as an unintended consequence of the contract risk allocation between public and private sectors, with several soybean farmers illegally occupying indigenous lands. Various social and environmental NGOs in Brazil and in soybean importing countries such as the Netherlands, Belgium, Switzerland, Germany and the United States, are stepping up efforts to control the social and environmental consequences of the soybean boom in the Brazilian Midwest. In March 2006 the Brazilian Forum of NGOs and Social Movements adopted a set of minimum criteria for soybean cultivation in forest areas and infrastructure expansion.

*Source: Agriculture in Brazil and Argentina / WRS-01-3, USDA, 2005*

A good example of emphasis in environmental and social issues in designing PPP contracts is related to the implementation of novel multilateral rules. Many contracts have recently implemented the *Equator Principles* (EPs) particularly to address complex environmental and social impacts induced by large infrastructure projects on local communities. They apply especially to projects in emerging countries that lack (or fail to enforce) strong environmental and social regulatory structures to minimize impacts. Experience has shown that when these impacts are not properly managed, the host community suffers, projects eventually fail, and financing institutions and banks face many reputational risks. The Equator Principles are a framework for financial institutions to manage environmental and social issues in project finance, particularly through on PPP contracts and concessions (Orr and Kennedy, 2008).

Over the past two decades, commercial banks that financed private parties of PPP contracts have incurred in financial loss, reputational damages, and shareholder concerns due to increasingly poor environmental and social impacts management. The EPs is a breakthrough mechanism to guarantee that all industries and infrastructure projects meet sound standards. The EPs apply to projects with a capital cost of $10 million or more through environmental risk categorization and performance standards that apply to low
and middle income countries. It allows concise steps to be taken to ensure appropriate application of social and environmental assessments, the development of action plan, community mitigation engagement, project monitoring, etc.

### 6.1.7 Models for optimizing contract period

While common financial management techniques can help project the pay-back period (PBP) of the scheme, the risks associated with the prospective incomes and expenditures must be duly considered to reflect the possible changes in market condition and external environment. To shortcut the decision process, decision-makers may rely on the PBP and value-for-money tests to determine the concession period for a PPP project. With the ability to predict the consequences under different circumstances, models can be conducted to unveil the effects of risks on the concession period. Based on the expected rate of return, decision-makers can establish the corresponding concession period distribution based on the projected costs and revenues of the project.

Like any other capital investment programs, a PPP project must be financial viable and a scheme would be considered attractive to the concessionaire only if it attains a reasonable return rate. Consequently, a number financial evaluation techniques such as the cost–benefit analysis, net present value (NPV), NPV-at-risk, public sector comparator and so on have been initiated. Using conventional NPV methods the PBP is calculated by discounting the net cash flow of the investment, and an investment is paid back when the NPV is equal to zero. In the absence of any uncertainty in the cash flow estimation, the PBP is an ideal concession period for the scheme, as the concessionaire will gain a desirable financial return (see figure below). Therefore, the government would be inclined to count on the PBP to determine the concession period of PPP projects.

![Relationship between concession period and NPV](Source: Adapted from Ng et al. 2007.)
It is important to model and optimize contract periods to ensure that variables pertaining to cost, performance and management are met for the duration of the contract. This enables to have a clear timetable of results oriented framework for the entire PPP life cycle.

However, cash flow estimation is overshadowed by risks and uncertainties such as fluctuations in interest rate, inflation, cost and revenue. These issues could have profound effects on PBP prediction. But there are mechanisms in the concession contract that allow the concessionaire to increase the toll/tariff (rather than extending the concession period), if they can provide evidence that their revenue falls short of the anticipated level during the operation stage. Many public clients are trying to develop a better toll/tariff adjustment mechanism for their PPP projects. For instance, the toll/tariff can be automatically adjusted according to some occurrences that would have been stipulated by the both parties. To avoid the financial risks from being transferred to the government or users, an appropriate concession period with due consideration of the effect of risks and uncertainties on the return rate of concessionaire would be indispensable.

Ng et al (2007) developed a theoretical model that could cater for the complex implication of various risks associated with PPP projects. In this model, the concession period is an output rather than an input parameter. Since the attainment of a desirable return is the most important consideration, it is sensible to assume that a reasonable toll/tariff regime and an expected internal return rate (IRR) can be established in advance. By inputting the toll/tariff regime and the IRR into the simulation model, the exact concession period in each simulation cycle can be computed according to the simulated cost and revenue. With sufficient numbers of iteration, a frequency distribution curve related to the concession.

A list of deterministic and uncertain parameters is considered as essential for estimating the concession period. The deterministic parameters include the construction period (Tc), discount rate and toll/tariff regime. In contrast, the cost (Ct), operation income (It) and revenue (Rt) are considered as uncertain parameters in the simulation process. Ng et al (2007) conducted a simulation using the above mentioned model to estimate the concession period which is useful for decision-makers.

The results of simulation showed that by considering the minimum, expected and maximum IRR, a concession period that is less risky to the concessionaire can be identified. Furthermore, the simulation model also allows the decision-makers to establish the sensitivity of some parameters (e.g. toll/tariff regime, IRR, etc.) to the concession period and thereby providing them with a basis for negotiation. These and other models illustrate the importance of recognizing deterministic parameters when designing a contract so that the basic principles of benefits and risk allocation are clearly outlined. This helps to standardize certain commercial principles, and reduce risks and conflicts that emerge during the life-cycle of the PPP.

<table>
<thead>
<tr>
<th>Transparency of the term of the contract duration</th>
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<td>[Brazil: Lei 11.079, Art. 5]</td>
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</table>

180
The clauses of public-private partnership contracts shall be in accordance with the provisions of art. 23 of Act 8987, dated February 13th, 1995, as applicable, and shall also state:

I – the term of the contract, which shall be in line with the amortization of the investments to be made by the private partner, not shorter than 5 (five), and not longer than 35 (thirty-five) years, including possible extensions;


20. Las dependencias y entidades deberán presentar las solicitudes de autorización de proyectos para prestación de servicios ante la Secretaría, a través de las Direcciones Generales de Programación y Presupuesto sectoriales. En el caso de entidades sectorizadas, la solicitud deberá ser presentada por la dependencia coordinadora de sector y, en el caso de las entidades no sectorizadas, la solicitud deberá presentarse por la entidad, directamente a las citadas Direcciones Generales.

21. Las solicitudes a que se refiere el numeral anterior deberán acompañarse de la siguiente información:

VI. Los elementos principales que contendrá el contrato de servicios de largo plazo que se celebraría entre la dependencia o entidad contratante y el inversionista proveedor, incluyendo:

b) La duración del contrato;

27. LA solicitud de autorización, las dependencias y entidades deberán anexar los siguientes documentos:

I. El proyecto de contrato de servicios de largo plazo, que deberá contener, entre otros términos y condiciones, los establecidos en la fracción VI del numeral 21, así como los siguientes:

a) El plazo para dar inicio a la prestación de los servicios;

f) Las condiciones para la modificación y prórroga del contrato;

---

**Model for estimating Optimal Concession Period under risky contracts of PPPs**
Application to the Optimal Concession Period Simulation in Hong Kong

The simulation is useful to categorize different contract period scenarios. This simulation, consisting in different phases of data entry, used information from annual traffic flow of crossing harbor tunnel in Hong Kong. Having established the deterministic and uncertain parameters, the simulation can proceed by...
inputting these parameters. With the simulation results, the public partner can determine a concession period that would guarantee the concessionaire to gain the anticipated IRR under the proposed toll/tariff regime with a particular confidence level. For instance, the government might wish to fix the concession period to 17 years, as there is a 80% confidence that the concessionaire can attain the desired return rate. However, in order to ensure a probability of not less than 90% to realize the designated IRR, the concession period must be set at 18 years.

<table>
<thead>
<tr>
<th>Cumulative probability of concession period</th>
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<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>IRR</td>
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</table>

In order to conduct the second phase of the simulation, the following aspects must be defined:

- The construction period (5 years)
- The construction cost ($100,000,000 [which are apportioned in accordance with a 5-year construction period at 10%, 20%, 30%, 20% and 20% respectively])
- The annum operation and maintenance cost (15% of the annum operation revenue)
- The estimated traffic volume and proposed toll regime
- The discount rate (14%)
- The concession period (15 years)

<table>
<thead>
<tr>
<th>Estimated traffic volume and proposed toll regime</th>
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</thead>
<tbody>
<tr>
<td>Vehicle type</td>
</tr>
<tr>
<td>Cars/vars</td>
</tr>
<tr>
<td>Buses</td>
</tr>
<tr>
<td>Trucks</td>
</tr>
<tr>
<td>Motorbikes</td>
</tr>
</tbody>
</table>

Other assumptions for the model:

- Inflation rate – the rate of change follows a normal distribution with mean and standard deviation equivalent to 2.5% and 2% respectively
- Traffic flow – the estimated average annual traffic volume follows a normal distribution with standard deviation equal to 20% of the first year’s traffic volume.
- Operation cost – the annum operation and maintenance costs follow a uniform distribution in an interval [0.13, 0.17]

It is apparent that the cumulative probabilities of the IRR min, IRR expected and IRR max in the 15th year are 0.551, 0.149 and 0.012 respectively. The results illustrate that the initial decision of fixing the concession period to 15 years is indeed rather risky to the concessionaire, as such a period can only just ensure the expected IRR (IRR expected = 14%) be realized at a probability of 14.9%. In other words, there is 85.1% possibility that the IRR will not reach the expected level.

<table>
<thead>
<tr>
<th>Cumulative probability of concession period to realize different IRR</th>
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<tbody>
<tr>
<td>IRR</td>
</tr>
<tr>
<td>IRR_{min}</td>
</tr>
<tr>
<td>IRR_{expected}</td>
</tr>
<tr>
<td>IRR_{max}</td>
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</tbody>
</table>

Source: Ng et al. 2007.

6.1.8 Financial principles of PPP contract design
The theoretical literature on PPPs has given little attention to the financial dimension of contracting. It is clear that PPPs have been attractive for governments trying to make their accounts look good, thereby using public accounting rules that do not correctly capture government assets and liabilities. PPPs then create the impression that public debt has not grown as much following an investment project. We will abstract here from such public accounting motives since they do not alter the efficiency of PPP.

Beyond pure risk sharing, it is important to think about the effects of the funding mechanism on incentives. While the literature stresses incentives linked to allocating ownership rights under traditional service provision and PPP, it does not explicitly take into account that the contractor has to honor and remunerate external finance such as outside equity and debt. Traditional corporate finance has stressed, however, that large outside equity or debt can lower incentives to exert effort (see, for example, Jensen and Meckling 1976 and Myers 1977) since effort partly benefits external investors (outside shareholders or creditors). One should therefore be aware of potential drawbacks of relying on highly leveraged private contractors to undertake public projects.

Things may be different, however, if ‘bundling’ also concerns the financing of the project. For instance, assume that bundling requires the consortium to buy and finance the asset. Typically, the consortium will have to seek external finance, unless it has enough funds: this implies that part of the return of the project will accrue to outside investors, and not just to the consortium. With outside equity, the consortium offers outside shareholders a constant share of what it gets by extracting consumers’ willingness to pay. Having to share the returns on its efforts with outside shareholders, the consortium has less incentive to exert effort.

The Consortium Model with Financing and Operating Phases

This is a case where PPP backfires: on the one hand, the bundling of building and construction gives appropriate effort incentives to the consortium; on the other hand, since the consortium has to rely on outside equity to finance the asset, the positive incentive of bundling is undone because outside shareholders end up getting too much of the return on the consortium’s effort. In fact, outside equity is not the optimal external financing mode in this case: one can do better with debt, which maximizes effort.
incentives for a given expected repayment to the outside financiers by maximizing the difference between the consortium’s payoff in ‘good’ states of the world and ‘bad’ ones.

Although debt is better than equity at preserving the consortium’s incentive to exert effort, it is true nonetheless that there will be cases where it cannot be done while satisfying investors’ participation constraint. The general lesson from this sub-section is that, by insisting on external finance, a PPP can undo the desirable incentive effect that bundling the construction and operation phases may achieve. In discussing the downsides of external financing for PPPs we have so far attributed a minimalist role to outside equity and debt: we have stressed the income rights attached to these instruments, but we have abstracted from their associated control rights.

### Why outside finance may stifle the efforts of PPP contractors?

We consider a stylized infrastructure project. The willingness of consumers to pay for the infrastructure service is a random variable being either a low \(V_0\) or a high \(V_1\). The realization of consumer willingness to pay depends on effort exerted at the building stage. Specifically, the realized willingness to pay will be \(V_0\) with probability \(1 - k - e\) and \(V_1\) with probability \(k + e\), where \(k\) is a positive constant and \(e\) is the effort exerted at the building stage. Effort, \(e\), can only take two values: 0 and \(e^* > 0\), with \(e^*\) indicating the profit maximizing level of effort. With **outside equity**, the consortium keeps a share \(1 - \beta\) of profits and chooses \(e\) to maximize:

\[
(1 - \beta)(1 - k - e) V_0 + (1 - \beta)(k + e) V_1 - e.
\]

This will lead to a choice of effort \(e^*\) only if:

1. \((1 - \beta)(V_1 - V_0) \geq I\) or
2. \(\beta \leq \frac{I}{V_0 + (k + e^*)(V_1 - V_0)}\).

The left-hand side and the right-hand side, respectively, of (1) show marginal benefit and marginal cost to the consortium of exerting effort. Condition (1) — which can be rewritten as condition (2) — thus says that the share of profits retained by the consortium \((1 - \beta)\) must be big enough to induce the consortium to exert effort. At the same time, the share of profits accruing to outside shareholders has to be large enough to induce them to supply the initial financing \(I\). Specifically, shareholders’ participation constraint is:

1. \(\beta (1 - k - e^*) V_0 + (k + e^*) V_1 \geq I\) or
2. \(\beta \geq \frac{I}{V_0 + (k + e^*)(V_1 - V_0)}\)

**Source:** Adapted from Dewatripont and Legros (2005).

There are many debates about the various ways in which shareholders can transform their ‘formal authority’—managers are by law most of the times instructed to pursue shareholder interests—into real ‘real authority’ through various mechanisms of corporate governance. Corporate finance, on the contrary, analyzes various safeguards against the divergence between managerial conduct and shareholder interests. For example, the role of boards of directors, transparency of information, and the regulation of takeovers are the main areas of concern.

**Positive effects of external finance**

The contingencies of financial contracting can affect in a non-trivial way the performance of PPPs. Consider for instance how the rights are licensed when contractors face the risk
of bankruptcy. If contractors are financially constrained, the risk of bankruptcy is not internalized when contracts are awarded. This is relevant, for example, at the auction stage: it can lead to aggressive bidding and success at the auction, with the government/sponsor paying the consequences later. Things are worse if, because of ‘too important to fail’ considerations, the sponsor finds it optimal ex post to intervene and rescue the project. The anticipation of such ‘soft budget constraints’ would contribute to a further distortion of competition at the auction. This could provide an argument for the sponsor to contribute to the initial financing of the project, but could also justify PPPs in order to transfer decision rights in the case of bankruptcy to a third party.

Softness of budget constraints is an illustration of a lack of commitment or lack of completeness of contracts, and the question is whether external finance can help in making budget constraints bind, thereby avoiding the opportunistic behavior of contractors. Recent literature on venture capital models the active monitoring and sometimes executive role of the financial intermediary for references and evidence). Whether finance is obtained through equity or debt, that literature underlines a trade-off between the benefits of risk diversification, which leads to a dilution of ownership of individual firms, and the benefits of monitoring resulting from a more concentrated ownership structure (Kaplan and Stromberg (2003).

These aspects lead to consider that quality of infrastructure reflects both exogenous and endogenous uncertainty and that the purpose of contracts is to disentangle their effects. It is thus important to identify, and find ways to filter out exogenous disturbances by using or indexing relative performance evaluation between the public sector and the private parties involved. Building property rights in PPPs’ contracts must also consider the importance of financial contracting to align incentives that do not depart from public-good objectives. The negative effects of financial contracting rely on the incentives to accrue benefits to outside investors. These problems can be eluded when contracts bundle decision and other property rights for operating infrastructure projects.

Ensuring Quality of Service

Delivery of quality services that provide value for money with sound finances encourages a long-term approach to the creation and management of public sector assets. Achieving value for money in the provision of a service requires that full account is taken on the risks and costs over a long timescale as opposed to focusing on short-term capital expenditure. This requires a two-sided model of financing the project, one that is reactive (short-term) to the needs of initial equity investments, and another that is proactive (long-run) in financing sustainability. The latter is related to ensuring quality. Quality services can be sustained over many years at the lowest long-run economic cost.

The key is to specify the output of service required to allow the private party to determine the inputs required and to “sketch” their cost curve over the long run. This involves no only infrastructure but other subjective attributes linked to collective performance and management. The private party must no contain a great deal of control over the standards to prevent from conflict of interests in evaluating quality of services.
Refinancing

Refinancing of PPP projects after a few years of operation has enabled the private sector party, and in some cases also the public-sector party, to greatly benefit from the maturing PPP market. Refinancing gains can result from interest rate reductions, extensions of debt maturity, increases in the amount of debt facilities, etc. Most of the time refinancing is attributable to exogenous factors, such as a change in macroeconomic conditions or the revelation of asymmetric information between borrowers and lenders while the project gradually reaches the mature stage; but they may also be due to a particularly good performance of the borrower.

A decision to include provisions in the contract implementing a refinancing gain-sharing scheme should address a trade-off. On the one hand, the private-sector party improves efficiency and performance during the contract life, lowering the risks of the project and therefore the capital cost. Refinancing gains can be viewed as a reward for improvements that should be distributed mainly to the private-sector party. Therefore, a refinancing gain-sharing scheme could weaken the incentives for the private sector party to seek for improvements. On the other hand, refinancing gains may have an impact on the compensations that are paid by the public-sector party on early contract termination. In the event of voluntary termination by the public-sector party, the private-sector party is generally compensated for the future profits it would have received had the contract not been terminated. Since refinancing increases both current and future profits, the compensations payable by the public-sector party will be higher if a refinancing occurs. Consequently, there is need to the inclusion of a refinancing gain-sharing scheme: termination liabilities for the public-sector party are lower when refinancing gains are shared during the contract life (Iossa, Spagnolo, Vellez, 2007).

6.1.9 Managing the disclosure of confidential issues

The aspects discussed above should be relevant for information about the production processes and strategic choices of the private-sector party. The disclosure cost in terms of potential competitive harm for the private-sector party should therefore be small or absent when disclosure is limited to contractual terms (payment schemes, quality standards, deductions, prices, etc.) and other output-related measures (revenues).

However, since PPP contracts are based on output specifications and the assessment and selection phases are in the past, from a PPP governance perspective the most important contractual information that needs to be disclosed once the contract is signed is exactly that about output variables. Moreover, information should be disclosed within a pre-established, short, and binding time limit from its emergence. The time limit could be established by law, by the national auditor, and/or by the contract, but in any case it must be short and strictly binding (Iossa, Spagnolo, Vellez; 2007).

Communication strategies should be an integral part of any PPP project and made explicit, especially within politically sensitive areas. Communication about PPPs is a
never-ending process, and information that can be shared without jeopardizing the intellectual property rights of the private sector should be shared. The opposition to PPP projects should not be allowed to provide an unbalanced portrayal of what the project means for the public. All partners should be involved in the process of communication strategies included in the contract, and public and private partners should cooperate on a common communications strategy framework. This will ensure a consistent message, and reduce potential confusion. Fairness and confidentiality should be ensured throughout the process. Information disclosure on how the project affects the reported fiscal balance and public debt, and whether PPP assets are recognized as assets in the government balance sheet is crucial. The emphasis is on ensuring that PPP assets are effectively accounted for and not kept in limbo.

Extensive theory and experience in PPPs converge in the principle that the disclosure of information and its management should be taken with special care, particularly when designing the contracts. First, the inclusion of commercial confidentiality clauses reduces transparency and negatively impact public accountability. A second area relates to potential problems that arise from a reduced scrutiny, which creates opportunities for corruption and patronage. Third, part of the ‘standard’ package of public sector reforms in PPPs often includes legislative changes on how to include freedom of information legislation, which sometimes paradoxically limit the citizens’ opportunity to access public information. The asymmetric information held by private partners may increase their knowledge about the public contract manager, which can lead to public interest challenges.

If good communication strategies consider trust as the core of commercial confidentiality regimes, it can alienate public stakeholders and their potential to identify problems and help in developing solutions. Therefore commercial confidentiality clauses need to be minimized in contract designs. In reality the existence of asymmetric information has also created problems on distributional equity. The private party might ‘cherry-pick’ clients leaving the public sector to deal with less profitable clients or activities. In extreme situations, asymmetric information might enable the private partner to know much more about the business than the government does, thereby constituting another problem of public knowledge.


This section summarizes some of the Best Practices in designing contracts that tackle different problems and incentivize efficiencies. Many of them were extensively reviewed and verified in order to have set of cases that cover most of the regions and sectors involved in excelling on contract design. Each case has in the title the aspect of contract design where best practice was found, the location and the type of infrastructure when available.

| Statutory and Planning Risk: YD2nd Tunnel in Shanghai (China) |

188
In the PPP for the construction of the tunnel, the local authorities assumed the responsibility for land acquisition and compensation risk involved in the project, hence they did not transfer statutory risk to the private-sector party. This party would have faced great uncertainty if it had had to take care of land acquisition and compensation, coping with the political consequences typical of these operations. A number of circumstances under which the public-sector party should bear the site risk have been identified: (i) when the existing site owned by the public-sector party has defects or environmental liabilities; (ii) when the land asset is to be retained or acquired by the public-sector party at the end of the contract life; (iii) when the project involves an environmental impact appraisal, and thus site approvals are likely to be complex; and (iv) when the land asset is subject to ownership claims by indigenous people.

Source: Bing et al. (2005)

Coping with Contract Incompleteness in The London Underground (UK)

The PPP project to rehabilitate and upgrade the London tube was offered to private-sector companies (the so called Infracos) through different contracts involving different parts of the underground network. The responsibility for providing the transportation service to final users, instead, was retained by a public-sector company, the London Underground Ltd. (LUL). In a first stage, contracts were tendered and the preferred bidders, the Tube Lines and Metronet consortiums (Infracos), were chosen in May 2001. The PPP was highly criticized, by the Mayor of London among others, in terms of incompleteness of the contract and unclear value for money. Some argued a PPP contract would not be the best way to upgrade the tube system and made a case for the LUL undertaking works by itself. Besides, despite PPP advocates arguing the contracts contained strong incentives to improve safety standards, some critics raised concerns about the effect on safety of the decentralized nature of the London tube PPP project. The legal and political challenges to the PPP agreement led to large costs for the public sector arising from consultancy services and advisory fees, and to delays in the award of contracts. The uncertainty on contract negotiation and award delays even led bidders to threaten suing the government for the high bidding costs if the PPP contracts were dramatically modified.

The London tube PPP contract was more complex than a typical operation PFI deal. Further, in the London tube PPP there was not a construction phase followed by an operation phase since the contract involved a continuum of work to improve the assets over the contract life. That is, the PPP agreement was similar to a DBFO model with respect to the whole-life cost approach, but building and operation activities were not bundled: the concessionaries would upgrade the existing infrastructure while LUL continued to provide the transportation service.

Sources: Bolt, C. (2003), (2007); NAO (2004a), (2004b); Public Private Finance, various issues; Public Finance, various issues; The Economist, April 2007, June 2007

Innovative Payment Mechanisms for the M1-M15 motorway (Hungary)

The concession to design, finance, build, operate, and transfer a 43-km motorway implemented a user charges payment mechanism that fully transferred traffic (demand) risk to the concessionaire, without any support from the public sector other than the initial planning and site acquisition. The award criterion was the lowest tariff (toll) requested by the competing bidders. The concessionaire was entitled to set initial tariffs at the revenue maximizing level, and to adjust them subsequently according to indexation provisions. Although there was a parallel untolled road that remained unimproved, the economic rationale for the project was largely based on time savings to be realized by users (estimated at 20 minutes per full journey). As many commercial vehicles kept using the alternative, untolled road, traffic volumes and total revenues were half of the originally forecasted values for the first year of the concession. This led to litigation on tolls, suspension of investments and loan disbursements, and a debt default by the private partner. Both the concession and debt obligations were taken over by the public-sector party. This case highlights the
difficulties in applying user charges and forecasting demand, especially when the project involves a green field investment, there are alternative free available services, and no revenue subventions are offered to the private-sector party.


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**Financing Mechanisms of Bus Rapid Transit (BRT) Systems: The Case of Bogota’s Transmilenio**

The TransMilenio (TM) Bus Rapid Transit System was developed in 2000 to upgrade and operate the Bogotá bus transport system by a partnership between the public sector and a number of private companies. Before the TM project, the bus transport service was provided by a few bus companies that owned the government-issued routes and rented them to private bus owners and by small private bus operators serving fixed routes. Since the operators’ revenue depended on the number of passengers, there were often ‘price wars’ to attract passengers ( Colombians referred to this phenomenon as ‘war of the cents’ because only minimal price reductions were feasible in bus fares). Outcomes from such a system were far from efficient: long delays, oversupply of seat capacity, and low quality of service. The TM project planned to rationalize bus routes by building exclusive bus lanes in critical areas of Bogotá and using a system of feeder routes to complement the main lanes. A modern infrastructure was planned involving a network of enclosed bus stops, pedestrian bridges, terminals, and transfer stations. The overall bus route system was to be built over 15 years and would include 22 exclusive corridors covering around 400 km with a capacity to transport 5 million people daily.

In the TM project, there was a clear distinction between activities to be financed by the public-sector party and those to be financed by the private partners. Public funding was required to invest in the transport infrastructure. The cost of the main construction works was estimated in USD 240 million for the period 1998-2002, and USD 480 million for 2002-2005. Most of the infrastructure cost was to be borne by the national and local governments. The contribution of the national government was around two-thirds of the infrastructure cost, partly financed with a loan granted by the World Bank. The Bogotá government was able to financially support the TM project thanks to its strong fiscal position and the autonomy granted to local authorities to fund the provision of public services. The city of Bogotá committed half of the revenues from a gasoline sales surcharge for financing the project. On the other hand, the private partners provided financing for buses and ticket machines. Their invested funds were to be recouped by charging fares to final users, with no subsidies nor guarantees offered by the public sector to the private-sector parties.

Source: Transmilenio S.A. (http://www.transmilenio.gov.co)

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6.2 Building institutional and contractual mechanisms for managing change of circumstances

Regarding the regulatory and institutional framework, the quality of contract enforceability and governance are critical factors affecting PPP agreements. Weak institutional mechanisms, that adapt to changing circumstances, and government’s lack of commitment not to renegotiate account for recurrent contract revisions. In many developing countries, there has been more interest from local and foreign investors to have complete information on the institutional requirements and the context where investments are made, particularly in PPPs. And such investments have risen dramatically in recent years. In 2007, about 15% of global FDI came from developing countries while in 1990 this figure accounted for only 5% of total global FDI. In a recent exercise by PPIAF to explore the most important aspects affecting the flow of private
investment into infrastructure projects, a survey was applied to investors that engage in PPP contracts or have had experience engaging in infrastructure concessions. The responses show that the companies rated as "most" and "very important" the political and business risks (80 percent), followed by legal and regulatory risks, finance, market (70 percent), macroeconomic and social risks (38 percent) (see graph below).

Obviously many of those factors are exogenous to the contract itself. But interestingly, the business risks are highly correlated with the incentives and institutional setting provider by the contract and the regulatory agency. Other important aspects of Financial and Legal risks can well be specified in contracts in order to set clear rules between parties involved in the PPP to guarantee the minimization of costs of such risks. This is why all the institutional clauses specified in PPP and concession contracts are so important in providing solid ground and certainty in a long-run relationship. Many unforeseeable changes in circumstances cannot be taken in consideration ex ante. But many other simple resolution mechanisms can be set and specified to increase incentives from private equity owners to finance long term projects with a reasonable rate of return.

![PPIAF EMIO Survey 2007. Perceptions of Risks by Importance](image)

**Political risk**: Political risk considers factors such as political stability, enforcement of government contracts etc.

**Business risk**: This includes factors such as cost and availability of resources, long gestation period, Project implementation risk etc.

**Macroeconomic risk**: Factors include inflation, exchange rate volatility, low trade openness, small economy etc.

**Finance risk**: This refers to the possibility of a Company not having adequate cash flow to meet its financial obligations, such as repayment of principle and interest on a debt.

**Market risk**: This refers to the possibility of an unfavorable market condition in terms of reduced demand for a product or service, negatively affecting a Company’s revenue and profit.

**Legal and regulatory risk**: This refers to the possibility of change in laws and regulations having a negative impact on an investment. It is particularly significant when government intervention in the involved sector is high.

**Social risk**: This refers to the possibility that an intervention would create, reinforce or deepen inequality and or social conflict, or that the attitudes and actions of key stakeholders may subvert the achievement of the development objective, or that the development objective, or means to achieve it, lack ownership among key stakeholders.

Note: 63 respondents – error level 9.6% (90% confidence level).
Source:  EMIO Survey 2007

### 6.2.1 Price variations
Since long term contracts are by definition and inevitably incomplete, auctioning procedures are not always effective in identifying the most efficient private operator to invest and operate a public service. Nor, auctioning allows to settle an ex ante price that reflects economic optimization of the provider and that is accessible to the purchasing power of the demand. Moreover, ex post exogenous conditions as well as ex ante opportunism may disturb the result of actions and the settlement of prices. Deciding ex ante what has to be done ex post is a way to stabilize the contract by avoiding (as much as possible) renegotiation. However, stability of prices is obtained at the cost of making the contract maladapted to unanticipated circumstances (Athias-Saussier, 2005).

For instance, Guasch (2004) proposes a model for appropriate structure of tariff and price setting under price-cap regimes. This structure applies to the first year of the contract and then revisions are undertaken. He proposes to internalize in process or guidelines the adjustment of tariffs and prices in a five-year period interval. Although this model is effective to minimize the probability of renegotiations, it does little to assure stability given price variations during the complete life-cycle of the PPP. This last point is important to address because prices may even be over evaluated in the initial phases of the project because competitors will want to anticipate transaction costs associated with renegotiations and conflicts (Bajari-Houghton-Tadelis, 2004).

Renegotiation might be constrained by the level of ex post competition. Thus, implicit relationship dimensions (ex post competition) could play a role in the efficiency of contracts. The important aspect of ex ante considerations in contracts to cope with price variations has to do with the fact that initial award criterion may involve not just one price, but a vector of prices to be determined depending on the types of customers and the level of quality provided. Furthermore, if operators are selected on the basis of their price bids (which reflect their further tariff structure), then there is a risk of the “winner’s curse”, since best offer may come from most optimistic operator.

Contracts of endogenous duration may offer a partial solution to the problem (Engel, Fischer and Galetovic, 1997). Consequently, tariffs need to balance a number of objectives: (i) stipulated service standard and associated costs, (ii) customers’ willingness and ability to pay, (iii) resulting cost recovery, (iv) required economics (return on investment) for private operator, and (v) need for/availability of subsidies. The right combination of factors must be determined through an iterative optimization process using the PPP project model.
The iterative process of tariffs, value, operations and service standards

This process is made more complex if differentiated/complex tariff structures (e.g., unit price as a function of consumption to help low-income users) or tariff adjustment mechanisms (e.g., for input cost changes, high inflation, exchange rate changes) are used. It is critical to employ qualified and experienced specialists for this modeling and optimization task.

The following objectives provide an appropriate starting point for designing tariffs in a volatile environment:

• Cost recovery/return on investment,
• Incentives for efficiency,
• Fairness and equity, and
• Simplicity and comprehensibility.

Finally, the combination of service standards (costs) and tariffs (revenues) in the contract determines the commercial viability of a project. Beyond that, the private operator has the chance to improve the ultimate financial outcome by being particularly efficient in investment and operations. Therefore, a private operator will only get involved in a project if it sees a fair chance to make a profit given a predetermined set of service standards and tariffs.

To expect one set of tariffs, or even a tariff structure or regime, to remain viable and appropriate over the typical life of a PPP project is unrealistic. It is therefore essential to define practical rules for adjustments. This requires defining in the contract:

• The triggers or drivers for a price adjustment, such as changes in raw material prices (such as oil prices for power), inflation, and exchange rate fluctuations (where the operator had to assume non-hedged foreign currency exposure);

• The mechanisms by which the adjustment will be made, including cost plus and price-cap regulation [as proposed by Guasch (2004) and others];

• The frequency of adjustments including cost pass-throughs, tariff indexation, tariff resets, and extraordinary tariff adjustments.
Regulatory Structures of Pricing

When designing a PPP or concession contract there are choices regarding the regulatory regimes. Guasch (2004) revises two salient choices, the rate of return and the price cap regulation. In general, PPPs are subject to higher returns of investment under price-cap regulation. Latin American countries have experienced problems because contracts have not considered or accounted for the full implications of the regulatory regimes on efficiency and profitability. In practice, both regimes tend to converge in the long run, and the level of convergence depends highly on the frequency of tariffs and pricing reviews. In Chile there has been an outstanding result in the Energy sector. Chile’s method of Electricity pricing is distinctive because of the innovative approach to rate of return regulation. The price system includes regulated rates for consumers with peak demand of less than 2 megawatts and freely negotiated rates for the rest. The final price to regulated consumers has two components: a node price at which distribution companies buy power from generators and from transmission grid, and the value-added from distribution. The value-added of distribution is calculated every 4 years. The procedure involves determining the costs of an optimally operated firm and setting rates that provide a 10% real return over the replacement value of assets. These rates are then applied to the real companies to ensure that the average return falls between rates of return on assets of 6% and 14%. If the average actual return falls outside this range, the rates are adjusted to reach the upper or lower limit, depending on whether they fall above or below. The operating costs of the benchmark “efficient firm” and the replacement value of assets are based on a weighted average of estimates made by the industry and the regulatory agency.


In PPP contracts variations of price (VOP) clauses need to be negotiated between the parties to cover from changes in prices, costs, inflation, etc. Contingencies bid prices for the initial period of the contract is recommended to be included with an additional set of clauses that identify key managerial actions to be taken when prices fluctuate based on predetermined benchmarks. For example, procurement strategies must clearly explain how inflation risks are to be managed in the contract and pricing teams conformed. Pricing arrangements for longer term contracts should be exposed to investment appraisal to identify the approach that offers the best value for money.

In addition, price reviews, are said, need to be stipulated explicitly in the contract in order to (i) adequate tariffs or unitary payments to long-run changes in the private partner’s uncontrolled costs, e.g. technological progress modifying the cost structure, introduction of new inputs whose prices are not tracked closely by the available indexes, etc.; (ii) provide a value testing provision where adjust prices periodically according to the evolution of the costs of service provision. In ‘value testing’ procedures, information on costs is collected directly, so implementing the procedures involves higher transaction costs compared to a simple, mechanic inflation indexation. But there is an important advantage: an adjustment of service charges based on accurate, specific information on costs closely tracks the private partner’s uncontrolled costs, and thus provides incentives to control costs and properly select suppliers; and (iii) provide market testing and benchmarking aiming at ascertaining the market value of the main inputs involved in providing the service through a re-tendering among potential suppliers of these inputs. The information collected is used in the price review for tariffs or unitary payments and have information on market prices of inputs is gathered to compare the private partner’s costs and adjust prices.
In implementing these procedures, a choice should be made on when price reviews and testing will take place. In fact, a trade off exists regarding the length of the regulatory lag. If the first review is planned to occur in an early phase of the project, a potential operator could bid aggressively, offering a low tariff and expecting the review to increase it soon after the contract is awarded. On the other hand, if there is a lengthy period before the first review, the private-sector party is largely exposed to the risk of misalignments between the initial fixed price and the operation costs, and thus it may require a higher service charge level. In practice, price adjustment clauses are an important element in the tariff regulation for services where the private partner’s revenues result from charging final users. If the price review is frequent and the price adjustment is backward-looking, i.e. the regulatory lag is small and past changes in costs are considered to compute a new tariff level, the private-sector party has little incentive to undertake cost-reducing efforts.

6.2.2 Flexibility

In the contracts there are non-variable pricing elements which relate to the phase where the project is. Such phases include the following:

- When work is already completed
- Supplies already purchased
- Labor and work not subject to inflation (contracted ex ante)
- Subcontracts
- Subcontracts with substantial cost variations already taken into account

Enhanced flexibility, in particular directed to accommodate changes in user needs, is important for the long-term projects typical of PPP, and may be achievable through well designed change-management contractual clauses necessary to limit potential abuses. However, enhanced flexibility will inevitably come at the cost of lower predictability and higher risk for the investing private-sector party, and of reduced effectiveness of the competitive selection process.

PPP procurements often develop along a long time horizon, 25-30 years or more. In such long period many things can change, so that there is a need for flexibility and adaptation of the contractual relationship far greater than in a more standard type of procurement. Some of the possible changes can be anticipated, in which case they may be specified in and regulated by the initial contract (e.g. changes in capacity). Other possible changes, however, may be hard to specify in the original contract, or may be totally unexpected (e.g. new incoming technologies that change substantially users’ needs). In particular, when a party must undertake non-contractible investments that are specific to the business relationship, a contract protects it by limiting the other party’s ability to ‘hold up’ the investing party asking for new terms of trade after the first party has committed its investment and is ‘locked in’ with the contractual relationship (Iossa, Spagnolo, Vellez, 2007).

Besides the benefits of generating certainty, fostering investments, and allowing for effective competition, the rigidity generated by contracts also brings about the costs
resulting from reducing the parties’ ability to adapt to novel circumstances that could not be envisaged at the contract drafting stage. The costs of reduced flexibility are larger the less the contract itself is adaptable to changes in the environment, that is, the fewer possible contingencies have been anticipated, described and regulated by the initial contract; and the more the environment and the parties’ objectives may change in an unanticipated way along the contract life.

In PPPs, in particular, the large investment at the core of the project is the source of gains from contractual completeness and rigidity, while the long horizon for the service provision is at the root of the need for enhanced flexibility. This trade off can be softened by increasing the initial investment in forecasting future contingencies (e.g. possible changes in knowledge or technology) and in describing and regulating them in the contract. That is, the flexibility/predictability trade off can be attenuated by incurring in the cost of increasing built-in flexibility/adaptability of the contract. An example of this are the built-in adjustment mechanisms for tariffs and other payments, like the indexation clauses linking payments to price or cost indexes.

In a context of incomplete contracts, and looking at it ex post, renegotiation is a ‘Pareto-improving’ mechanism to redress inefficiencies caused by incompleteness or mistakes. To be specific, renegotiation provides the parties with the opportunity to adequate the original contract terms when unforeseen events occur, agents learn more on project design, new information becomes available, etc.30 Thus, the higher the degree of contract incompleteness, the more likely renegotiations or additional side (complementary) contracting will occur. Contract renegotiations are also affected by the interactions between project complexity, contract incompleteness, and features of the payment mechanisms. In this regard, Bajari and Tadelis (2001, 2006) argue that, in an optimal contract design, there is a trade off between the costs of ex post renegotiation of contracts with different payment mechanisms, and the ex ante incentives provided by these mechanisms. According to the authors, contract design costs are increasing both in the desired degree of completeness and in the complexity of the project to be implemented.

Renegotiation and Optimal Contract Flexibility

There are few studies that focalize theoretically (Plambeck and Taylor, 2005) and empirically (Guasch, 2005) on the links that exist between contract flexibility and renegotiations. Theoretically speaking, it has been shown that firms that obtain market demand information may benefit by renegotiating contracts to allow buyers or government facing poor market/public finance conditions to purchase less than the contractual commitment (Serrant and Ojo, 2001). The potential renegotiation of the supply of contracts has important implications for private party investments in capacity, which results in profits. Failing to anticipate renegotiation leads to contracts that contain far too much flexibility, and perform poorly relative to contracts design to anticipate renegotiations (Plambeck and Taylor, 2005; Guasch, 2005).

In infrastructure PPP projects an operator typically pay a reservation fee to the contract for works and construction, when there is flexibility. Such fee reflects the flexibility on
information about demand distribution, cost of innovation or infrastructure upgrade, confidence, and capacity. Contract parameters of flexibility should be set to maximize the total infrastructure revenue and allocate total profits through subsidies or transfer payments. To illustrate the implications of optimal contracts with flexibility but with or without renegotiation, the figure below displays the expected profitability against capacity costs of a simulation done by Plambeck and Taylor (2005).

Beyond the technical specifics of the parameters assumed for the simulation (see Plambeck and Taylor, 2005 for further details), the simulation brought an illustrative way to verify the relationship between contract flexibility and renegotiation on profitability. On the left diagram, the increase in total expected profit due to renegotiation when the optimal contracts are used with flexibility, as a function of capacity costs and buyers’ bargaining strength (alpha).

![Renegotiation, Contract Flexibility and Profitability](source: Plambeck and Taylor, 2005)

Flexibility provides mechanisms to gain profitability depending on renegotiation outcomes. On the right diagram improvement in expected profit due to renegotiation when there null flexibility and without renegotiation anticipation (naïve contract). The main messages are, first, that renegotiation can greatly improve performance if contract is designed on a flexible basis to anticipate renegotiation. Second, the proportional gain from renegotiation and adequate flexibility (optimal contract design) is greatest when capacity is expensive (large scale infrastructure).

### 6.2.3 Creating institutional mechanism for managing the relationship between the partners and other stakeholders

The early involvement of all stakeholders in the PPP process helps develop an enabling environment. The stakeholders provide valuable information on the points of concern, the performance expectations, and potential risks. This input is also critical to assess whether key business assumptions of the proposed PPP (in particular tariffs/fees) are realistic and enforceable. Avoiding consultation invites the risk of later opposition, which slows or derails the process. Ongoing consultation with stakeholders is important at every stage. Consultation with potential bidders and partners is also critical to ensure that the proposed PPP design meets their requirements. Otherwise, there is a risk that the PPP design includes an unrealistic combination of (politically) desirable features (high-level...
service, low prices, no redundancies, no subsidies, and short concession periods) that will make the project unattractive to bidders or unsustainable. Collecting informal feedback from the market during the preparation stage is therefore critical.

A natural way to create an institutional mechanism to manage relationships among stakeholders involved in a PPP is to define the main characteristics and institutional qualities of the regulatory agencies. Guasch (2005) provides the main institutional requirements for establishing a robust regulatory body that enables efficiency in operation and enforcement to manage PPPs. Such requirements include the adequate regulatory structure, organization, legal and economic instruments to enforce contracts and appropriate financing.

**Capacity and Institutional Frameworks for PPPs at the Local Level**

In recent years more attention has been placed on understanding the nature of the relationship that needs to be established and maintained among the parties. National and local governments will need to ensure a political, legal and administrative framework that permits and facilitates private sector development and public private partnerships, the availability of necessary economic, financial, technical, institutional and negotiation expertise, and mechanisms for interdisciplinary/interagency cooperation and dispute resolution. Organizations may need to evolve for effective management of the different aspects and phases of PPP development. Municipal governments need clarity on their role and authority level, not just to sign contracts, but also to undertake all the other tasks related to maintaining the partnership. These would include financial, legal, administrative, and other areas of public administration. At various levels of government, a major concern is how to ensure that there is real and perceived continuity and consistency in national policies, laws and regulations over the long term and despite changes that may occur in political regime. The private sector must be given clear and consistent signals that will guide their own decision making.

Case studies of PPP’s in some developing countries indicate how important citizen acceptance and participation is. In divided societies especially, fundamental questions arise over the exploitation of natural resources such as water by private and especially foreign companies, or the extent to which some services should be freely available or sold at socialized prices. In these cases and more so when there are perceptions of corruption or collusion, and if there are negative impacts to local people or the environment, it is not unusual to find local citizenry groups rising in protest against the PPP. From the perspective of national and international private investors, countries perceived to have political and social instability, as well as inconsistent and unfavorable legal and investment frameworks are considered either unattractive to capital investment; or attractive if the profit margin is relatively high (with high risk premium). Municipal officials in general do not have the power to change but can try to influence positive changes in the investment climate. More manageable are local level strategies to improve credibility and the business environment in the municipality. Some national and municipal governments have done this and have even created associations and institutions in and outside of the state to discuss, evaluate and in some cases promote a more active participation of private sector companies.


The essential functions of regulatory institutions have the objective of creating an institutional framework that manages and distributes responsibilities and obligations to the stakeholders and partners involved under the contract. This framework considers the administration of tariff adjustments, the determination of quality and technical standards, the provision of monitoring compliance with contractual requirements, and the
facilitation of resolution disputes. These institutional mechanisms facilitate efficiency in the organizational structure by aligning the professional capacities to ensure that prices and other features in services, costs and benefits are distributed according to predetermined explicit criteria.

Economically speaking, the institutional framework should also induce the partnership to operate at lowest (efficient) possible costs and align tariffs and prices accordingly. But also, the institutional setting allows the provision of the basic conditions to ensure adequate incentives for private parties to participate in a PPP. Particularly present in developing countries, weak institutional mechanisms make stakeholders vulnerable to corruption or undesirable behavior. Many times the institutional setting acts as a way to provide barriers or open conditions to enter an infrastructure partnership. It also provides stability to the bureaucratic scheme of the partnership and credibility to the enforcement of contract clauses.

Some studies have explored the impact of regulatory and institutional design for infrastructure sector performance. For instance Guasch, Andres and Straub (2007) investigated two dimensions of regulation that matter when it comes to avoiding disruptive renegotiations. One has to do with the regulatory environment since independence can be crucial to isolate the institutional setting of long-term infrastructure concessions and contracts from political pressures. The second has to do with the type of pricing regulation. But these two aspects can hardly be separated. Governments should then consider a sequence including the development of the institutional mechanisms to create a reasonably independent regulatory agency as defined in a contract. This brings clear rules for management in order to achieve a solid mechanism of information flow and responsibilities between parties and stakeholders.

External Conditions affecting the Institutional Mechanisms of PPP contracts

Institutional barriers and opportunities are very important for encouraging private sector financing and participation in PPPs long-term contracts. In a survey carried in 2008 by Freshfields, Bruckhaus and Deringer (2008) [Outlook for Infrastructure: 2008 and Beyond] the firm asked participants to identify the bare minimum requirements for their private organizations to become involved in an infrastructure PPP contracts in an emerging economy. The responses illustrate why their organizations are not prioritizing the emerging economies ahead of the OECD countries: 76 per cent identify the need for a stable government and a reliable legal system, closely followed by 74 per cent identifying the need for corruption levels to be controlled and 71 per cent for supportive government policies.

77 The majority of participants are investors and credit providers, with the balance being consultants or industrial players who operate across all sectors, from traditional or ‘hard’ infrastructure, such as energy and transport, to social infrastructure such as hospitals, schools and prisons projects. Interviews were carried out between 22 May and 3 June 2008. Answers are ordered according to the priority of barriers reported by survey respondents.
But contracts may shield some of these external aspects and provide incentives to enter into a long-run relationship when the institutional framework clearly states responsibilities, tasks and risk-bearing issues. Arrangements in the institutional setting of contracts such as safeguards on independence and on accountability provide the basis to rely on contractual arrangements by private parties. Independence requires lengthy relationships with regulated operators, consumer groups and other private-interest groups and with political authorities (Guasch, 2005). This may provide a more stable environment where external country-specific conditions may be safeguarded through the contract. Accountability prevents arbitrary behaviors and ensures that open decision-making processes are transparent. It also provides the conditions for budget scrutiny and capacity of removal from office for misconduct or incapacity (Guasch, 2005).

### 6.2.4 Dispute resolution

Dispute resolution is an essential part of guaranteeing the incentives to comply with long-term compromises. This is because contracts are incomplete and disputes may arise on interpretation or technical issues, the contracting parties could agree to specify clauses on dispute resolution mechanisms to handle these disputes. A dispute resolution procedure properly described in the contract (e.g. arbitration) is likely to be faster and less costly than going to a court to settle a controversy (Iossa, Spagnolo and Vellez, 2007). It is important to mention that dispute resolutions, unlike tariff changes—which are addressed within the PPP contract—, address changes to the contract itself. It is nearly impossible to draft a contract that can foresee all conditions and changes that will occur within the life span of the PPP. When conditions change there needs to be mechanism to revise performance; distributions of benefits, costs and risks; legal frameworks; economic shifts; etc., all acceptable to all parties involved. The mechanisms should settle the way in which communications, agreements and discussions are set. Without these dispute resolution mechanisms contracts can have the risk of being terminated or cancelled, which can be very costly to governments, private contractors and the public in general.

There are 5 types of resolution options applicable for long-term PPP contracts:
- PPP Oversight Committee Discussion (OCD)
- Mediation
- Arbitration/binding arbitration
- Litigation
- Termination

Under OCD there is intervention usually when contracts are at the implementation phase. If OCD fails to come up with an agreement between technical specialists and managers, the case is presented many of the times to Senior Managers and Owners of various parties (government and private), who are given a chance to review these issues within the context of the overall partnership relationship of the project. The OCD has the power to demand information sharing with each party involved in the disputed in order to discuss objectively possible solutions.

Mediation requires both sides to agree to appoint a qualified official, independent of either of the two parties who is knowledgeable about the PPP contract and the specific sector. Often mediators have legal backgrounds as lawyers or even judges. It is common that both sides will request that a mediator (or an arbitrator) to be independent from all national political and economical pressures, and therefore it is better to have a non-national from the country government, nor from the country of the contractor. The mediator listens to both side’s testimonies and issues a recommended solution within a specific deadline. The limitation of mediation is that neither side is bound to accept mediator’s recommendations.

Under arbitration both sides agree to appoint a single arbitrator or a panel of arbitrators to hear their case. The ICSID of the World Bank and other international and local bodies of arbitration specialists are becoming increasingly experienced in resolving disputes of PPP contracts in infrastructure. Under this mechanism disputes among the operator, regulator and government are standard and bound to arise under any contractual agreement (Guasch, 2005). Unlike mediation, where both parties are free to ignore the recommended solution of the mediator, arbitration is usually classified as “binding” – meaning that both parties commit up front that they will accept and abide by the findings of the arbitrator. Thus, it resembles an official court of law, but it has the advantage that it can be much cheaper and quicker than going through a formal litigation process in courts. Finally, arbitration panels can be set up in a matter of weeks or months.

Contract termination or cancellation is the extreme position when any agreement can take place due to i) extreme change in circumstances, or ii) when all channels for dispute resolution have been exhausted. There are two types of termination “for cause” and “no cause”. “No cause” termination has usually detailed procedures for how all the accumulated costs of the project, including past investments, outstanding project-backed loans and current inventories will be allocated and how termination payments (including penalties) must be made. Large PPPs with project-backed loans require the full amount of their outstanding loans, plus fees, to be paid if the Government terminates the contract or buys out the PPP. In for cause termination there has to be an explicit circumstance that
affects the payments and compensations in order to minimize the overall costs if PPP continues.

It is important to point out that the design of the dispute resolution mechanism is a key issue for the success of the contractual relationship, especially given the need to avoid costly service disruptions and the long-term nature of most PPP contracts. In addition it must prevent strategic behavior by the contracting parties because it can undermine the efficacy of dispute resolution mechanisms such as final offer arbitration, and inefficiently affect the risk allocation among PPP partners.

6.2.5 Step in rights

Under concession contracts lenders ask to be given ‘step in’ rights. This allows the lender to take over the project, and if necessary bring in a substitute concessionaire, in order to forestall a termination of the concession agreement following the concessionaire’s default. The main purpose of ‘stepping in’ is to avoid a collapse of the agreement of the concessionaire and the basis by which the lender is repaid. Given this threat to its repayment, the lender is likely to ensure that it or a substitute project company appointed by it, has an opportunity to cure the default. This in effect allows the private entity to halt the government exercising its right to terminate. This right, however, can prove controversial to government entities that have not encountered them before and can lead to a number of awkward questions related to when the lender can step in, duration of the cure period and so on.

The recommendation is that the step-in clauses should identify the circumstances under which some party can step-in, and the compensation the parties are entitled to (Iossa, Spagnolo, Vellez, 2007). Regarding the public-sector party step-in rights, the contractual provisions allow the public partner to take over the private partner’s obligations in the project for a period. These provisions differ from early contract termination clauses in that they apply to situations where the public-sector party is supposed to have advantages to deal with certain types of problems. Typically, the public sector executes the step-in rights as a matter of urgency to remedy a serious short-term problem, such as a safety risk, a health issue, or an environmental issue.

PPP Law in Brazil

Federal Law No. 11.079 published in 2004 establishes the Brazilian public-private partnerships and its contracts. The law states clearly the definitions and mechanisms under which the PPP operate in Brazil. Specifically it explicitly mentions the compensation schemes for early termination of contracts and payments made by the funds and state-owned companies acting as guarantors. Theses payments must be paid directly to the institution that financed the private part of the project. In addition, the law provides step in rights by allowing that the controlling interest of the special purpose company (SPC) may be transferred to its lenders in an event that default occurs.
6.2.6 Early termination

There are circumstances that may lead the public sector\textsuperscript{78} and/or the private partner\textsuperscript{79} to terminate the contractual relationship before the contract expires. Thus, the contracting parties could agree to specify clauses determining their rights to terminate the contract earlier. Contract early termination may result from:

(i) Default of either or both parties,
(ii) Voluntary termination by the public sector,
(iii) Force majeure events,
(iv) Corrupt gifts and breach of refinancing provisions.

These factors are multidimensional and difficult to explore the root causes. The early termination of contracts can have two distinct channels. One, renegotiation, is related to a partial or complete revision of contractual clauses. The other, government takeover, is related to franchises or PPPs that are no longer financially sustainable or are at the point of bankruptcy. For instance, Guasch (2005) found that 55 percent of transport concession contracts in the Latin American and Caribbean Region between 1985 and 2000 have been renegotiated, after an average of 3 years. Renegotiations tended to favor the private sector operators, who secured increases in tariffs (62 of all renegotiations), delays and decreases in investment obligations (69 percent), increases in cost components with an automatic pass-through of tariffs (59 percent), and decreases in annual concession fees paid to the government (31 percent). So in theory, internal factors pertaining to the contract or the concession might be correlated with the incidence of renegotiation or government takeover. Using the data of Guasch (2005) which has around 1,000 concessions awarded in Latin America and the Caribbean Region, an interesting correlation is found. The monetary size of concession contracts and PPP is correlated with the incidence of renegotiation and takeovers for the main infrastructure sectors (energy, water, roads, telecoms). Corruption (point (iv) mentioned above) is related to the size of the concession since private participants have incentives for corruption when contracts represent a significant amount of monetary resources\textsuperscript{80}.

\textsuperscript{78} For the public-sector party default, the contract should specify the failures that allow the private-sector party to call for terminating the contractual relationship, making sure that the public-sector party has had the opportunity to remedy the situation.

\textsuperscript{79} In the case of private-sector party default, it is recommended to entitle the public sector party to have the project’s assets transferred to it. But to avoid benefiting the public sector party at the expense of the private-sector party by transferring valuable assets, the contract should also envisage a compensation for the later paid by the former. In addition, to avoid the costs for the public-sector party associated with terminating the project and interrupting the service provision, it is convenient that the contract includes procedures to facilitate the continuation of the project, e.g. transferring the project to the lenders or to a new private partner.

\textsuperscript{80} The contract should consider corrupted gifts and fraud as causes for early contract termination. In addressing this issue, it is advisable to take into account both the interest of the public-sector party in ceasing the contractual relationship with a corrupted and/or fraudulent partner, and the interest of the lenders, who may not be involved in any prohibited act, in recovering their funding to the project. The contract should specify which actions imply corrupted gifts and fraud. If the private-sector party is directly responsible for a prohibited action, the public-sector party should have the right to terminate the contract by paying the outstanding financial liabilities; in addition, the public-sector party should be compensated by the private-sector party and receive the project’s assets. Instead, if the private-sector party is not directly
It may happen that some of the costs incurred by a party are non-contractible, and so under-compensation occurs despite the principle of full compensation. Anticipation of the possibility of contract termination can then discourage a party from incurring in non-contractible cost such as unverifiable investment, but when the monetary value (concession size) is high enough the risk profile of the contractor shifts to risk-seeking. This may induce contracts that may not be financed in the future, leading into an upward shift on the incidence of renegotiation or government takeover.

**Compensation for Early Termination**

The contract should envisage a scheme to address the issues of determining the compensation amount and facilitating project continuation. In the companion paper we discuss three possible alternatives: (i) No compensation, (ii) Stage-based compensation, and (iii) Market based compensation, and the benefits and costs of each of them. Depending on the project circumstances, the availability or not for a liquid market in the sector where the project develops, the cost of re-tendering and the presence of alternative private partners, the appropriate approach should be chosen.

The contract should envisage circumstances under which the public-sector party has the right to voluntary terminate the contract early. In the event of a voluntary early contract termination, the private-sector party should be fully compensated, receiving a payment that leaves it in the position it would have been had the contract not be terminated. It is recommended to set the same compensation amount payable to the private-sector party in early contract terminations triggered either by the public-sector party’s default or by it exercising the right of voluntary termination.

**6.2.7 Contract Design Checklist**

This subsection contains checklists from a number of issues that should be addressed in assessing the contract design of Public-Private Partnerships for infrastructure projects, with particular emphasis to Governance issues. Its structure and content are based on the

Source: Authors’ calculations based on Guasch (2005) dataset.
accompanying best practices on contract design in order to minimize the likelihood of poor performance of a PPP, but the order is slightly modified to focus them on governance issues. Questions in bold are particularly important for the Governance of PPPs, and should therefore have higher weight in the evaluation. They are adapted from the work done by Iossa, Spagnolo and Vellez (2007). The criteria include the main issues covered by section 5 which are the following:

I. Transparency
II. Risk allocation
III. Payment mechanism
IV. Price variations
V. Flexibility and Renegotiation
VI. Contract duration
VII. Other contractual issues
### I. TRANSPARENCY

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1. Are the final contract and all other documents publicly disclosed in a proactive way?</td>
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<tr>
<td>2. If part of the contractual documentation is not disclosed, did it pass a tight test that evaluates that it is truly ‘commercially sensitive’ information, or that there is a public interest in keeping it confidential, against the presumption that they are not?</td>
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<td>3. Are output specifications, performance targets, and payment mechanism (including deductions or fines for low performance) put in the public domain?</td>
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<td>4. Does the contract require to proactively disclose measurements contractor performance along the development of the project, and payment changes connected to the measured performance?</td>
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<tr>
<td>5. Does the contract require to proactively disclose motivation and cost assessment of any change in output or in other terms of the contract before approval?</td>
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<td>6. Does the contract require to proactively disclose methodology and results of all benchmarking and market testing exercises the contract requires?</td>
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<tr>
<td>7. Is the above information disclosed in an electronic form in the main page of the project?</td>
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<tr>
<td>8. Is the above information disclosed within a pre-determined and short time from its emergence?</td>
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<td>9. Are the disclosure requirements compulsory?</td>
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<td>10. Does the contract itself specify such disclosure rules?</td>
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### II. RISK ALLOCATION

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<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
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<tbody>
<tr>
<td>11. Have the main risks of the project been identified?</td>
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<tr>
<td>12. Does the contract transfer risks to the private-sector party that it can control?</td>
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<tr>
<td>13. Does the public-sector party bear risks that the private-sector cannot control?</td>
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<td>14. Are the risks properly allocated in order to give appropriate incentives to the private-sector party?</td>
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### III. PAYMENT MECHANISM

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<th>Yes/No</th>
<th>Comments</th>
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<tr>
<td>15.</td>
<td>Are the required service standards based on output specifications?</td>
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<td>16.</td>
<td><strong>Are all these service standards easily monitorable and verifiable?</strong></td>
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<td>17.</td>
<td>If not, are other objective measures of performance specified?</td>
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<td>18.</td>
<td>Are customer satisfaction surveys used to monitor performance of the private-sector party?</td>
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<td>19.</td>
<td><strong>If yes, are customer satisfaction surveys carried out by an independent third party?</strong></td>
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<td>20.</td>
<td>Does the contract exhibit a consistent link between output specifications, risk allocation and incentives, and the payment mechanism?</td>
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<tr>
<td>21.</td>
<td>Is the payment mechanism consistent with the allocation of risks between the public and private parties, and hence with the incentives given to the private-sector party?</td>
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<td>22.</td>
<td><strong>Is the payment due to the private-sector party conditional on service provision?</strong></td>
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<td>23.</td>
<td>Does the contract specify a service commencement day after which the first payment is made?</td>
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<td>24.</td>
<td><strong>Does the public-sector party impose sufficient contractual protections from delays in service commencement, like robust deductions and liquidated damages?</strong></td>
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<td>25.</td>
<td>If the payment mechanism is based on user charges, does the tariff level ensure the bankability of the project?</td>
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<td>26.</td>
<td>Does the level of tariff discourage demand, particularly if there is an alternative free-available service?</td>
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<td>27.</td>
<td><strong>Are there provisions to combine user charges with any form of subvention from the public-sector party?</strong></td>
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<td>28.</td>
<td><strong>Do these subventions depend on the private-sector performance, like subventions based on the number of users?</strong></td>
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<td>29.</td>
<td>Is the private-sector party allowed to collect secondary revenues, like advertisement, food services, etc.?</td>
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</table>
30. If the revenues collected by the private-sector party turn out to be higher than expected, are there mechanisms to limit the private sector profits, like sharing surplus revenues?

31. If the payment mechanism is based on usage, is the definition of service usage measurable and observable, like traffic volumes?

32. Is the usage payment capped for high levels of usage?

33. Does the payment mechanism include bonuses or deductions according to availability of the service and/or performance targets?

34. Do deductions vary according to the severity of the availability/performance failure?

35. Does the contract include clear rectification periods providing the private-sector party with clear deadlines within which to rectify the failures to avoid additional and increasing deductions?

36. Do deduction payments use a ratchet mechanism where deductions increase with the duration and frequency of the failure?

<table>
<thead>
<tr>
<th>IV. PRICE VARIATIONS</th>
<th>Yes/No</th>
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<td>Question</td>
<td>Answer</td>
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<tr>
<td>45. Are all anticipated (foreseen) changes in service provision pre-specified in the contract, so they can be part of the initial bid?</td>
<td>Yes/No</td>
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<tr>
<td>46. Does the contract include provisions allowing the public-sector party to require other likely small changes that cannot be pre-specified exactly and therefore cannot be priced at the competitive tendering stage?</td>
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<tr>
<td>47. If yes, does the contract pre-specify exactly how compensation to the private-sector party for the extra costs arising from these required small changes should be calculated?</td>
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<tr>
<td>48. In particular, is any cost reimbursement compensation backed by benchmarking or market testing procedures before changes are approved and implemented?</td>
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<tr>
<td>49. Is there a third party (e.g. panel of experts) involved in approving the cost reimbursement before changes are implemented?</td>
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<tr>
<td>50. For completely unanticipated large change needs, does the contract precisely specify a transparent change protocol through which proposed changes are requested, assessed, approved, and implemented?</td>
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<tr>
<td>51. Are independent third parties involved in such a change protocol and in particular at the approval stage?</td>
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<tr>
<td>52. Does the change protocol require and detail benchmarking or market testing procedures before these larger unanticipated changes are approved and implemented?</td>
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<tr>
<td>53. Does the contract specify a freeze period at the beginning of the contract life within which no change can be requested by any party?</td>
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<tr>
<td>54. Is this freeze period proportional to the construction phase period of the project?</td>
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<tr>
<td>55. Is this freeze period longer for contract changes required by the private-sector party than for those required by the public-sector party?</td>
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<tr>
<td>56. Does the contract specify fees to accompany the private-sector demand for contract changes to be withheld by the public-sector party if the change requested is rejected?</td>
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</table>

VI. CONTRACT DURATION

Yes/No  Comments
57. Does the contract specify its duration?
58. Do the contract length and the payment profile ensure the bankability of the project?
59. Does contract duration encourage non-contractible investments?
60. Does contract duration include review periods (recurrent possibilities to stop or renew the contract to the incumbent contractor) to be used as an in-kind reward for the private-sector party’s good performance?
61. Are contract renewals contractually conditioned on reaching pre-specified target levels of performance?
62. Does contract duration allow the private-sector party to exploit economies of scale?
63. If the project involves the provision of soft and hard services by the private-sector party, do these services have different contract duration (shorter the former, much longer the latter)?

<table>
<thead>
<tr>
<th>VII. OTHER CONTRACTUAL ISSUES</th>
<th>Yes/No</th>
<th>Comments</th>
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<tbody>
<tr>
<td>64. Does the contract include a dispute resolution mechanism?</td>
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<td>65. If yes, does the procedure involve different stages for resolving disputes?</td>
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<tr>
<td>66. Does the dispute resolution mechanism envisage appointing of PPP experts or arbiter among distinguished professionals?</td>
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<td>67. Are there strict deadlines specified for the PPP experts/arbiter to make decisions and reach resolution?</td>
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<tr>
<td>68. Are the decisions made by experts/arbiter enforceable?</td>
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<tr>
<td>69. Does the contract include provisions allowing the public-sector party to step-in?</td>
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<tr>
<td>70. Does the contract specify the circumstances under which the public-sector party is entitled to step-in?</td>
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<tr>
<td>71. Does the contract specify who should bear the costs arising from the public sector’s step-in actions?</td>
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<td>72. Does the contract include provisions allowing the lenders of the project to step-in?</td>
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<tr>
<td>73. Does the contract specify the circumstances under which the lenders are entitled to step-in?</td>
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<tr>
<td>74. Does the contract include early termination clauses?</td>
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<tr>
<td>75. Does the contract specify the circumstances under which the private-sector party has the right to terminate the contract before the contract expires because of a public-sector party default?</td>
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<td>76. Does the contract specify the circumstances under which the public-sector party has the right to terminate the contract before the contract expires because of a private-sector party default?</td>
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<td>77. Does the contract specify the circumstances under which the public-sector party has the right to voluntarily terminate the contract?</td>
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<td>78. Does the contract specify the compensation payable to the private-sector party in the above cases?</td>
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<td>79. Does the contract include provisions for early contract termination because of force majeure events?</td>
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<tr>
<td>80. Does the contract specify these force majeure events?</td>
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<tr>
<td>81. Does the contract consider corrupt gifts and fraud as causes for early contract termination?</td>
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<tr>
<td><strong>VIII. SUBCONTRACTING</strong></td>
<td><strong>Yes/No</strong></td>
<td><strong>Comments</strong></td>
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<tr>
<td>82. Does the contract impose any restriction on subcontractors in order to avoid conflicts of interest?</td>
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<tr>
<td>83. Does the contract entitle the public-sector party to approve the replacement of subcontractors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>84. Does the contract impose liquidated damages on non-performing subcontractors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>85. Does the contract specify that the employment of subcontractors will terminate whenever the contractual relationship between the public and private parties terminate?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7 Contract management during construction, operation expiry and termination

The operational stage, which includes construction, operation and maintenance, is the longest stage in the life of a PPP contract. It is a process which extends over time and entails a permanent interaction to preserve the equilibrium that balances all parties’ interests. Indeed, during this stage the private sector will test its ability to carry out the activities entrusted to it, and the contract’s goals and objectives should be achieved (i.e., the project’s expected outputs). Therefore, the operational stage is critical for the success of the project pursued by PPPs. This does not play down the importance of the previous stages of contract design and bidding, analyzed in the previous modules. However, everything achieved at such stages will be ruined without the adequate cooperation among the parties to the PPP, including an efficient control by the public partner during the operational stage, which guarantees the project’s success.

Consequently, the contract’s follow-up and oversight is essential. For that purpose, certain abilities are required, which should be procured before the contract’s execution. The way in which such follow-up and supervision will be carried out, should also be previously, and formally, determined. In this sense, a clear definition of the project’s outputs is also fundamental to set out the way of monitoring. Therefore, the control of the operational stage shall be strongly conditioned by the acts performed at the previous stages.

The objective of this Module is to analyze and describe the conceptual framework of institutional and governance aspects of public sector’s participation in PPP projects during Construction & Operation Stages, which allows supervisors to manage risks, minimize the probability of failures in the PPPs (bad performance, exit of private operators) and maximize supervision during this stage through processes and tools aimed at minimizing information asymmetry (performance indicators, benchmarking, regulatory accounting, economic and financial models) while ensuring the compliance with the contractual obligations.

7.1 Key elements of effective contract management

The long life of assets in public utility infrastructure sectors (water and sanitation, energy, transport and telecom), as well as their specificity, the capital intensity, etc. make...
particularly relevant the impossibility of designing “complete contracts”, which makes the settlement of disputes in court more difficult.\textsuperscript{81}

This impossibility calls for the need to have a contract management strategy to help dealing with changes in circumstances and non contracted events or situations. An efficient contract management will help dealing with different type of problems. Adapting the contract to changes in technology or demand conditions is the first task to consider. Maximizing Value for Money and preserving the contract equilibrium and risk allocation are the two central considerations in this context.

Protecting users, particularly in the cases when the service is delivered by a monopolist is also a main concern of contract management. In many cases this particular goal is entrusted to a separate regulatory agency. When dealing with public utility infrastructure sectors, a common practice has been transferring the responsibility for the control and supervision of the contract’s operation stage to an independent regulator, with powers to set prices and oversee contract compliance by the private firm. In some cases the regulator is also entrusted with carrying out a due process to solve issues and procedures not provided for in the contracts and to settle the disputes between the parties.

Therefore, PPP contracts in such sectors evidence a special feature which relates to the institutional breaking-point that takes place upon the beginning of the operation stage.

This is the main difference of PPPs in public utility infrastructure with PPPs in other sectors (hospitals, schools, etc.), where the existence of competition makes it unnecessary for the enforcement authority to set detailed pricing rules to govern the contract. The natural monopoly nature associated to public utility infrastructure sectors causes the relationship between the parties to the contract to be more extended, thus generating a second particular feature of PPP contracts in these sectors.

Nonetheless, although that institutional breaking-point is a special characteristic in most public utility infrastructure sectors of most of the countries, it is also worth mentioning that there are other institutional alternatives to control and supervise PPP contract during the operation stage.

**PPP Units**

In many situations, during the PPP stages previous to the signing of the contract, the institutional responsibilities are borne by special PPP units specifically created for such purposes.

In many countries there exist the so-called PPP units (Error! Reference source not found.), with specific functions set forth by law, which mainly act during PPP contracts’ design and promotion stages. Although they may sometimes act during the supervision stage, they are generally created to promote the benefits of PPPs and to act as information, guidance and advisory centers. The advisory support is usually related to the design of contracts and procedures to identify, assess and complete potential PPP projects. In addition, these units can be a source of human resources for the government as well as of financial resources to fund the advising costs.82

### Table 1: PPP Units

<table>
<thead>
<tr>
<th>Functions of cross-sectoral PPP units</th>
<th>Information and guidance</th>
<th>Advisory support and funding</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andhra Pradesh, India: AP Infrastructure Authority</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>British Columbia, Canada: Partnerships BC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Gujarat, India: Gujarat Infrastructure Development Board</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ireland: National Development Finance Agency</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Italy: Project Finance Unit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Netherlands: PPP Knowledge Center</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Philippines: BOI Center</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>South Africa: PPP Unit, National Treasury</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>United Kingdom: Partnerships UK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Victoria, Australia: Partnerships Victoria</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


Irrespective of the existence of these PPP units, in these countries, when talking about public utility infrastructure, upon commencement of the operation stage, the oversight duty is usually entrusted with a regulatory agency and, in some cases the PPP unit may cooperate during this stage providing advisory support (see Error! Reference source not found. for the Brazilian experience in this regard).

### BOX 1: UNITS in Brazil

The Economic Advisory Board of the Ministry of Planning, Budget and Management - MP has a multidisciplinary team (PPP Unit) composed of sectoral specialists and professionals with expertise in concessions and Public Private Partnership - PPP globally.

The mission of the Brazilian PPP Unit is to operate as a center of excellence in Public Private Partnership for the dissemination of knowledge of the methodology and the appropriate legal framework; the design of contracts and standardized bidding processes; guidance for the performance of technical economic-financial and legal feasibility studies of the sector entities that intend to execute PPP contracts. The Unit also has the role of preparing a favorable environment for the development of PPP in Brazil, in relation to: a) regulation of the PPP law; b) management of the studies of the first projects to be put out to tender under the PPP modality; c) promotion of training; d) disclosure of information on the oversight of contracts.

The Brazilian PPP Unit is presently devoted to the development of the first projects to be put out to tender pursuant to the new modality regulated by Law No. 11,079 of 2004 and its main objective, in the medium run, is to disseminate the expertise among the sector Ministries on the standardization of projects, bidding calls and PPP contracts.

The Brazilian PPP Unit is divided into three teams: legal and regulatory powers, administrative and institutional management and strategic investments. The Decree No. 5,385 of 2005, created the Federal Public Private Partnership Management Committee –CPG– with the following duties:

1. To define the priority services to be executed under the PPP regime;
2. To define the criteria that will define the analysis of convenience and opportunity of the procurement under the PPP regime;
3. To discipline the procedures for the execution of PPP contracts and approve its amendments;
4. To authorize the opening of the bidding procedures;
5. To approve bidding calls, contracts and their amendments;
6. To assess and approve the half-yearly reports on the execution of PPP contracts, submitted by Ministries and Regulatory Agencies, in their areas of scope;
7. To prepare and submit to the National Congress and the Union’s Court of Accounts (TUC) an annual report on the performance of PPP contracts;
8. To approve the Public Private Partnership plan, support and assess its execution;
9. To propose the edition of rules on the presentation of PPP projects;
10. To establish PPP projects’ procedures and requirements as well as the respective calls for biddings, subject to the analysis of Ministries and Regulatory Agencies:
11. To establish standard calls for bids and PPP contracts, as well as the minimum technical requirements necessary for their approval;
12. To establish the basic procedures for the follow-up and periodic evaluation of PPP contracts;
13. To prepare internal rules and regulations;
14. To issue the resolutions necessary for the exercise of its powers.

Law No. 11,079 sets forth that it falls within the scope of the Ministries and Regulatory Agencies, as appropriate, the duty to support and supervise public private partnership contracts.
Moreover, the law also provides that the Ministries and Regulatory Agencies shall file half-yearly reports on the execution of PPP contracts with the CGP. These reports shall be the principal source of information for the preparation of the annual report on the performance of PPP contracts that the CGP, pursuant to item 7 of the list of duties, has to submit the TCU.

In effect, and as it arises from the INSTRUÇÃO NORMATIVA TCU No. 52, the responsibility for the supervision of Public Private Partnership contracts lies with the Federal Granting Office or the regulatory agency. Specifically, Section II provides that such institutions are responsible for the oversight of the contracts performance, which shall be carried out through surveys, inspections, audits and monitoring, as appropriate.

Source: http://www.mp.gov.br/ppp/index.htm

PPP units have a limited but important role during the operational stages of the contract. In Australia for example the PPP Unit in Finance “can assist in providing advice on PPP issues, interpreting external specialist advice and guiding an agency through the PPP process. The PPP Unit acts as a central repository of know-how and experience gathered through working with other jurisdictions and agencies. It is therefore important to consult with the PPP Unit to ensure that experience can be shared and utilized across government.”

After completion of the initial stages of the PPP process, usually in charge of PPP special units, the contract management tasks of supervision and control appear in the following stages (construction, operation and maintenance) giving rise to the need of process, institutions and tools aimed at these specific objectives.

The first section examines the required resources, organizational structure and autonomy of the public overseeing body in order to adequately manage the PPP contract. In a second stage, the governance responsibilities and principles are described, in order to identify a set of general best practices in contract management. Finally, the last section emphasizes the crucial role of market testing, regulatory accounting, financial modeling, performance indicators and benchmarking for a successful information management.

1.1.1 Resources

To effectively and efficiently manage the contract, the public overseeing body needs the proper amount of resources, organizational structure and autonomy. In the case of regulatory agencies, they must present certain organizational autonomy conditions in

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connection with their structure, human resources and financial resources. Quintanilla Acosta (2004) provides a clear and extensive review of such characteristics.\textsuperscript{84}

Such characteristics can be grouped into those that have to do with the agency’s independence and those that have to do with the aptitude of its officials. The following characteristics have to do with the agency’s independence.

1. **Clear and independent mandate:** a clear mandate to know who performs the rule-making function and who is in charge of enforcing those rules. An independent mandate in order that the agency will act independently of the political sector and its stakeholders. It is also necessary to have the regulator’s powers set by law, rather than being powers delegated from a minister or political power.

2. **Stability in the Board of Directors:** in order to achieve the agency’s goals. The members of the Board of Directors are usually appointed by the Executive and Legislative Branches to guarantee that all political parties are represented. Fixed, staggered terms of office that do not match electoral cycles, as well as irrevocable appointments, are recommended to avoid political discretion without due cause. For instance, the act creating the Energy Regulatory Commission in Mexico provides that *commissioners shall be appointed by the Head of the Federal Executive Branch, on proposal by the Secretary of Energy, to hold their office for staggered, renewable terms of five years.*

3. **Autonomous budget:** the regulatory agency should have a stable and, most importantly, guaranteed budget to adequately perform its functions without compromising its autonomy. For instance, the regulations of Spain’s Telecom Market Commission provide that *the Commission shall have its own budget to be made up of revenue from the payment of telecom rates accrued on account of service provision activities.*

The following characteristics have to do with the aptitude of the agency officials; however, these also strengthen the agency’s independence of its stakeholders.

4. **Appointment criteria:** the agency should have professionals boasting the best technical qualifications, experience and management ability. In order to establish a clear merit-based selection procedure, it is fundamental to preserve the mechanism’s transparency and to maximize the diffusion of vacancies. Professional appointment criteria usually go hand in hand with certain prohibitions and ineligibility requirements; codes of conduct and ethics are usually implemented in connection with confidentiality rules, acceptance of gifts and conflicts of interest. For instance, the Internet site of Spain’s National Energy Commission reads: *our staff is selected by a public call, through procedures based on equality, merits and ability principles. Such staff is subject*

to the general ineligibility requirements set for the staff of the Public Administration entities.

5. **Qualified, adequate staff:** the staff must have full knowledge of the sector, so as to be able to make the best possible decisions free of the party that is the most familiar with that sector: the firm. This reduces information asymmetry, information gathering costs and the risk of failure of the regulatory process. The staff must be adequately compensated, in line with market levels, in order to feel motivated, to remain in the regulatory agency’s employ and, more importantly, to avoid cooption and capture by interested actors. For instance, Peru’s Regulatory Agencies Framework Act provides that the staff of Regulatory Agencies shall be subject to the private sector’s labor regulations.

Accordingly, organizational autonomy is reached when the agency has full control of its resources, both human and financial. As far as human resources are concerned, this means that the agency has broad discretion to hire its staff, assign positions, apply promotion policies and fire staff, if necessary. For instance, ANEEL, Brazil’s National Electric Power Agency, is authorized to hire higher- and middle-level technical staff on a temporary basis. It may also create compensation criteria, for which purpose it shall observe the caps and thresholds defined in the public service schedules, positions and salaries. Regarding financial resources, this means the permanent inflow of the funds required for the agency’s operation and the power to freely use such funds.

However, the regulator is also required to have a clear mandate and be able to perform its functions without political interference or discretion. Nevertheless, rules of conduct and codes of ethics need to be established to govern the conduct of agency officials in order to avoid discretionary action within the agency itself.

A common requirement is that agency officials hold no personal interest in the relevant industry. In some cases there are formal rules prohibiting informal meetings between regulators and stakeholders. There are also rules prohibiting the hiring of officials before, during and after their terms in office. Rules that prohibit gifts by stakeholders or any other party involved in the regulatory process from being accepted by the agency’s officials. And rules keeping officials from taking part in certain decisions that involve a party with which the official has a pending issue.

**Increasing a Good Governance: Outsourcing or contracting-out**

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85 In some sectors and countries, in Latin America for the most part, the foreign subsidiary’s presence in the management of the local concession is commonly required over the first years of implementation of a PPP contract, in order to guarantee the transfer of know-how to the local company and to organize the infrastructure sectors, which, at the time of the restructuring processes undertaken in such countries, were in a state of emergency.

It is often the case that, depending on the degree of development of the regulatory agency, the agency outsources (to consultants, expert panels or even other regulators) the full performance of a regulatory function, or that it contracts for outside counseling during the implementation of these functions (tariff reviews, calculation of costs and capital base, etc.) However, the practice of contracting out is also used by agencies that are already at a mature stage of operations, as it is the case with those in the United Kingdom.

The rationale used by the former agencies for contracting out lies, on the one hand, with the little ability and training of the staff at the initial stage and, on the other, with the need to create credibility in the public eye that regulatory agencies are often faced with at that stage. Outsourcing becomes a way to promote independent management in line with international practices, particularly when international consultants—or local consultants with international experience—are used, and it is also a way to develop the agency’s in-house experience, i.e. the experience of the agency’s staff.\textsuperscript{87}

For the latter, cost efficiency is the main argument. In these cases, outsourcing certain functions allows the agency to have a reduced payroll, which translates into lower administrative and payroll costs. Here, the condition is that the agency staff be highly qualified to assess the quality of any outsourced work.

### BOX 2: Rationale for Contracting Out in Order to Increase Good Governance

<table>
<thead>
<tr>
<th>Competency</th>
<th>Contracting out can increase regulatory competency, by helping agencies to respond efficiently and appropriately to variable workloads and changing market structures. Contracting out can provide access to specialized skills only when needed, mitigate the risk of regulatory obsolescence and leverage international experience in specialized areas of regulatory practice. It can also help in building core in-house skills through training.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence</td>
<td>Contracting out can foster regulatory independence as it enables the regulatory body to benefit from the reputation of an external agent, and gives the regulator a higher degree of control over who does the work, particularly in countries where there are constraining civil service rules.</td>
</tr>
<tr>
<td>Legitimacy</td>
<td>Countries with weak or fledgling institutional capacity may find that contracting-out specific regulatory functions can increase the legitimacy of the regulatory process. In those circumstances, external studies may be perceived to be more credible and can increase the transparency of the whole process.</td>
</tr>
<tr>
<td>Cost reductions</td>
<td>Contracting out can also help in reducing costs (without compromising quality) because it can provide information about the real cost of performing the task or service, allow benefiting from economies of scale (as external providers can spread fixed costs of acquiring specialized experience over much larger markets, including national and international), and it can save precious management time which can be used on core functions rather than on specialized regulatory tasks.</td>
</tr>
</tbody>
</table>

According to Trémolet, Shukla and Venton (2004), a survey of regulators from several countries on outsourcing reveals that 41% of the respondents claim to have outsourced some of their functions, which has allowed them to bring down their costs and improve their service quality. In turn, 91% of those who have outsourced claim that this practice has helped them improve the organizational competence, independence (62%) and trust with stakeholders (71%).

75% of the surveyed regulatory agencies outsource some of their functions. The results show that outsourcing is a highly common practice for agencies in Latin America and Africa, particularly in the water and sanitation and telecom sectors.

The decision to contract out can be made by law or through contractual arrangements at the agency-creation stage. In either case, it should be noted whether the outside opinions are binding or not. The distinction has great impact on the independence and legitimacy of the regulatory framework.

If the decision is not binding, when contracting out regulators seek expert opinions but are not required to act on these recommendations. In these cases, external advisors usually provide a menu of options or different action plans; however, the regulator remains the one making the final decision. It is worth mentioning that even though this is the outsourcing method most commonly used in the regulatory context, it is not necessarily the one that best fosters the regulator’s independence.

When outsourcing is binding, recommendations by external advisors must be applied directly. Binding outsourcing is a useful tool in contexts of weak institutions. It is viewed as a way to increase the regulator’s expertise while seeking to guarantee the regulatory framework’s independence and legitimacy.

Based on their observation of regulatory outsourcing practices, Trémolet, Shukla and Venton (2004) identify five forms of outsourcing.

*Outsourcing of the contract monitoring function.* Outsourcing can be used to strengthen the contract monitoring institutions created when no regulatory agency exists. Outsourcing can involve specific aspects of monitoring and it can be binding or non-binding, depending on each specific case.

*Outsourcing of regulatory and tariff-setting decisions.* Decisions concerning regulatory functions can also be outsourced to an external advisor. Such outsourcing can be carried out by contracting a panel of independent technicians or some regulatory agency from another jurisdiction. The use of a panel of independent technicians may be of special interest in the context of tariff reviews,
where the expertise and independence of those performing this function is critical to legitimize decisions in the eyes of investors.

**BOX 3 : Outsourcing in Argentina.**

Argentina, procurement of consulting services. Section 45 of Executive Decree No. 1398/92, which regulates Act No. 24065 (the Electric Energy Act), provides as follows…

“To study the distributor’s tariff proposal, the Agency shall hire the services of an independent consulting group with recognized experience in this Sector, to submit an alternative proposal. Based on the latter proposal and the one submitted by the concessionaire, the NATIONAL ELECTRICITY REGULATORY AGENCY shall set the tariff chart for the following FIVE (5) years.”

*Outsourcing of the dispute settlement function.* Many regulators have developed internal mechanisms for the settlement of disputes between operators, consumers, the government and the regulator. These are procedures that represent an alternative to the ordinary judicial remedies, which often prove to be lengthy and costly. Delegating this function to a recognized national or international arbitrator may prove to be another tool to strengthen investor trust in the regulatory framework.

*Outsourcing to regulatory agencies from foreign jurisdictions.* Another institutional alternative for the contracting out of regulatory functions and tasks is through the assistance of regulatory agencies from other jurisdictions.

*Outsourcing of regulatory functions to non-profit organizations.* In certain cases, a good portion of the regulator’s functions and tasks are delegated to non-profit organizations. Usually, the selected organizations are prestigious universities and political institutions. In particular, universities usually offer the credibility, reputation and technical expertise that government agencies and even certain regulators lack.

Table 2 provides a summary of potential contracting-out models, identifying whether the regulatory policy recommendation by the external advisor is binding or not.
### Table 2: Contracting out models

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Ghana, water and electricity concession</td>
<td>Regulation by contract with contract supervisory unit housed in the line Ministry. The contract includes the requirement to use external contractors for specified data gathering and performance monitoring exercise, with specific funding.</td>
<td>Data gathering, Monitoring compliance with coverage targets</td>
<td>No</td>
<td>↑</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Gaza, water management contract</td>
<td>Regulation by contract with contract supervisory unit in the national sector agency. The contract defines that an external auditor should set the performance-based payment for the contractor.</td>
<td>Monitor compliance with quality targets, Determine payments to regulated company</td>
<td>Yes</td>
<td>↑</td>
<td>↑</td>
<td>—</td>
</tr>
<tr>
<td>Bucharest, water and sanitation concession</td>
<td>Contract supervisory unit at the municipal level. A national Ministry is in charge of setting tariffs but Expert Panels have a key role in adjudicating tariff reviews, and their decision are almost binding.</td>
<td>Tariff determination</td>
<td>Almost</td>
<td>↑</td>
<td>↑</td>
<td>—</td>
</tr>
<tr>
<td>Chile, water diversities</td>
<td>National regulatory body with limited independence. Arbitration Panels can settle disputes between the regulatory body and regulated companies</td>
<td>Dispute settlement (for enforcing decisions)</td>
<td>Yes</td>
<td>—</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Caribbean, telecommunication</td>
<td>Regional regulator set up by international Treaty. Responsible for a number of specific activities, but majority of role is devoted to providing guidance to the Contracting States</td>
<td>Develop new rules, Dispute settlement</td>
<td>Yes?</td>
<td>↑</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td>Tri-sector partnerships in water (Global)</td>
<td>Tri-sector partnerships allow</td>
<td>Data gathering, Develop new rules, Dispute settlement</td>
<td>No</td>
<td>↑</td>
<td>—</td>
<td>↑</td>
</tr>
</tbody>
</table>

*Key:* ↑ Positive; — Neutral.


#### 1.1.2 Governance responsibilities

There is a vast literature on best practice principles in governance (see annotated bibliography) and a good picture of the subject can be summarized in the nine principles defined during the Australia’s Utility Regulators Forum (1999). ⁸⁸

These nine principles can be divided into two groups: formal principles, on the one hand, which can be observed and materialize in the activities developed by the regulatory agency, and substantial principles, on the other hand, which although they cannot be observed, they relate to the manner in which such activities develop. Table 3 below summarizes the formal principles together with their definition and an example of an international good practice.

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<table>
<thead>
<tr>
<th>Principle</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td>It implies that all stakeholders are informed of the regulatory decisions and, basically, of the reasons underlying them. <em>Communication fosters the commitment and trust in the process.</em></td>
<td>BRAZIL: the State Regulatory Agency of Energy, Transport, Communications Public Utilities from Bahia (AGERBA), in partnership with the Brazilian Electric Energy Agency (ANEEL) and the municipalities of Bahia have implemented since 2001 the project called “Proyecto Creciendo: regulación y ciudadanía activa”, which was created for the purpose of disseminating, through schools, the rights and duties of electricity and intermunicipal transport users. The aim is to train teachers and students, and through the latter, make the training available to the families. <a href="http://www.agerba.ba.gov.br/projetoCrescendo.htm">http://www.agerba.ba.gov.br/projetoCrescendo.htm</a></td>
</tr>
<tr>
<td><strong>Consultation</strong></td>
<td>It is essential so all the parties interested in the regulatory process can actively participate in the decisions to be taken by the regulatory agency. <em>In this way, future disputes between the parties are prevented, trust in the process is fostered and support to the stakeholders is encouraged.</em></td>
<td>AUSTRALIA. The Australian Energy Regulator (AER) carries out a permanent consultation process with stakeholders. The process starts with the publication in AER’s web page of a document for discussion on a certain topic (issues paper) and the “call for submissions”. Other documents related to the original paper and providing further information on the topic are also published in the web page. Then, the documents received from stakeholders in response to the consultation are published (Discussion paper – submissions documents). Finally, a pre-decision document is published (Draft decision document), and after the stakeholders have agreed to the decision by consensus, the final decision document is published. <a href="http://www.aer.gov.au/content/index.phtml/itemId/660014">http://www.aer.gov.au/content/index.phtml/itemId/660014</a></td>
</tr>
<tr>
<td><strong>Transparency</strong></td>
<td>It implies that the regulator’s objectives, functions, processes and decisions are known by all the participants. In addition, it requires that the data on the basis of which said decisions are taken, should be available to any of the parties, provided that the confidentiality criteria that were previously agreed are observed. <em>Transparency fosters stakeholders’ trust in the regulator’s function.</em></td>
<td>COLOMBIA. The Superintendence of Public Utilities, in partnership with Colombian regulatory agencies, has been making great efforts since 2002 to fight corruption and encourage the access of all public utility sectors to information. The SUI (Unique Information System) is one of the tools applied with the aim to develop mechanisms to guarantee users’ right to get complete, accurate and timely information. The Superintendence is responsible for the management, maintenance and operation of the SUI, where all the firms of each sector participate and to which any interested</td>
</tr>
</tbody>
</table>
| Independence | The independence is considered in relation to the political influences (and its potential interference in the short run), stakeholders (and the potential risk of capture and manipulation of the information) and to the degree of independence granted to the regulatory agency to take decisions (defined at the moment of its creation). In the first two cases, independence implies the possibility of regulator to take its own decisions without the interference of said parties. In the third case, independence means to have the power to act and decide about certain issues (tariff setting, licenses, dispute resolution).

To accomplish this principle, the regulator needs to have enough experience, skills and expertise, so as to be able to take its own decisions and avoid manipulation by third parties.

*This principle encourages the trust in the process and allows the regulator to follow long term criteria in the decision making process.*

| SPAIN | The National Commission of Energy (CNE) is a good example of independence. Actually, independence is formally stated in the statute of the regulatory authority: *The CNE is a public body with its own legal personality and patrimony and full capacity to act.* Moreover, its by-laws evidence several characteristics of the agency’s institutional organization that contribute to the success of the independence principle. For example:

- The members of the Board of Directors are appointed for a six-year term, their offices are fixed and they can only be removed by other than political reasons.
- The Commission decides about its internal organization, procedures, allocation of responsibilities and duties and has the power to employ its own staff and implement its own promotion and salary policies.
- The staff is recruited following professional criteria and in accordance with the rules in force on conflicts of interest.
- The officers work under the rules set forth in the Good Governance Code.

| Accountability | The regulatory agency must provide information and report on the activities carried out and the decisions taken to the controlling authority so it can supervise its performance.

This implies to publish the Agency’s annual report, to issue periodic reports on the activities carried out and the sector’s evolution, to inform on the decisions taken in due time, to

| UNITED KINGDOM | Annual Report is one expression of OFWAT accountability. Reports comprise the activities carried out by OFWAT and its results, in issues like Price setting, Protecting customers, WaterVoice, Complaints and disputes, Safeguarding quality and service, Publications, Role of advisory bodies, etc.


The rules of procedure represent another important expression of OFWAT Accountability. These rules define the manner in which the...
have clear procedural codes and handbooks, available to all parties. The appeal mechanisms and the independent audits are also part of the Accountability.

The app will operate. It consists of a principal document and six annexes for specific issues:

- Rules of procedure
- Annex A: Procedure for conflicts of interest
- Annex B: Register of Board Members' disclosable interests
- Annex C: Matters reserved to the Board
- Annex D: Audit committee terms of reference
- Annex E: Remuneration committee terms of reference
- Annex F: Code of conduct


In addition to these principles, there is another set of principles which relate to the acts or behavior of regulators and, therefore, they cannot be observed directly. Table 4 summarizes these four principles.

### Table 4: Best Practice Principles II

<table>
<thead>
<tr>
<th>SUBSTANTIAL PRINCIPLES – NOT OBSERVABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consistency</strong></td>
</tr>
<tr>
<td>It is important so all stakeholders receive an equal treatment and can submit to the same game rules, particularly when the agency has to settle certain controversies. It promotes an impartial treatment.</td>
</tr>
</tbody>
</table>

| **Predictability**                       |
| To secure the game rules. The regulatory process becomes predictable if it conforms to the provisions of the law. Furthermore, the permanent interaction and the development of the regulatory process also provide predictability, improve the confidence and reduce conflicts. |

| **Flexibility**                          |
| To adjust the game rules to the changes in the environment and to reformulate rules which were wrongly defined. |

| **Effectiveness and efficiency**         |
| The regulator's objective shall be to implement the best alternative, the most effective but, at the same time, the most efficient. Efficiency relates to the management of the process; i.e., to minimize implementation costs, to avoid duplicity of activities and to avoid the recollection of unnecessary information. |

Except for the independence principle – which is clearly privative of the independent regulator approach – the rest of the principles apply with different degrees of relevance to all forms of institutions in charge of supervising a PPP contract in the operative phases.

These same principles are needed in the relationship between private and public parties even when there is no formal regulator in place. This is clearly reflected in Partnership Victoria Contract Management Guide (see BOX 4 and BOX 5)

**BOX 4: Partnership Victoria - Contract Management Guide**

<table>
<thead>
<tr>
<th>Principle</th>
</tr>
</thead>
</table>
### FORMAL PRINCIPLES – OBSERVABLE

| Communication | “There are a number of key factors in establishing a good relationship between the government party and the private party and other project stakeholders: … **Open communication:** Open communication is a key to maintaining a good relationship. It fosters a spirit of cooperation and the alignment of common interests between the parties. Open communication does not mean the parties must share all information relating to the project. However, a party should share an item of information if there is no good public interest, commercial, or legal reason to not share it, and sharing the information will enhance the relationship.” |
| Consultation | “Appropriate consultation and communication with stakeholders is an important component of good governance. It also assists the government party to ensure that the project conforms with public interest considerations. Consultation and communications plans should be agreed with stakeholders and documented in the Contract Administration Manual…” |
| Transparency | “The private party’s willingness to provide information may be conditional on appropriate protection of confidentiality in the project contract. The extent of the confidentiality protection for the private party will have been considered during the procurement process as part of the public interest test. The confidentiality provisions in the project contract will reflect the balance between transparency and confidentiality inherent in the public interest test.” |
| Accountability | “The purpose of the [Whistleblowers Protection Act 2001] is to encourage and facilitate disclosure of improper conduct by public officers and public bodies. Compliance with the WP Act and the development of procedures to ensure compliance are an essential part of a government party’s project compliance program. Compliance has a significant role in ensuring the transparency and accountability of an entity’s administrative and management practices by supporting disclosures that reveal corrupt conduct, conduct involving a substantial mismanagement of public resources, or conduct involving a substantial risk to public health and safety or the environment.” |

“The private party should be obliged by the contract to provide further information as well as information on delivery against outputs…”

“Reporting to senior management and the Department of Treasury and Finance: Best practice entails that such regular reports, … are important to maintain ongoing accountability and focus on scanning the contract management environment.”

“Appropriate standards of accountability in Partnerships Victoria projects must be maintained throughout the project lifecycle. The importance of accountability safeguards is enshrined in the Partnerships Victoria policy and guidance materials.”

<table>
<thead>
<tr>
<th>Principle</th>
<th>SUBSTANTIAL PRINCIPLES – NON OBSERVABLE</th>
</tr>
</thead>
</table>
| **Consistency**                 | “The principles of probity in government contracting contained in the Probity Policy and Guidelines were originally developed to introduce a consistent public sector set of probity rules. The principles of probity are: ... **consistency** and transparency of process.”
|                                 | “When determining how to manage knowledge and information effectively and identifying appropriate systems, processes and cultural levers, the government party should consider the following issues: ... How will the quality of the information be monitored over the life of the project (for accuracy, **consistency** and currency) and during the various stages of the project and transitions between stages?”
| **Predictability** (or commitment) | “It is vital to build a contract that not only identifies clearly the obligations of the private party and government, but also enables a productive relationship built on long-term perspectives and commitments.”
|                                 | “The Government’s **commitment** to openness and transparency in its dealings extends to the public disclosure of tender and contract related information.”
| **Flexibility**                 | “The KPIs need to be right at the point of contract signing. However, as the project progresses and early in the service delivery stage, there should be sufficient **flexibility** in the contract to amend and review contract KPIs.”
| **Effectiveness and efficiency** | “**Effective and efficient** public sector contract administration is essential to the delivery of project and government objectives.”
|                                 | “To minimize the risk of default by the government, the hindering of the project by actions of government and inadvertent take-back of risk, Contract Directors need to become familiar with the obligations, both express and implied, which fall or may fall upon government. After identifying these obligations, Contract Directors must ensure that these obligations can be fulfilled and the contract can be managed **efficiently and effectively**.”
|                                 | “The government party must be allocated sufficient and appropriate resources to enable **efficient and effective** contract administration, including the development and updating of the Contract Administration Manual.”

**Institutional alternatives**

**Regulatory Agency Approach**

The institutional arrangement for the supervision of PPP can take many forms being the independent regulatory agency the most common approach adopted during the 90s.
As mentioned, one of the key issues of the reform of infrastructure sectors in Latin America, which took place in the 90’s and stemmed from the experience in the United Kingdom, was to unbundle the functions of tariff setting, regulation and service provision—all of them previously concentrated in the public sector—and entrust the regulation to an independent organization with a clear mandate so as to try to protect long term objectives (greater coverage, better services, higher efficiency) from short term pressures faced by the government (lower tariffs to avoid inflation, overstaffed in state-owned companies). Since then, it is usually the regulator’s job to preserve the interests of the parties involved and to supervise the compliance with the obligations under the PPP contract.

However, the specific institutional setting will depend on many factors that need to be taken into account when deciding on the most efficient way to supervise a PPP contract. The magnitude of the project, the size of the respective country or jurisdiction, the technical characteristics of the sector, the expertise on previous agreements, the technical and institutional skills, the country’s legal tradition, etc. are all factors that must be carefully reviewed.

Table 5 below summarizes the main institutional alternatives of regulatory agencies created to supervise and control PPP agreements during the construction and operation stage.

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministries</td>
<td>The oversight function can be entrusted to ministries or to secretariats or undersecretariats reporting to them. For instance, it could be within the scope of the Ministry of Public Works and the Secretariat of the sector where PPPs are developed.</td>
</tr>
<tr>
<td>Independent regulatory agencies</td>
<td>They are specialized institutions, specially created to regulate the sector where PPPs are developed. It is required that they be independent of political interferences and any other stakeholders. They usually have powers to supervise, carry out a due process upon certain issues and procedures not provided for in the contracts and to settle the disputes arising between the parties.</td>
</tr>
<tr>
<td>Contracting out of functions</td>
<td>Sometimes, the institutions responsible for the supervision of PPP contracts outsource to third parties (consultants, experts committees, other regulators or companies in the sector, as the study case) the complete execution of some of its functions (technical supervision, in this case) or hire independent advisory services during the implementation of such functions (tariff reviews, cost of capital calculation, fixed assets valuation, among others).</td>
</tr>
<tr>
<td>Municipal or provincial jurisdictions</td>
<td>The oversight function may lie on municipal and provincial jurisdictions, and this institutional possibility is particularly important when supervising the performance of small-scale service providers.</td>
</tr>
</tbody>
</table>

89 Many of these elements represent what Levy & Spiller denominate the “institucional endowmend”, which from these authors’ point of view, plays a key role in the performance of the agencies responsible for the regulation of infrastructure sectors.
Multinational regulatory agencies

They are agencies created in neighboring countries to supervise regional projects or, also, in small, generally developing, countries when they are unable to meet the necessary resources to have a national agency.

Contract Specific Institution

Institutions which have the responsibility of overseeing a single specific contract even when multiple similar contracts exist in the sector or industry.

Traditionally sectoral ministries were in charge of the regulation and the supervision of Utilities. Given the scarcity of resources of the ministries, the tasks of policy making, regulation and service provision were practically concentrated on the operator.

The creation of an independent regulator has been the most recommended option in infrastructure sectors during the nineties. The idea of providing an independent government entity with regulation functions mainly looked for to send a commitment signal with the engagements assumed with the private sector (see BOX 6 for the water in the UK).

**BOX 6 : OFWAT; Water Regulator - UK**

Since the implementation of the Water Act 2003, the Water Services Regulation Authority (OFWAT) is the economic regulator of the water and sewerage industry in England and Wales. The Board includes the Chairman, a Chief Executive, two executive and four non-executive directors. The purpose of the entity is to promote quality and efficiency within the industry in the best interest of the consumers.

OFWAT responsibilities include:
- Set price limits
- Help to improve water and sewerage services
- Encourage companies to be more efficient
- Promoting competition
- Approve companies’ codes of practice.

**Contracting out the supervision function** is another alternative within the group of institutional possibilities that may be developed to carry out the oversight during the operation stage of a PPP contract.

For instance, regulatory agencies in the electric power sector are usually in charge of supervising the construction of electricity infrastructure works, issuing the technical licenses to authorize the construction and the completion certificates when the works are finished (new plants, network expansions, etc.). These technical licenses and completion certificates specify the technical and quality standards to be met for the construction and operation of said works, but their issuance also implies that the works, whether a new plant or an expansion, will be built in accordance with
the regulation in force. However, in some countries, the supervision and issuance of certificates or technical licenses may be outsourced (see BOX 7).

**BOX 7 : Electricity Transmission Licences in Argentina**

In Argentina, Transener, the high-voltage electricity transmission company, is responsible for the supervision of independent transmission companies that carry out expansions of the existing capacity and the issuing of the appropriate technical licenses, which establish the conditions under which such transmission companies’ network expansion shall be constructed, operated and maintained.

According to TRANSENER’s Concesion Contract, “Independent Transmission Company: It is the owner and operator of power transmission facilities that, pursuant to the conditions set forth in a technical license granted by a TRANSMISSION COMPANY under the RULES OF ACCESS, makes such facilities available, without acquiring the capacity of a WHOLESALE ELECTRICITY MARKET (WEM) agent”.

On the other hand, the oversight duty may lie on municipal and provincial jurisdictions, and this institutional possibility is particularly important when supervising the performance of small-scale service providers. In effect, for being these providers so small, the oversight duty shall require less effort and information and fewer requirements. In addition, it turns out to be more efficient also when the supervision function is carried out by institutions which are closer to the providers. Given the relatively fix costs associated to regulation many smaller jurisdictions or even small countries have adopted multisectoral regulators in which a single agency is in charge of overseeing several sectors (see BOX 8)

**BOX 8 : Multisectoral Regulatory Agency**

The State Agency of Energy, Transport and Communications Utilities Regulation of Bahia (AGERBA) was created in May of 1998 by Law No. 7,314. It is governed by a Consultative Board made up of seven Advisors and the Executive Board, which involves the group of agencies in charge of the activities of planning, advising, execution, assessment, supervision and control. Among its objectives, the following can be mentioned: to offer users a high-quality service; to contribute to the universalization of public services; to promote the technical skills and to implement an agile, transparent and efficient communication. It is in charge of the regulation, concession, control and monitoring of public services. These activities include:
- elaboration of rules and regulations;
- supervision of the compliance with the rules and regulations, the quality and efficiency of the services rendered as well as the economic and financial performance of the concessionaires;
- analysis and approval of tariff reviews and adjustments;
- performance and publication of opinion polls;
- prevention, mediation and settlement of disputes.

The existence of multinational regulatory agencies should be mentioned, which can be created in neighboring countries to supervise regional projects or, also, in small, generally developing, countries when they are unable to meet the necessary resources to have a national agency.

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In effect, the use of multinational regulatory agencies represents a practical possibility to overcome the difficulties encountered by certain developing countries to find skilled staff, with the necessary expertise to perform regulatory functions according to best practices criteria. For example, in order to find a solution to this kind of difficulties, a companies’ regulator for the electricity sector was created in West Africa, which supervises and exercises a regulatory function in several countries of the region (see BOX 9).

However, it is worth mentioning that for this type of institutional scheme to be able to efficiently and effectively perform its supervision role, it is necessary that all countries and governments involved cooperate with and rely on the institution, a situation which is not easy to achieve in developing countries.\footnote{Jon Stern, “Electricity and telecommunications regulatory institutions in small and developing countries.” Utilities Policy, 2000, vol. 9, issue 3, pages 131-157.}

Finally we can mention the adoption of contract specific institutions in charge of supervising a single contract even when multiple PPP contracts exist in the sector.

In Chilean toll roads the Concession Contract is ruled in detail by a set of documents and covers topics such as the technical description of the project to be built and operated, the investment deadlines, the service obligations, the financial guarantees provided by the company, the minimum revenue guarantee provided by the government, the dates on which expropriated land or rights of way will be available, the level of the user charges, the duration of the concession, the regime of fines and sanctions, and the compensation to be provided by the Ministry if it requests additional works or the conditions of the concession are modified. Any dispute that may arise among the private company and the Ministry of Public Works in the interpretation or application
of the Concession Contract can be presented by either party to the Conciliation Commission (see BOX 10)

BOX 10: Comisión de Conciliación - Roads - Chile

Conciliation Commission

In case of controversy this expert panel proposes an agreement to the parties. If the parties do not agree on a solution, the private company has the right to request that the Conciliation Commission become an Arbitration Commission.

The Conciliation Commission has three experts (which hold professional university degrees). One of the experts is named by the Ministry of Public Works, another by the company, and the third is nominated by mutual agreement and becomes the president of the panel.

The Commission has to be set up within 30 days of the start of the concession period. Its members will remain in office during all the life of the concession. The president can only be replaced if both parties agree.

Kind of Decisions

When acting as the Conciliation Commission, the panel has 1) to seek an agreement between the Ministry and the company if a dispute has been presented, 2) to propose terms for the conciliation, 3) to approve beforehand some major enforcement decisions that the Ministry can adopt, such as large fines, suspension of the concession, or extinction of the concession.

When acting as the Arbitration Commission, the panel serves as an arbiter and makes the final decision regarding the dispute, based on the law and the contract.

In spite of the existence of different institutional possibilities available for the oversight of PPP contracts during their operational stage, in general terms, it can be said that the creation of a regulatory agency has been, during the 90s, the most usual practice in most of the countries and sectors.

Recent PPP Approach

The regulatory institutional solution, in many cases, has not been sufficient to fulfill the goals of sector reforms and the introduction of PPPs in infrastructure sectors. For that reason, the new trends in PPPs design, particularly in developed countries, have focused mainly in the parties’ cooperation as a key factor for a successful private participation.

In this regard, Schwartz and others claim that: “The term "Public-Private Partnership" captures the history of these relations while suggesting a new recognition that the relationship between the two main parties has to be more than just contractual and that all primary risks--investment, commercial operations, social and environmental impacts, currency mismatches, force majeure, consumer and public relations--cannot be placed solely on the shoulders of one party or another when the provision of sensitive and naturally monopolistic basic services is in question. Public-Private Partnerships (PPPs) can thus be seen as an evolution of the existing models that leverage the private sector in the delivery of public services.”
This new approach focuses more on the “partnership” between the private and public sectors, thus highlighting the need to develop joint decision making mechanisms in contracts to ensure that the proposed objectives are accomplished (see BOX 11).

**BOX 11 : Partnership aspect of Partnerships Victoria Projects**

<table>
<thead>
<tr>
<th>Mixed-capital company</th>
<th>The board of the operating firm includes both government shareholders and private shareholders.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Director</td>
<td>Person in charge of coordinating the government roles in regards to the contract. Main channel between the parties.</td>
</tr>
<tr>
<td>Co-location</td>
<td></td>
</tr>
<tr>
<td>Joint Management Forums</td>
<td>Provides a mechanism to manage the relationship between the private and public parties to the contract.</td>
</tr>
<tr>
<td>Contract Administration Manual</td>
<td>Identifies what needs to be done, by whom and when. Also defines how the government’s role will be performed.</td>
</tr>
</tbody>
</table>


According to Schwartz, and others, “This comes from the hard-learned fact that governments cannot simply abandon public services to private operators, leave them to deal with anxious consumers, and to implement overly ambitious investment plans based upon the original expectations of bidding documents and static contracts, or the review capacity of unpredictable regulatory institutions. All too often, these arrangements led to renegotiation and unplanned public transfers to maintain service continuity. And at their worst, these unrealistic expectations resulted in cynical gaming by opportunistic bidders; additions of non-economic investment burdens by recalcitrant governments; canceled or nationalized projects; and a public wariness toward any private involvement in the provision of public services”.

Several mechanisms and processes for contract supervision and monitoring result from this new approach. Said mechanisms and processes are aimed at creating an opportunity for joint decision making within the contractual relationship, thus sharing responsibility for the key aspects regarding service provision.

A PPP may attempt to internalize the process of relating quality to cost of service. This is particularly true in those projects and sub-sectors--such as roads, power generation, water and wastewater treatment, and public edifices (e.g., jails, hospitals and schools)—that are far enough "upstream" from service delivery so as to be isolated from the frequent and intense pressures of the political economy.

These institutional types, which originate mainly in PPPs outside the infrastructure sectors, cannot completely replace the regulatory functions inherent to a natural monopoly. However, they may be useful supplementary elements in the design of an institutional framework for the construction, operation and maintenance stages.
Choosing an Alternative

When choosing the combination to be used, several factors must be taken into account. They comprise the technological, market, institutional, political and social aspects affecting each project in particular.

From the technological point of view, the more dynamic and changing the technology prevailing in one sector is, the more necessary it is to assure internal decision making mechanisms which allow for efficient contract adaptation, thus ensuring that the Value for Money associated to PPPs is maximized. This is particularly relevant in sectors such as IT and, within the infrastructure sectors, telecommunications, where the evolution of technology turns any technical solution obsolete in a few years.\(^93\)

The degree of market competition is a second element to consider. Clearly, there is no need to regulate competitive markets; therefore, it is possible to rely on the internal governance mechanisms of the PPP contract. On the other hand, the more monopolistic elements there are on the market or within a sector, the more necessary it will be to have external control mechanisms ensuring end consumer protection against monopolistic abuse.

The institutional endowment of a sector or country is also an important factor in the selection of the mechanisms for supervision and control of the PPP stages. The creation of efficient independent regulatory entities largely entails the existence of dully qualified human and technical resources. Provided that said resources are scarce, contractual solutions are more feasible and efficient.

The country’s legal tradition must also be properly taken into account while designing the PPP mechanisms and institutions.\(^94\) In general, the Anglo-Saxon tradition, focused on the “common law,” is more inclined to adopting contractual solutions. The Latin tradition, where the Government is mainly ruled by administrative law, in many cases restricts the implementation of purely contractual solutions to any conflicts between the public and private sectors.

The political scenario is another essential element when determining institutional solutions for PPP contracts. Solid consensus among political parties and public acceptance of the positive role that the private sector may play in infrastructure services are factors facilitating the adoption of contractual supervision and control mechanisms. On the other hand, the lack of said elements would lead to the need to adopt more rigid external mechanisms duly guaranteeing the parties’ rights.\(^95\) It should be noticed that said political elements may vary depending on the different sectors and jurisdictions, thus any related solutions would also vary.

The social aspects involved in the project are also to be taken into account. Partly, they will depend on the project and its connection with end consumers, particularly low-income residential consumers. In projects where the social aspects are not highly relevant—i.e., those where there is no direct relationship between the private vendor and residential consumers—it is easier to

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\(^93\) Reports in the UK have noted that PPP are not well suited for IT projects given the very fast path of technological change.

\(^94\) Any attempt to mechanically adopt institutional solutions to completely different contexts poses serious risks and has been the source of multiple failures in private regulation and participation in infrastructure. See Matching regulatory Design to country circumstances Ebhart A – Gridlines Note No 23 May 2007.

\(^95\) A total lack of these attributes would clearly result in the PPP unfeasibility, thus some minimum degree of political consensus is always required in these sectors.
establish contract internal mechanisms. This is the case of power generation plants, water treatment plants and free highways. In turn, water distribution and sanitation or electricity services are socially sensitive and involve direct relationships with household consumers. This leads to a greater need of independent formal regulation.

The selection of a governance structure and PPP project regulation mechanisms is then determined by these factors. Given the nature of the infrastructure sectors and the experience on PPPs and its regulation over the last years, in general, the optimum combination should include both a contractual governance system and external regulation elements.

1.1.3 Managing the information and knowledge

By the late 70s and the early 80s, the economic theory started to give information a leading role in the economic analysis in general, and in the study of monopolist regulation in particular. In this sense, Laffont (1999) pointed out two important theoretical bases. In 1979, Loeb and Magat proposed to view regulation as a contractual relationship in which the regulator (the principal) attempts to control a firm (the agent) and they emphasized that, in that relationship, the main difficulty was the regulator’s lack of information about the regulated firm. In 1982 Baron-Myerson showed that there was a trade-off between efficiency and the unavoidable informational rents that must be given up to the regulated firm, when the regulator wants a project to be realized but does not know the cost of the regulated firm.

Since then, regulation has been characterized by economists as a game between the regulator and the regulated firm in which the two players do not share the same information. Therefore, the regulatory agency, which is responsible for the analysis and the evaluation of the regulated firms’ performance, must design and implement systems to generate information and resort to mechanisms that encourage the disclosure of truthful information for mitigating the information asymmetry that exists between the regulatory agency and the firm.

In this sense, a key issue is that the regulatory agency should be clearly empowered to require information and to penalize those agents that do not meet this requirement. Such power must be defined at the early stages of the PPP contract.

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In addition to these general powers set forth in the regulatory frameworks, it is also necessary to provide the supervision agencies with specific powers ideally established in PPP contracts. The inclusion of guidelines on the generation and provision of information in PPP contracts plays a key role to ensure that the regulator have adequate access, in due time and manner, to the data necessary to efficiently perform supervision during the operation and maintenance stage.

The way in which the agency uses the available instruments and tools will also create incentives for firms to provide truthful information. In this sense there are many “information revelation mechanisms” that the regulator can use to give the right incentives to firms (see BOX 4 below).

**BOX 12 : Peru, power to require information.**

**Decree Law No. 25844. Electric Power Concessions Act, 1992. Section 31:**

The electric power generation, transmission and distribution concessionaires shall have to: d) Submit the technical and economic information to statutory and regulatory agencies, pursuant to the conditions and terms set forth in the Regulations...

**Decree 009-93-EM. Regulations of the Electric Power Concessions Act, 1993. Section 58:**

OSINERG and the Commission shall directly request the information necessary for the performance of their duties. Concessionaires and licensees shall be bound to submit all the information about the power sales contracts and other business information...

**Law No. 26338. General Sanitation Services Act, 1994. Section 22:**

The service providers’ obligations include: f) the provision of all technical, financial and other information that the Superintendence or the Regulations of this law, require.

In addition to these general powers set forth in the regulatory frameworks, it is also necessary to provide the supervision agencies with specific powers ideally established in PPP contracts. The inclusion of guidelines on the generation and provision of information in PPP contracts plays a key role to ensure that the regulator have adequate access, in due time and manner, to the data necessary to efficiently perform supervision during the operation and maintenance stage.

The way in which the agency uses the available instruments and tools will also create incentives for firms to provide truthful information. In this sense there are many “information revelation mechanisms” that the regulator can use to give the right incentives to firms (see BOX 4 below).

**BOX  Water Panel Chile**

In the Water and Sanitation sector in Chile dispute resolution is done by an expert panel. The panel has three experts; one expert is named by the Superintendence, another is named by the regulated company, and the third is selected by the regulator from a list of experts agreed by both parties at the beginning of the review process.

For each parameter of the tariff model for which the regulated company stated a discrepancy, the panel has to choose the value adopted either in the tariff study of the Superintendence or in the study of the company. The panel cannot select a different value for those parameters, but it can modify the value of parameters for which there is no discrepancy if that is required for the consistency of the tariff scheme. The decision of the panel is final and mandatory for both parties.

This clearly creates an incentive for both parties to propose reasonable values for the parameters rather than adopting extreme assumptions.

Source: A. Jadresic - Experts Panels in Regulation of Infrastructure in Chile

In addition to the powers necessary to get data and information from the regulated firm, the regulator can use a set of instruments to reduce information asymmetry. These instruments include: competition for the market, performance indicators, benchmarking, regulatory
accounting and economic and financial models. The main characteristics of these instruments and best practice examples are summarized in Table 6 below.

**Table 6 : Instruments to reduce information asymmetry**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Competition for the market  | • Competition among private agents that wish to be awarded a service, subject to public bidding by the regulated company.  
• Competitors shall offer their best possible price for the provision of the service.  
• Regulator creates incentives for the regulated firm to cut costs. | Gas supply in Argentina. **ENARGAS.** Annex A to Decree 2255/92 “Transportation License. Basic Rules”, item XIV (Supply Regime).  
*The Licensee shall adopt for the procurement of goods and services, procedures that ensure the transparency and competitiveness of the contracted conditions. Said procedures shall have to be communicated to the Regulatory Authority.* |
| Performance indicators      | They allow:  
• A synthesis of certain aspects of the firms’ performance.  
• An analysis of the performance through the comparison of actual indicators with ideal or optimal ones, towards which the firms’ performance should be focused.  
• A comparison with indicators of similar firms. | Performance indicators are widely used in the Water and Sanitation sector in Latin American countries. Brazil, Bolivia, Chile, Argentina and Peru, they all have this type of control tool.  
**Performance Indicators System of the National Sanitation Services Superintendence of Peru – SUNASS.**  
*Resolution of the Management Board No. 10 - 2006-SUNASS-CD approving the Performance Indicators System for Sanitation Services Companies.* |
| Benchmarking                | • It allows the comparison of firms from the same sector, both domestic and international.  
• It allows the consideration of the characteristics of the consumption and infrastructure of the firm under analysis that may be different and, eventually, can cause distortions in the conclusions arising from a direct comparison. | The regulatory agency of the UK water and sanitation sector has large experience in the use of benchmarking practices for the setting of tariffs. **OFWAT.** Documents that disclose the results of benchmarking between British water and sanitation companies.  
• *International comparison of water and sewerage services report (annual report).*  
• *Water and sewerage service unit costs and relative efficiency report (annual report).* |
| Regulatory Accounting       | • It is a set of principles and rules to present the information aimed at regulatory firms.  
• It includes certain account treatment and registration purposes that differ from those used by traditional accounting practice.  
• It involves greater information requirements and specifies presentation layouts for the | The British and the Australian regulators are examples of best practices in regulatory accounting  
*The Guidelines are minimum requirements. The obligations of a Licensee to comply with the Office’s Guidelines are: additional to any obligation imposed under any other law applying* |
In fact, all these instruments can be seen as “contractual means for maintaining value for money during the contract period”. As such, their use in PPP/PFI projects in the UK is widespread (see Chart 1).

![Chart 1: Value for Money Mechanisms - UK](chart.png)

As seen from the UK experience the use of these instruments is not limited to infrastructure sectors or activities subject to formal statutory regulators. Reducing the asymmetry of...
information and securing an efficient supervision of the contract are key elements for ensuring that the expected benefits of PPPs materialize.

*Market Testing*

One of the possibilities to reduce information asymmetry inherent to the regulation of public utility infrastructure consists in resorting to the competition for the market. Although, in general, this mechanism is used during the first stage of the life of PPPs, it can also be established in the contract the obligation to contract out certain works or services through mechanisms that ensure the competitiveness of the conditions (see BOX 13).

**BOX 13 : Market Testing - UK**

Market Testing means the re-tendering by the project company of the relevant soft service so that the authority can test the value for money of that service in the market. Any increase or decrease in the cost of such a service following market testing should be reflected by an adjustment in the price charged to the authority.

Source NAO 2007

Its use is relevant not only for the provision of soft services – as in the case of the UK PPPs – but also similar mechanisms can be used to procure some specific assets within a larger PPP contract\(^{100}\).

Clearly, the ability of market testing to deliver its potential benefits depends on effective competition between alternative providers. Two key factors will ensure the competitiveness of any bid or auction: ensuring a large number of bidders and avoiding implicit or explicit collusion among them\(^{101}\).

The implementation of this methodology is costly and time consuming so as with any other tool used, a careful value for money analysis should be made for its use in each particular project. Table 7 summarizes some of the problems associated to this instrument.

**Table 7 : Market Testing : Problems**

- Lengthy preparatory time and usually a costly process.
- The incumbent may be in a powerful position to win the market test and so the process may not be as competitive as initially thought.
- Lines of communication can become complicated when the replaced incumbent had provided both hard and soft FM.
- Requires a sufficient number of alternative suppliers to make it a competitive market.
- Tendered price may be non-negotiable.
- Process improvement opportunities can be lost.

Source: NAO 2007

\(^{100}\)For example the obligation of competitive procurement of some of the contractual investments included in the water concession in Buenos Aires.

\(^{101}\) See Klemperer 2004 – Auctions: Theory and Practice
The dynamic nature of contracts and services has to be considered during these exercises. As NAO 2007 points out: “Where service amendments need to be made in conjunction with benchmarking or market testing exercises the amendments need to take into account the needs of users, opportunities for innovation and the ongoing demonstration of value for money and affordability.”

**Key Performance Indicators**

Another method to reduce information asymmetry is to design a system of Performance Indicators which evidence the most relevant aspects of the business performance carried out. The Performance Indicators are, as their name indicates, indexes that allow a synthesis of some aspects of the business performance. Then, this performance can be analyzed by comparing these indicators with ideal ones, which represent the ideal towards which the firms’ performance should focus and also with the indicators of similar firms (regarding the market, the size, the performance period in charge of the service provision, etc.) to get a picture of its relative position (departure from ideal or optimal levels) and the possible reasons of it.

**Table 8: Performance indicators to measure PPP performance**

<table>
<thead>
<tr>
<th>Category</th>
<th>UK</th>
<th>Victoria</th>
<th>France</th>
<th>Brazil</th>
<th>Hungary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency measures defined in terms of inputs and outputs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Effectiveness measures in terms of outcomes</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Service quality measures</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Financial performance measures</td>
<td>✓</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process and activity measures</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

# Although contracts in Victoria do not typically include financial performance measures, the government does monitor the financial performance of a concessioner and its principal contractors (private parties must submit their financial documents to government).


These indicators can also be used to define thresholds which would trigger some institutional actions. For example the electricity concessions in Buenos Aires establish that if fines for poor quality reach 20% of revenues in any given year the government has the right to terminate the concession. Less draconian measures would involve obligation to present a report or call for a specific committee to be assembled if the level of quality falls below a given level.

**Benchmarking**

Another potentially valuable tool to reduce information asymmetry inherent to the regulator-firm relationship and to implement a supervision of the firms’ performance is the so-called Benchmarking technique and Yardstick Competition (a more formalized version of the

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102 KPI targets are often specified in terms of acceptable range of performance rather than single-point measures of performance.
The benchmarking makes calculations with conceptual bases that allow the comparison with other firms in the sector, both domestic and international, highlighting in each case the characteristics of the consumption and the infrastructure of the firm analyzed that may be different and can eventually produce distortions in the conclusions arising from a direct comparison (see BOX 14).

**BOX 14 : Benchmarking**

Benchmarking is the process by which the project company contractor compares either its own costs or the costs of its subcontractors against the market price of equivalent services. If the costs are higher than market prices, a reduction in the price charged to the public sector should be made on an agreed cost-sharing basis to reflect the differential. If costs are lower than market prices, the project company must justify any price increase.

Source: NAO 2007

Availability of good reliable data is in most cases the binding constrain faced in the implementation of this mechanism. Table 9 summarizes some of the problems found in the use of benchmarking in PPPs by the UK National Audit Office.

**Table 9 : Benchmarking Problems - UK**

<table>
<thead>
<tr>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparable data may not be available or be expensive to access.</td>
</tr>
<tr>
<td>Expectations gap between the authority and the private sector over the cost of services may make agreement on the outcome difficult to achieve.</td>
</tr>
<tr>
<td>Difficulties in finding suitable benchmarking data make it less credible as a transparent and accountable process and therefore harder to justify the value for money outcome.</td>
</tr>
<tr>
<td>Audit trail not always clear. Private sector may limit benchmarking information due to commercial confidentiality.</td>
</tr>
<tr>
<td>Potential for disagreement/dispute to drag on.</td>
</tr>
<tr>
<td>Can strain current relationships.</td>
</tr>
<tr>
<td>No opportunity to replace an unsatisfactory incumbent.</td>
</tr>
</tbody>
</table>

Technical capacity of the team in charge of the implementation is also a crucial element to consider. Often a mechanistic approach to the use of these tools is assumed without a clear understanding of the main economic and managerial issues underlying the business. This would certainly result in conflicts with the private party and provide little benefits to the project.

A good governance alternative is to engage in a collaborative process as suggested by 4ps: “the service provider and the local authority should carry out the benchmarking and/or market testing as a joint exercise, as there would be little value in the service provider performing the exercise and simply reporting the results as they both must agree on a value for money outcome. That said, the main focus of this exercise should be on the service provider demonstrating value for money and the local authority using market testing as a means of securing the best deal”<sup>105</sup>.

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<sup>105</sup> 4ps A guide to contract management for PFI and PPP projects 2007
This collaborative approach is also suggested by Coelli et al: “… You should show the firms and other stakeholders draft versions of the efficiency analyses and encourage them to criticize the variables selected, the way the variables have been defined and measured and so on. If the firms believe a better model could be estimated, they should be encouraged to supply any extra data that are needed that would permit a new analysis." It is important that the stakeholders see the analysis as an iterative process and not as a “take it or leave it” situation.

**Regulatory Accounting**

For facilitating and improving the regulatory activity, the international practice recommends the implementation of a Regulatory Accounting system, which differs from the traditional accounting. As stated by Groom, Schlirf Rapti and Rodriguez Pardina (2007), “‘traditional accounting information and some of the basic underlying principles of accounting make it useful for regulatory purposes. Nevertheless, regulatory purposes differentiate the regulator’s needs from those met by traditional accounting information in several areas. These limitations make it necessary to complement these generally accepted accounting principles with specific rules and norms that make accounting information useful for regulation purposes.’”

The regulatory accounting is a set of principles and rules to present the information aimed at regulatory firms. It includes certain account treatment and registration principles that differ from those used by the traditional accounting practice. It also involves greater information requirements and specifies presentation layouts for regulatory reports.

This tool allows the allocation of costs, revenue and assets to the different activities carried out by the firm and therefore, a direct view of the costs and revenues of the regulated activity, increasing transparency. Moreover, it uniformizes the information submitted by regulated firms, harmonizes regulatory reports with traditional accounting reports and promotes transparency, all of which facilitates the supervision task of the regulatory agency and reduces information asymmetry.

However, even when the agencies do not specifically apply a real regulatory accounting system, the imposition of clear and minimum information requirements, homogenous for all regulated companies and supported by a rule and an enforcement mechanism, represents a concrete method for the regulator to reduce information asymmetry and to increase fairness. In this sense, a recent study shows how the application of international accounting standards reduces risks.

A less demanding alternative which should be seen as the minimum requirement in terms of accounting is the “open book accounting” approach used in PPP projects in the UK (see BOX

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106 Note that these can be seen as an information revelation mechanism as discussed above.

107 Coelli et al – A Primer on Efficiency Measurement for Utilities and Transport Regulators.


15. This approach is defined as “a description of arrangements whereby part or all of a contractor's financial records for a project can be seen by the authority”\textsuperscript{110}.

**BOX 15 : Use of Open Book Accounting in PPPs - UK**

55 per cent of the contracts we surveyed had provisions for open book accounting. As well as helping authorities to understand the contractor's financial position and determining the outcome of any profit sharing arrangements, open book accounting can also enable an authority to work in a collaborative manner with its contractor. For example, National Savings takes care, when planning a marketing campaign, to time it to run when there is a trough in Siemens' workload so as to even out Siemens' costs.

Open book accounting could also help a contractor to draw to the attention of an authority any problems to which the contractor believes the authority has contributed. For example, one contractor told us that it had incurred additional costs because the authority had ordered a new service but did not deliver sufficient users of the service to generate the expected additional revenues for the contractor to offset the costs of developing the service. Another contractor said the authority sometimes asked for a new service to be developed but then changed its mind.

Supervision during the operative phases will require the contractor to supply relevant financial information to the authority. The inclusion of open book accounting will help to ensure that value for money mechanisms are working as they should. It will also give the authority a greater understanding of the contractor's cost drivers and the impact on its profitability of authority actions or any changes made to the contract (NAO 2007). And importantly, the increase in accounting transparency will reinforce the trust between the PPP partners.

**Economic Financial Models**

Finally, the regulator can apply economic and financial models as a basis for decision-making. The objective of these models is to quantify, in a transparent manner, the impact of the regulatory decisions adopted.\textsuperscript{111} They are basically “improved” financial models designed to provide a rigorous analytical tool which allows regulators to deal uniformly with the respective forecasts. They calculate the internal rate of return (the same as a financial model), and for that purpose they take into account all the contractual restrictions imposed on the operators, the economic behavior of the agents involved and, also, they allow the regulator to analyze the social aspects of the service provision. They also allow the simulation of the consequences that would result from changes in the policies or behaviors, for the different players (users, operators, government). The governance advantage of using such kind of models is that the PPP partners can predict \textit{ex ante} the behavior of the regulator, increasing trust between both sides and a sense of fairness and transparency.

Regardless of the degree of detail that these model show, they all follow a similar structure. They are built from an initial database (that summarizes the physical and financial performance of the

\textsuperscript{110} NOA 2001

\textsuperscript{111} For a further discussion, see Estache, Antonio, Rodriguez Pardina, Martin A., Sember, German and Rodríguez, José María, "An Introduction to Financial and Economic Modeling for Utility Regulators" (March 2003). World Bank Policy Research Working Paper No. 3001.
firm, and which includes most of the accounting information frequently gathered by the operator), an identification of the regulatory instruments (for example, tariff structure, service quality levels, timing and type of investment, etc.) and some economic parameters (such as demographic characteristics of the operation area, economic indicators that define demand, efficiency levels, etc.)

Then, these models are based on explicit determinations about the expected impact resulting from the reaction of the main players (users and operators) to regulatory instruments. This is accomplished through the explicit modeling of the functional relationships (behavior functions) existing between the consumption level and the instruments. The determination of these reactions defines the financial equilibrium of the operator.

A particular form of economic financial model used in PPPs is the Public Sector Comparator (PSC). Victoria Partnership defines it in the following terms: “The PSC estimates the hypothetical risk-adjusted cost if a project were to be financed, owned and implemented by government. The PSC is developed in accordance with the required output specification; the proposed risk allocation reflected in the contract released with the Project Brief, and is based on the most efficient form and means of government delivery.”

It is worth mentioning that even the best regulatory models are necessarily simplifications of the interactions that they represent. The quality of the model depends on the soundness of the assumptions. In turn, the robustness of these assumptions depends on the quality of the available information. It is essential that these models be based on a solid process of information gathering about each of the key decision-making indicators.

This is why in recent years in the UK the use of the PSC has evolved focusing on the efficient use of available databases for cost estimations and more simple in house developed models.

Eventually, the permanent application of all these instruments results in the reduction of the information asymmetry inherent to the regulatory process, the formation of a solid database as well as agiler and more reliable regulatory processes.

### 1.2 Monitoring the private partner and reporting its performance

In order to monitor the private partner’s performance, from the point of view of the incentives to efficiency, it is more appropriate to focus regulation on the goals and not on the means. Put differently, ideally the control should be focused on objective measures of products or services provided and not on the investment or expenses incurred to generate them. Therefore, the supervision and the disclosure of information in relation to said measures become essential.

However, there are exceptions to this rule. When the results of a bad performance or investment deficiencies give rise to serious and irreversible consequences that go beyond the economy (e.g.

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112 The use and the critics and problems associated to the PSC are discussed in Annex P
113 PSC a Technical Note – Partnership Victoria
water pollution), there are grounds to focus the control on the process and the means since waiting for the consequences would be inappropriate.

Therefore, in the process of performance monitoring, the overseeing body will carry out a physical supervision during the construction stage to ensure that the assets meet the required quality standards of the contract, and an economic supervision to control the financial rationale behind budgetary overruns. And in addition to execute the performance monitoring during operations, the public partner will have to manage the relationship between the different stakeholders, to ensure a regular and effective communication. In any case, it is essential to supervise the information associated to costs and revenues and to have clearly defined performance measures in order to achieve the objectives of the O&M stage. Finally, both partners will have to establish a system of change management, to deal with unexpected new conditions like technological or political change, previous errors and sub-optimal quality standards, or an underestimation of the complexity of the intervention.

What to do with this box?

<table>
<thead>
<tr>
<th>Transparency of the private partner performances</th>
</tr>
</thead>
</table>

33. A partir del inicio de la vigencia de los contratos de servicios de largo plazo, las dependencias y entidades deberán reportar, a través del Sistema Integral de Información de los Ingresos y Gasto Público, la información que especifique la Secretaría, a fin de evaluar el cumplimiento de los objetivos y metas que se hayan establecido cuando se solicitó la autorización de realizar el proyecto para prestación de servicios correspondiente.

34. La Secretaría y la Contraloría, por conducto de la unidad administrativa que corresponda, en el ámbito de sus respectivas competencias, podrán solicitar en cualquier momento información relativa a los proyectos para prestación de servicios y a los contratos de servicios de largo plazo, con el objeto de conocer su situación y el avance en la ejecución de los mismos.

1.2.1 Reporting requirements for the construction stage  
(construction progress, commissioning and hand over reports)

Supervision during the construction stage can be divided into two main elements: economic and physical. Economic supervision relates to ensuring that any costs overruns by the private party are justified before they are documented in the contract. Physical supervision has to do with ensuring the assets are of the required quality and specification.

According to Standard & Poor’s, multiyear construction works programs are often the most challenging stage in any PPP project’s life cycle. They identify the “grantor bureaucracy and changes” as the main problem during this phase (see Chart 2)

Chart 2 - S&P Construction Problems
According to this study, a quarter of the respondents identified the behavior of the public partner as the main issue in the construction phase. The actions or omissions of the public sector in this stage affect the PPP projects in different ways, as illustrated in the Box 16.

**BOX 16 - Construction Problems**

- **Capability.** The client does not possess the experience, technical skills, or resources to manage the public-sector obligations associated with a long-term, active partnership with private-sector providers.
- **Legacy.** The client tries to manage PPPs as they have previously managed conventional design and build contracts, in an adversarial, "them-and-us" environment.
- **Preparation.** The client fails to define a clear output specification, to complete enabling works, to secure land, or to grant permits or approvals.
- **Expectations.** The public sector client's expectations of who is responsible for what, and what has to be delivered (by when) fail to match the private sector's understanding.
- **Process.** The client fails to establish streamlined, transparent procedures for day-to-day liaison with its private-sector partners.
- **Oversight.** Existing deficiencies in the client's project supervision and control procedures will not be cured, absent any other changes, simply by moving from traditional procurement methods to PPPs.
- **Change.** The client pushes for scope or specification changes, or variations, with limited regard for cost or time implications, or in the absence of contractual clarity about how such changes should be accommodated.

**Costs Supervision**

Despite the clear importance of this phase and the specific problems and risks it entails, the level of effort and detail required for economic supervision depends to a large extent on the structure of the PPP contract. If the contract takes the form of a price or revenue cap, the private partner bears all the risks of cost overruns and therefore in principle there is no reason to supervise costs. On
the other hand, if the contract takes a cost plus format there is a clear need for a detailed analysis of the construction costs.

Although the basic idea of PPP contracts is to transfer construction risks to the private sector by adopting a price or revenue cap payment mechanism, this is not always possible.

According to Grimsey and Lewis: “a defining characteristic of a PPP is not private-sector involvement in itself, but ‘bundling’ […] With a PPP, the asset and service contracts are combined, and there is integration within a private sector party of all (or most of) the functions of design, building financing, operating and maintenance of the facility.”

The conceptual basis for this approach relay on transactions costs, reputation and information costs and incentive structures models. The intuitive explanation is straightforward. In most cases there are good performance indicators for the quality of the service while the quality of the asset is non observable. In this way by entrusting both construction and service delivery to a single party and relating payment to the provision of the service at a predetermined level of quality standards, the right incentives are created for the entity to design and build the assets efficiently, operate in an efficient way so as to contain costs while not sacrificing quality.

In a well-designed PPP contract, construction risks are generally allocated to the private party, and therefore, this party is the most interested in completing the work, because completion which shall trigger the payment agreed upon in the contract. On the other hand, if this party does not observe the agreed-upon terms and budget levels, it shall not only be unable to collect the payment but also will be liable for the penalties set forth in the contract. This is basically defined on the rules agreed at the contract’s design stage. These rules must clearly set the penalties in case of delays or any other event that may occur.

Two factors can affect the possibility of adopting a pure price cap mechanism. Firstly, bundling design and construction implies that it is very difficult to estimate the final costs as several variables, which are not know at the moment of bidding or contract signing, affect them. Secondly, the cooperative nature of PPP means that government plays an important role during the construction stage on matters affecting the final costs of the project.

As shown by the S&P study (see Chart 2 above) there are several factors influencing the costs behind budget or schedule problems in this stage. Aggressive budget and tight schedules set by the government are often cited as sources of problems. Ground site conditions and delays with permits and approvals also rank high among the causes of delay and cost overruns. The first two can be seen as risks which the private party should take into account in the bidding process. But the other two are mostly out of their control and, especially in the case of permits, is clearly a government responsibility.

The governance issues, in terms of both sides’ transparency, predictability and efficiency, emerging from the conditions cited above, involve an extra increase in the costs of the private partner. Due to the budgetary problems in which the private actor may incur, the public partner needs to carefully supervise the unexpected costs during the construction stage.

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Non-compliance is not always related to the operator’s inefficiency. Lack of control and the impossibility to forecast the diversity of investments required in a plan generate in many cases delays or cost overruns which are outside the control of the operator.

It is also important to point out that some of the factors outside the operators control are directly in the hands of the government. Construction permits are a clear example. Other factors are not directly controlled by the public partner but nevertheless the public sector is in better position to manage them. Dealing with the opposition to the project by some stakeholders (specially those related to civil society actors or citizenry – “not in my backyard” attitude) is the most common example of situations in which the government pursuing a public good can help to avoid unexpected higher costs in the construction stage (see ).

**BOX  Siting Permissions for High voltage Lines**

In the 1980s and early 1990s, siting and constructing electric transmission lines was a straightforward process for the utility, entailing engineering and preparation of the application to the siting agency. The efforts of Cross-Sound Cable Co. LLC to site and construct a 330-megawatt electric transmission line buried under the seabed of Long Island Sound from New Haven, Conn., to Long Island, N.Y., illustrate the new siting reality.

Today, siting and constructing an electric transmission line has become a multi-disciplinary municipal, regulatory and litigation process with a maze of twists and turns. The process can be circuitous, repetitive, time-consuming and costly.

On July 24, 2001, Cross-Sound applied to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need to construct, operate and maintain the cable project. On Jan. 3, 2002, the siting council granted a certificate to Cross-Sound. The siting council determined the cable project would provide a public benefit and would not have any environmental impact that would provide “sufficient reason to deny the application.”

After the siting council approved the project in January, that decision was challenged over a period of eight months by the state legislature, the city of New Haven, Connecticut’s attorney general, and several shellfish companies, but each challenge was either withdrawn (in the case of the shellfish companies), or dismissed by a higher court or other legal authority. During this time Cross-Sound installed its transmission cable.


The need for the public sector to take an active role in solving these types of problems in the framework of its duties as a partner to the project should be stressed. An active management of stakeholders’ relations is critical during the construction phase of the project.

**Physical Control**

By bundling the construction and operation and maintenance stages PPP contracts ensure that the private sector has the right incentives during the construction stage as it will be responsible for providing the service. Defects during construction will increase operation costs in the following stages therefore there are incentives for efficient construction.
Even when there is a well-designed contract, there are two arguments that justify the supervision of the physical work throughout the construction process. The first one is related to the existence of irreversible results and, therefore, the potential negative effects beyond the economic aspects have to be constantly checked. The second reason is that some characteristics of the new asset are not directly observable upon its completion.

When considering specific types of infrastructure (for example, hydroelectric power stations, nuclear power plants, water treatment plants, etc.), certainly it is impossible to change the final outcome once the infrastructure is completed, if it does not meet the expected quality requirements and standards necessary for an adequate and safe provision of the service.

For instance, the construction of a nuclear power plant entails certain requirements for a regular and safe operation. The materials, the structures and even the design must meet certain requirements and this is the reason why it is essential to supervise the work progress, although in this case, not in relation to the compliance with the terms of completion as mentioned in the previous paragraph, but in relation to architectural and design aspects. Once the work is finished, if it does not meet the aforementioned requirements, it will be unsuitable for use, and thus an important amount of resources would have been wasted.

Lack of work progress supervision, in the case of irreversible results, represents a significant risk that may cause effects beyond the economic aspects. On the other hand, if the supervision is not adequate and the infrastructure starts to operate even without meeting certain requirements, this will give rise to a very dangerous risk for all the population.

BOX 17 shows a checklist included in the Practitioners’ guide to Victorias’ partnerships for the supervision of projects during the construction and commissioning stages.115

<table>
<thead>
<tr>
<th>Matters to plan include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Setting and achieving contracted milestones for development, site acquisition,</td>
</tr>
<tr>
<td>construction and commissioning;</td>
</tr>
<tr>
<td>• Ensuring that financial arrangements are in place, ready to be drawn down as required;</td>
</tr>
<tr>
<td>• Ensuring adequate insurance coverage is obtained;</td>
</tr>
<tr>
<td>• Setting up appropriate quality management systems and providing for their audit;</td>
</tr>
<tr>
<td>• Ensuring that government does not inadvertently take back risks allocated to the</td>
</tr>
<tr>
<td>private party (for example, by approving design changes);</td>
</tr>
<tr>
<td>• Ensuring that any later variations to contracts do not change the risk profile;</td>
</tr>
<tr>
<td>• Ensuring that no changes in practice or procedure occur which amount to de facto</td>
</tr>
<tr>
<td>waivers or contract variations without prior consideration and approval;</td>
</tr>
<tr>
<td>• Ensuring that any critical issues and claims by any parties are investigated and</td>
</tr>
<tr>
<td>dealt with in a timely manner;</td>
</tr>
<tr>
<td>• Establishing a contingency plan in case of service failure during the project</td>
</tr>
<tr>
<td>implementation phase (if relevant) — this includes identifying any possible need to</td>
</tr>
<tr>
<td>step in or take other action to ensure the project is delivered in line with the</td>
</tr>
<tr>
<td>contract terms and conditions;</td>
</tr>
</tbody>
</table>

Setting up a reporting and monitoring system — this should be provided for in the contract;

Developing a communications plan for public relations and for communicating key changes to internal stakeholders; and

Planning for obtaining completion and compliance certificates.


In the supervision of the construction stage, particularly as regards the engineering and technical aspects of the project, it is very likely that specialized services are contracted out. The existence of specialized firms to develop this supervision task, the short deadlines implied (since in a typical infrastructure project, the construction stage is shorter than the operation stage) and the possibility of anticipating the aspects to be supervised are all factors associated to the mechanisms of contracting out.

**Construction end and Debt Refinancing**

An important issue at the finalization of the construction period is the treatment of any gains arising from debt refinancing. The completion of the construction stage involves a major change in project risk and cash-flow. On the one hand construction risks disappear as the asset is completed. On the other hand the cash-flow usually turns positive as the project starts to generate revenue (see Graph RR).

**Graph RR – Construction end and Cost of Debt**

For this reason many projects start with short term debt which is refinanced once the construction is complete. This will usually generate a positive impact on the project\(^{116}\). The treatment of economic and financial profits arising from refinancing will depend on the rules established in the contract. Since 2002, in the UK, PFI contracts provide for public authorities to receive 50 per cent of any gains arising from debt refinancing; for older contracts, a voluntary code (“the Code”) applies whereby authorities expect to receive 30 per cent of the gains from debt refinancing.

A report by the comptroller and auditor general in the UK warns raises certain important issues that have to be analyzed during the refinancing. These relate on the one hand, to the risk of the government taking back certain risks as the result of the change in the debt profile (see BOX).

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\(^{116}\) A report by the House of Commons Committee of Public Accounts (2007) shows that in some projects the internal rate of return (IRR) increases my a multiple of between 4.6 to 2.4 as a result of refinancing.
BOX - Refinancing: Risk from Increased Borrowing

Increasing borrowings (beyond what is actually required for the project) allows the private sector to accelerate the benefits to their shareholders by enabling them to pay out inflated dividends shortly after refinancing. The private sector companies may find themselves able to borrow more for a variety of reasons, for example; the market has matured; the project has been successful to date; there has been a general fall in market interest rates, the lengthening of the borrowing period. An increase in the project’s debt means an increase in termination liabilities for the public sector, and therefore the private sector requires permission from the public sector before it can proceed to increase its borrowings. The Treasury has advised that authorities must carefully consider the balance between the gains which they are to receive and the extra risk which they will accept if they agree to an increase of private sector debt during refinancing.

Source: Comptroller and Auditor General UK - 2006

On the other hand they warn against moral hazard problems which can be associated to the large benefits received by the private party. On this regards they point out: “There is a potential risk that, where, following a refinancing, investors receive large accumulated benefits from a PFI project they may become less concerned about whether the service performance is satisfactory in the remaining period of the contract.” This moral hazard issue is better mitigated at the contract design stage by including some provisions establishing the profit distribution among the parties in the case of a positive refinancing.

1.2.2 General framework for service performance monitoring

From an institutional point of view, the public partner should perform some specific tasks in the process of supervision during the construction and operation and maintenance stages of PPP projects. And following partnership Victoria, we can group the main tasks of PPP contract management under four major headings: performance, relationships, change, and contingency events.

Managing performance deals with ensuring that the service delivery terms of the PPP contract are being met. Supervision of the contract involves monitoring the private party’s performance but also ensuring that the government is fulfilling its own obligations in an efficient manner.

The monitoring of performance requires detailed information about the service and the market in which the service is provided. Moreover, analytical instruments should be available so as to permit a clear understanding of the firm’s operation and the “business” of the private partner.

Managing the relationship between the different stakeholders is one of the main elements of contract management. A clear identification of the key stakeholders, their respective roles and the relationship between them is an important step in an effective contract management process. One key element in this regard is to ensure regular and effective communication with all stakeholders (e.g. through regular meetings and progress reports).

117 Comptroller and Auditor General UK - 2006
Change will be required to the contract at some point in time due to the very long-term nature of PPP agreements and the number of variables that will change over time. According to Australia’s Department of Finance and Administration the main reasons for contract change are:

- major new developments in information and other technology;
- changes in government policy and priorities;
- oversights, omissions or errors by either agency or contractor;
- a contract deliverable is not achieved or does not meet stated performance or quality standards;
- excusable delay in accordance with the terms of the contract;
- contractor underestimates the scope or complexity of work under the contract; and
- major cost increases unable to be absorbed by the contractor.

An efficient contract management should ensure that it is possible to accommodate changes over the life of the contract. Establishing clear variation procedures allows change to be managed effectively and avoids the emergence of disputes.

Within this change management strategy, an institutional memory of the contract (knowledge management) is required from the beginning and should include all variations, updates and interpretations agreed between the parties in order to reach efficient decision making.

Finally, dealing with no contracted issues and contingency events is the fourth area in which contract management is needed during the operational stages of the PPP contract.

### 1.2.3 Monitoring private partner business performances

**Supervision of Operative Stages: Tasks and Instruments**

Partnership Victoria groups the tasks during the operative stages of a PPP project (construction and operation and maintenance) in four general topics (see Box 2).

**BOX 18 : Partnership Victoria - Contract Management Issues**

<table>
<thead>
<tr>
<th>Manage:</th>
<th>Construction</th>
<th>Operation and Maintenance</th>
</tr>
</thead>
</table>
| **Performance** | • Manage performance by government  
• Monitor construction progress and management quality  
• Consider detailed designs | • Manage performance by government  
• Monitor private party’s performance, management etc.  
• Seek user feedback |
<table>
<thead>
<tr>
<th>Relationships</th>
<th>Relationships</th>
<th>Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Continue and strengthen communications</td>
<td>● Maintain and strengthen communications</td>
<td>● Continue and strengthen communications</td>
</tr>
<tr>
<td>● Manage stakeholders</td>
<td>● Manage stakeholders</td>
<td>● Manage stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Ensure the right participants are involved in committees</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change</th>
<th>Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Manage transition from procurement to contract management</td>
<td>● Manage changes to output specifications</td>
<td>● Manage changes to output specifications</td>
</tr>
<tr>
<td>● Manage contractor claims</td>
<td>● Manage automatic contractual changes, such as indexation of payments</td>
<td>● Manage automatic contractual changes, such as indexation of payments</td>
</tr>
<tr>
<td>● Manage commissioning issues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contingency events</th>
<th>Contingency events</th>
<th>Contingency events</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Maintain contingency plans and review prior to commencement of service delivery</td>
<td>● Maintain and review contingency plans</td>
<td>● Maintain contingency plans and review prior to commencement of service delivery</td>
</tr>
<tr>
<td>● Respond to defaults and disasters</td>
<td>● Scan environment for potential impacts</td>
<td>● Respond to defaults and disasters</td>
</tr>
</tbody>
</table>

These four groups identified by Partnership Victoria – performance, relationships, changes and contingencies – summarize in a clear and concise way the phases of construction, operation and maintenance.

The monitoring of performance requires detailed information about the service and the market in which the service is provided. Moreover, analytical instruments should be available so as to permit a clear understanding of the firm’s operation and the “business” of the private partner.

Within this performance supervision, the handling of the transition between stages is a key aspect that needs to be accounted for. In some contracts, the termination of the construction stage and the beginning of the service provision raise some particular challenges that must be clearly acknowledged. Moreover, the transition to contract termination – at the end of the contract period or in case of early termination – will require special actions and mechanisms.

The Management of the relations between stakeholders involved in the process is another central aspect that is fundamental to the nature of the PPP. This requires participation mechanisms such as public hearings, consultation documents, and conflict resolution mechanisms between the government and the private partner or between other stakeholders. Among the latter, the mechanism of alternative solution of disputes is particularly suitable for PPP contracts.

Finally, the management of changes is another important aspect in the tasks to be developed in these stages. The long duration of the PPP contracts in infrastructure and the dynamic nature of services and markets where these are provided make necessary to have mechanisms that allow for the updating of the contract in order to assure that all partnership objectives are met in the most efficient way, maximizing the Value for Money of the contract.

Within this management of changes, an institutional memory of the contract (knowledge management) is required from the beginning and should include all variations, updates and interpretations agreed between the parties in order to reach efficient decision making.
1.2.4 Monitoring private partner cash flows and project financial health

Monitoring and supervision of the operation stage of the contract by the overseeing institution entails a reliable commitment to protect consumer interests, which in turn, implies the responsibility for safeguarding the achievement of the contract’s goals and objectives. However, it also implies protecting investor interests which, in this case, supposes to guarantee that they get the agreed-upon payment. Consequently, the regulatory challenge consists in maintaining the balance between the rights and obligations and the incentive scheme of the contract in the long run. In effect, there is a clear need to preserve the equilibrium between the parties so they all benefit from their mutual cooperation (see BOX 19).

**BOX 19 : Contract Management - UK**

It is important for all stakeholders to recognize that the contract itself should be at the heart of the process – it is the foundation upon which the relationship is built, and compliance with the contract is a fundamental measure of Best Value.

The central aims of the contract management activity are to ensure that:

- the local authority’s agreed contractual position is protected
- the agreed allocation of risk is maintained and that Best Value is achieved
- monitoring of the service provider’s performance against the output specification is undertaken to ensure that the financial implications of any failure to perform have been taken into consideration and appropriate action taken
- payment for the service is conditional upon the quality of performance of the service provider
- services are delivered in accordance with the contract
- continuous improvement in contract performance and service delivery is maintained.

Such equilibrium should be dynamic. Due to the special features of the infrastructure sector, contracts are incomplete and, therefore, ambiguities will usually arise and changes in the circumstances and disputes between the parties that will break the equilibrium. Then, new resolutions will result in new equilibriums. The quick restoration of the equilibrium depends, as mentioned in the previous section, on the degree of commitment of the regulators towards the regulatory process. It is essential that such commitment properly evidences transparency, participation and consistency principles.

This section focuses on the monitoring of the economic aspects of the contract equilibrium: costs and revenues. The costs involved are operation and maintenance (OPEX), and investment costs (CAPEX). In relation to the revenues, the analysis will be focused on the monitoring of the payment mechanism agreed-upon in the PPP contract.
The condition to meet in order to achieve economic sustainability of the service -at the same time that monopolistic rents are avoided- can be formally expressed as follows\textsuperscript{118}:

\[
K_i^0 = \sum_{n=1}^{N} \frac{IR - CO - I - T \pm Tr}{(1 + r)^n} + \frac{K_f^N}{(1 + r)^N}
\]

Where \(K_i\) represents the initial capital of the period; \(IR\), revenues; \(CO\), operating costs; \(I\), investments; \(T\), taxes; and \(Tr\), transfers from the Treasury (that may be positive \(-\) explicit subsidies \(-\) or negative \(-\) payment of concession fee \(-\)). These elements represent the free cash flow received by the firm. The opportunity cost of capital \(-\) \(r\) \(-\) is located in the denominator.

The second term represents payment received at the end of period \(N\). It is expressed separately in order to ease the analysis of the existence of different rules of termination payment (\(K_f\)) and/or duration of the concession (\(N\)), variables that may be used as instruments to restore equilibrium in distress situations. Therefore, sustainability of the firm calls for the firm’s future cash flow discounted using the opportunity cost of capital rate to be equal to the invested capital.

This sustainability equation is also known as economic equilibrium of contract since it summarizes all the economic elements involved in a contract. From the point of view of the service provider, contractual obligations are represented by the operating and maintenance costs (\(CO\)) and the investments (\(I\)) that the firm has to carry out in order to meet service needs. At the same time, the revenue (\(IR\)) that the firm will obtain for service provision represents contractual rights.

The cost of capital (\(r\)) is a value \(-\) to some extent exogenous \(-\) that represents the opportunity cost of capital. In other words, it is the return that the average investor would obtain in an alternative use with similar risk levels.

From this standpoint, preserving the equilibrium implies to balance the treatment of the rules that define or determine the costs and revenues involved at the operation stage of PPPs. On the one hand, it will be necessary to control that operators minimize the cost of producing the necessary service level, that is to say, that operators are cost-efficient. On the other hand, it is necessary to verify that the revenues or payments are large enough to cover the expected efficient levels of operating expenses, depreciation and the return of past and expected investment needs (all of which implies that the level of tariffs is dynamically efficient).

\textbf{Costs - OPEX}

The first element of efficiency is an efficient level of OPEX. One of the most powerful instruments to control cost levels are benchmarking techniques, and in particularly, the efficient frontier technique.

The efficient frontier will show the efficient level of costs, at a given output level (or the efficient level of output, at a given input level). This frontier can be built endogenously, through the observation of costs.

\textsuperscript{118} In terms of cash flow, this equation is the same as fixing revenue to cover operating and maintenance costs, depreciations and a return on the invested capital. To check this equivalence, see Green-Rodríguez Pardina 1997.
t and output levels of a group of comparable firms, or exogenously, from the design of a model company, usually built from engineering concepts.

The possible efficiency gains of a firm can be broken down into two factors: technological changes and catch-up. The effect of a technological change affects all firms and results from the introduction of technological improvements that move the output frontier. The catch-up component is the reduction of the distance separating a certain firm from the actual efficient frontier.

Depending on the sector, the stress will be placed in procuring that the operator’s performance gets closer to the efficient frontier (catch-up), as it is the case in the water and sanitation sector – where the technology for the provision of the service is, in general, stable- or that the operator adapts to the technological change, evidenced by the constant changes of the efficient frontier, as it is the case in the telecom sector.

The results of these techniques can be used in tariff reviews to calculate the efficiency factor X to be passed through to tariffs, so the user shares with the operator the efficiency gains that the latter achieves, or to encourage the improvement of the firms’ performance through the disclosure of the results, since in same cases, there is the possibility that these results influence the consumer’s decision when choosing a service provider, such as in the United Kingdom. In any case, the exercise consists in evaluating the present cost levels and encouraging the firms to reach efficient levels, whether through the imposition of new cost objectives or as a consequence of the competition generated by the publication of the results.

<table>
<thead>
<tr>
<th>Table 10: Benchmarking Regulatory Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Great Britain</td>
</tr>
<tr>
<td>The Netherlands</td>
</tr>
</tbody>
</table>

119 For a review of benchmarking techniques, we suggest checking the bibliography cited in this sense in the Annex of Annotated Bibliography.
<table>
<thead>
<tr>
<th>Country</th>
<th>Methodology</th>
<th>Input</th>
<th>Output</th>
<th>Revenue Methodology / Pricing</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>DEA: Total Controllable Cost</td>
<td>Capital (book value and replacement cost), goods/services, losses, work.</td>
<td># of customers, energy supplied, lines and wires length.</td>
<td>Revenue-cap</td>
<td>Benchmarking has been adopted as an explicit part of the process to determine the required revenue.</td>
</tr>
<tr>
<td>Finland</td>
<td>DEA</td>
<td>operational cost</td>
<td>number of customers, Energy supplied and customers' annual interruption time.</td>
<td>Expenditure-cap and Rate of Return</td>
<td>Benchmarking studies have been used to support rather than determine regulatory decisions. Benchmarking is used to estimate the reasonable rate of return. The rate of return is estimated on the basis of the costs of an average or efficient firm and not on the basis of a certain firm’s costs.</td>
</tr>
<tr>
<td>Sweden</td>
<td>DEA, Performance assessment model (engineering analysis)</td>
<td>operational cost</td>
<td>number of customers LV, number of customers MV, energy supplied LV, energy supplied MV and maximum power.</td>
<td>Special case of Yardstick competition</td>
<td>Benchmarking is used to estimate the reasonable rate of return. The rate of return is estimated on the basis of the costs of an average or efficient firm and not on the basis of a certain firm’s costs.</td>
</tr>
<tr>
<td>Australia-New South Wales</td>
<td>DEA, SFA, TFP</td>
<td>O&amp;M costs, transformation capacity, network length.</td>
<td>Power sold, # of customers, peak demand.</td>
<td>Revenue-cap until 2004, weighted average price cap from 2004</td>
<td>Benchmarking techniques have been used to examine the different aspects of the efficiency of electric power transmission companies. Benchmarking is only used as an additional instrument in regulatory decisions.</td>
</tr>
<tr>
<td>Chile</td>
<td>Theoretical model of an ideal company.</td>
<td>CAPEX, O&amp;M, losses, and costs related to customers (LV, MV and HV)</td>
<td>Transmission value added (VAD) of the efficient firm.</td>
<td>Special case of yardstick competition.</td>
<td>Tariff reviews to evaluate costs, goals, and set new tariffs.</td>
</tr>
<tr>
<td>Colombia</td>
<td>The efficient management, O&amp;M costs of electric power transmission are determine through the DEA methodology.</td>
<td></td>
<td></td>
<td>Price cap</td>
<td>Explicit use in the setting of tariffs to calculate X factor.</td>
</tr>
</tbody>
</table>
Furthermore, when setting the efficiency factor \( X \), benchmarking practices also reflect the consistency principle, since the decision on the goal of the costs to be reached is generally determined through the participation of the firms in the sector.\(^\text{120}\) The regulatory agency shall require each firm to improve its performance in accordance with its relative position in the analysis. Therefore, the regulator will be fair with those firms that have made big efforts to improve their performance and will demand a greater effort for the following period from those firms which have not made such efforts. However, the goals to be imposed on the latter by the regulatory agency should be plausible and achievable, so treatment towards them is also fair.

This is the instance where certain controversies usually arise, since it is very unlikely that the firm will accept, without discussion, the cost adjustment decided by the agency. Therefore, such procedures are usually carried out by means of consultation documents and/or public hearings, so as to create the opportunity for the firm to express its opinion, and to make decisions on the determination of future goals available to the public, thus promoting transparency and participation in the regulatory process.

Benchmarking is also useful in terms of the relationship with other stakeholders as it provides technical support to de regulators decisions reducing controversy and opposition to tariff adjustments. By comparing the relative performance of various firm the regulator can justify disallowing excessive costs to inefficient firms. But also it serves to support decisions of giving efficient firms which are doing above average in terms of service incentives in the form of more revenues.

**Costs - CAPEX**

The incentives to meet the established investment goals will vary depending on the selected form of PPP. Accordingly, so will monitoring.

In the event of one-time investments to be paid by the private sector, incentives will be aimed at securing economically-efficient investments. The party in charge of the investment will try to meet the investment requirements at the lower possible cost. Particularly, if that party gets involved in the operation stage later on, it will try to secure the best technology available with a view to obtaining the best results in the future.

If the investment is to be paid by the public sector, monitoring is then intended to have the investment to be economically efficient, while ensuring that it meets the agreed-upon requirements. In this regard, since the funds are not private-sector funds, the private sector can “let go” and squander the money, particularly where there is no subsequent involvement at the operation stage.

\(^\text{120}\) It can also be determined on the basis of the participation of firms from other countries or sectors. However, the use of comparable firms respects the consistency principle.
Where the selected PPP form requires investments to be made at the operation stage, if funding for that investment is to be provided by the operator, with the entire operation stage affected as well, and if payment is to be made by users (via the tariffs paid for the service), periodic evaluations will be performed in order to verify whether the goals defined in the contract are being met and whether it is appropriate to authorize new off-plan investments, in both cases to allow, or not, their compensation by users. If payment is made by the public sector out of treasury money, oversight is intended to achieve the same goal but with a view to protecting the State’s resources, which ultimately belong to the society as a whole rather than to just those using the service.

**Investment types**

Contracts calling for investments to be made throughout the entire operation stage usually provide for expansion, replacement and quality investments. Expansion investments are aimed at expanding the service; replacement investments are intended for the maintenance of existing assets in order to ensure service continuity and provision at the existing quality levels; and quality investments are new investments aimed at improving service quality. In the many contracts that provide for investment obligations, such investments are usually treated as not fulfilled only when the relevant coverage and/or quality goals have not been met.

<table>
<thead>
<tr>
<th>Investment type</th>
<th>Forecast</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Volume</td>
</tr>
<tr>
<td>Maintenance/rehabilitation</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Quality improvements</td>
<td>Mixed</td>
<td>Low</td>
</tr>
<tr>
<td>System expansion</td>
<td>Mixed</td>
<td>Low</td>
</tr>
</tbody>
</table>


In this case, there is a physical investment plan – which requires an estimate of the future investment requirements based on demand growth, the condition of existing physical assets, quality improvements, etc. – that defines goals by periods, and a financial plan that, in general terms, is only indicative and is used as a control instrument by the regulator. Thus, provided that the coverage and/or quality goals are reached, no penalty should be applied based on the failure to fulfill the investment obligations defined in the contracts.

Defining and penalizing non-compliance in physical terms creates incentives for efficient investments; if the values defined in the financial plan act as the allowed cap, the incentive will be greater where the operator can take for itself the difference gained by making efficient investments. On the contrary, defining and penalizing non-compliance in financial terms leads the operator to expend the amount set to reach the goal, with no certainty that this will be done efficiently through necessary and relevant investments.
Control of Investment Plans

It should be noted that the existence of investment plans does not entail the lack of regulatory follow-up or control of the conditions defined in that plan. Verifying the result (achievement of the goal) is not enough. When faced with the concrete need for certain investments, particularly those which, if delayed or not carried out, will have irreversible consequences or those that are too large and entail a very long construction term, the regulator will not only have to control the result at the end of the period set in the plan but it will also have to perform oversight throughout said period.

Without follow up, the regulated party, acting independently, might go for other investment goals, other investment levels, extend the deadlines or even choose not to make the investments at all. If control is only performed at the end, then there is no turning back if something is not done as planned.

The point is that, where goals are set, controlling the results is critical. In turn, if there is a possibility of irreversible results or where the investments involved are too large and require a much extended construction term, in addition to controlling the results, following up on what is done is also essential. Moreover, where the consequence of non-compliance, whether on account of a delayed investment, an unperformed investment, etc., is only financial in nature, the penalty should be set in a manner such that the operator will always choose to fulfill its obligations. In addition to introducing the right incentive, this will also alleviate the task of controlling the operator.

Furthermore, non-compliance is not necessarily related to the operator’s bad will. In many occasions, the reason behind the failure may be related to the lack of control and the impossibility to predict the various types of investments required in a plan. If the information on the initial condition of the assets is good, investments in replacement are more predictable and their timing is virtually entirely controlled by the operator. Conversely, expansion investments may depend on many factors that are independent of the operator’s will, which make them impossible to control. They are also less easy to predict. Factors such as technological change turn certain forecasts useless, or unexpected demand shocks turn certain investment forecasts and requirements insufficient or excessive.

Once such monitoring is completed, the problem will be the proper regulatory course of action when actual investments do not match the contractual obligations, i.e. the estimated requirements specifically defined in the investment plans (for instance, the regulatory agency should be less tolerant of non-performance of highly-predictable investments). Accordingly, a control mechanism must be created to analyze the causes for non-compliance prior to the application of penalties.

Inclusion of Investments in the Asset Base

The regulator’s oversight task will also cover the decision to incorporate new investments into the regulated capital base. In other words, it is necessary to decide on a mechanism to treat those investments that are to be remunerated, particularly the ones that had not been planned for. Basically, there are two major approaches to this issue. Both extreme approaches entail an ex-ante assessment, through which investment needs are defined before the actual investments are made, or an ex-post assessment that entails an after-the-fact analysis.
For instance, when updating the capital base from a tariff period to the next (“roll forward”)\textsuperscript{121} for the new period regulators may choose to use the investment values approved by the regulator for the ending period, as it is the case with the British regulator where an operator has overinvested (Ex-ante valuation), or take for the next period the value of investments actually performed, as done for instance by the British regulator where an operator spends less than allowed (Ex-post valuation). The Ex-post valuation could also allow the regulator to have the regulatory asset base include values entailing overinvestment, provided that the “used and useful” criterion is met. Put differently, the goal of the mechanism for the treatment of investments is to assess the relevance of certain investments to be factored into subsequent compensation or tariff adjustment calculations.

\begin{center}
BOX 20: The “used and useful” principle
\end{center}

\begin{quote}
“…it has long been held that investors are entitled to a return only upon that portion of their investment that is used and useful in the public service.

The “used and useful” principle presupposes that the actual dollars of investment have been expended. If the properties are in service during the test period, the company may be entitled to include related operating and maintenance expense in its cost of service; but if the capital costs have not been incurred, it is not entitled to a return on a payment not yet made. The accrual of an obligation to pay is insufficient to justify inclusion in rate base.

Under the phrase “used and useful”, the agency does not reach the question whether the capital was prudently invested, because even if it has been prudently invested but will not produce investments used and useful in the public service, the agency may exclude such properties from the rate base...

The “useful” aspect of the phrase also contains an element of whether ratepayers will benefit from the investment...

The used and useful principle rests on basic cost definitions and concepts of fairness. If property is not used and useful, the addition of those capital costs to the current costs represents a basic misalignment of service costs.”
\end{quote}


However, there are other middle-of-the-road approaches that combine both extremes, to a greater or a lesser extent; as explained by Alexander and Harris (2004), each of such approaches (Table 12) entails different costs and demand risks.

The Ex-ante ex-post approach entails defining investment needs at the beginning of the tariff period, and reviewing and assessing actual investments at the end of the period, when the capital base to be remunerated at the new review will be defined. Accordingly, at the end of the first tariff period, it is possible that certain investments that had not been initially provided for will be accounted for in the next period, in which case the risk of inclusion costs is borne by the

\textsuperscript{121} The term 'roll-forward’ refers to how the initial capital base, once determined, is adjusted over time to reflect changes in the value of productive capability of the existing asset base and new investment in the business.
consumers, or perhaps no such investment will be recognized, and the overinvestment costs will be borne by the operator.

The Interim determination approach allows the operator or regulator to reconsider investment decisions during the tariff period in the face of significant expenditures that had not been planned for. The risk of inclusion costs is also borne by the consumers and, as it will be true in all cases, the risk of overinvestment costs will be borne by the operator.

Under the efficient firm approach, the regulator defines cost and investment goals in direct relation to an efficient company at the beginning of each tariff period, irrespective of actual investments and costs in the preceding period. As a matter of fact, as it is also the case with the pure Ex-post approach, the operator will bear both types of costs risks, namely the inclusion costs risk (since, if accepted, the investments will have already been made) and the risk of overinvestment costs.

Lastly, some regulators have implemented trigger clauses for cases where the assets being constructed are accounted for in the capital base. The inclusion of these assets implies a prepayment by the consumers for a service they are not yet enjoying. Through this scheme, an operator that completes the investment and increases its revenue is rewarded; however, the operator is punished if revenue is reduced as a result of the operator’s failure to complete the investment on schedule. Under this scheme, the risk of inclusion costs will also be borne by the consumers, and the overinvestment risk will be borne by the operator.

<table>
<thead>
<tr>
<th>Approach</th>
<th>Costs Risks</th>
<th>Demand Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inclusion</td>
<td>Excess</td>
</tr>
<tr>
<td>Ex-ante ex-post</td>
<td>Consumer</td>
<td>Operator</td>
</tr>
<tr>
<td>Interim determination</td>
<td>Consumer</td>
<td>Operator</td>
</tr>
<tr>
<td>Ex-post</td>
<td>Operator</td>
<td>Operator</td>
</tr>
<tr>
<td>Model company</td>
<td>Operator</td>
<td>Operator</td>
</tr>
<tr>
<td>Trigger clause</td>
<td>Consumer</td>
<td>Operator</td>
</tr>
</tbody>
</table>


There are also demand-related risks. The first of such risks has to do with an overestimation of demand. Indeed, demand estimates may end up being higher than actual demand and, accordingly, lead to investments in excess of those actually needed. In general, such risk is shared by the consumers and the operator, except under the model-company approach as, because of this approach’s philosophy, such risk is fully borne by the operator.
The second demand risk has to do with asset obsolescence. When the capital base to be remunerated is periodically analyzed to verify that it is optimal, the operator risks having a portion of the assets excluded from the capital base. This risk is of fundamental importance in the telecom sector, where technology change moves at a fast pace.

Most certainly all such decisions by the regulator will be the cause of conflicts with the operators, as the latter will try to justify their defaults to avoid penalties while seeking to have all investments recognized. The way to avoid or at least reduce such conflicts is by properly defining the procedures, particularly those concerned with the treatment of new investments, and making the discussion a public, participatory one. The purpose is, on the one hand, to maintain consistency in the treatment accorded to the involved operators and, on the other, to guarantee the transparency of any such decision.

Lastly, the various forms of PPP involve different information needs to successfully carry out the oversight task. Some times, owing not only to the selected PPP form but also to the type of investment, the information asymmetry to be faced by the regulator will be greater than in other cases (this happens with large investments involving extended construction periods), which is why the regulator will be at a disadvantage and will not be able to make a proper decision at the time of the evaluation. In such cases, the regulator may resort to competition for the market, demanding that the operator contract such investments out by public bidding. In their eagerness to get the contract, the bidders will submit their best investment plans, reduce information asymmetry and guarantee to the regulator that the investment will be carried out in the most economically-efficient manner possible.

Revenue

Irrespective of the specific form of PPP, payment mechanisms should be output based and devised in a manner such that the right incentives are created to achieve the desired results. Private-sector revenue is dependent on such mechanisms, and their monitoring (throughout the life of the PPP) will lead to contract equilibrium.

Revenue monitoring will ultimately also involve an analysis of the rate at which the operator will be compensated, particularly, its level and structure; however, certain considerations must also be made in connection with service demand risks.

The tariff rate systems, i.e. the set of criteria, rules and procedures used to define the tariff rate level and structure, and the regulatory mechanisms that govern subsequent reviews are, in the specific case of monopolistic public utilities, aimed at satisfying the sustainability, allocative efficiency, productive efficiency and quality requirements.

Sustainability as a goal entails that tariff must be sufficient to cover the economic costs of service provision. This also allows them to serve as a signal to achieve efficient consumption levels and attract new capital resources to the industry, so as to guarantee the future provision of the service while minimizing potential fiscal contributions.

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Allocation efficiency is related, in a context of scarce resources and alternative uses for such resources, with tariffs reflecting the services’ production costs, *i.e.* having tariffs equal marginal costs.\(^{123}\)

Moreover, productive efficiency has to do with the minimization of costs at a given output level or, in the alternative, the maximization of output at a given level of supplies. For a long time now, both the regulatory literature and actual experience have demonstrated that the creation of incentives for companies to be productively efficient is one of the greatest challenges faced by regulators.\(^ {124}\)

Lastly, the tariff system must also provide for certain basic aspects of distributive efficiency or equity. This, in turn, is a two-fold aspect involving access and affordability. Access has to do with universal service goals: having the entire population have access. Affordability has to do with having tariffs relate to payment capacity, particularly for the poorer strata of the population.\(^ {125}\)

In addition to the substantive goals discussed above, tariff systems must also achieve certain formal goals in order to guarantee the best possible results for tariff regulations. Usually, such formal goals are: simplicity and public acceptance, no controversies, price stability, fair allocation of total costs, and no undue price discrimination.\(^ {126}\)

Insofar as the tariff regime is and is perceived as a simple, understandable and easily-applicable mechanism, its operation is not a constant cause for controversies, it brings stability to what users pay for the service they receive, it tends to fairly allocate the costs of service production and it does not unduly discriminate against certain customers, then it will not only be accepted by the public but also, and most importantly, it will help guarantee the sustainability of the scheme.

Payment to the operator may be a fixed lump sum, somehow distributed between the various service user categories. Payment may be effected directly to the operator or the government may act as a collecting agent or even pay the operator directly from treasury funds. In either case, the fixed-sum mechanism provides the operator with an incentive to bring down costs in order to take the efficiency gain for its own benefit. The risk lies with such cost reductions being made at the expense of service quality, which is the reason why certain minimum standards should be defined and monitored for compliance. Alternatively, the payment mechanism may be output based and carry some incentives system with it, in which case the operator’s revenue will be dependent on the operator’s performance.

Aligning service quality with customer rates in order to ensure that the output based payment mechanism works efficiently involves several steps. First it is necessary to evaluate objectives. More demanding quality standards may divert investment from other goals (expansion into non

\(^{123}\) In natural monopolies, this condition would breach the sustainability goal, as marginal costs are below average costs. See Sharkey (1982), The Theory of Natural Monopoly – Cambridge University Press.


\(^{125}\) See Estache Foster & Wodon for an analysis of the relationship between infrastructure reform and poverty in Latin America.

\(^{126}\) See Berg & Tshirhart (198?) for a discussion of these formal regulatory objectives.
served areas). Secondly, the appropriate quality standards desirable for each service have to be defined. An optimal level of quality requires that marginal benefit (to the customer) and marginal cost (to the utility company) are equal. It is important to consider that optimal quality is given by customer’s willingness to pay and not by absolute standards. Finally it is necessary to establish an explicit link between quality and tariffs.

This link may take many forms including increases in revenues for above average performance or fines (revenue reductions) for below average performance. A combination of both can also be implemented (see Figure below for an example of the electricity sector linking tariff with interruption duration\textsuperscript{127}).

\textbf{Figure 1 : Output based Quality Incentives - Electricity}

\begin{center}
\includegraphics[width=\textwidth]{figure1.png}
\end{center}

Whether payment is a fixed sum or a sum linked to operating performance, for payment to be released compliance with such standards and performance improvement needs to be verified.

However, it is also necessary to control that the agreed-upon sum allows service sustainability. Monitoring the payment level, which is nothing other than the public utility infrastructure tariff level, entails making sure that revenue is sufficiently high to cover the expected efficient levels for operating costs, depreciation and return on investment needs, the monitoring of which was discussed in the preceding section. Accordingly, if this is found to be the case, the contract remains in equilibrium. Put differently, revenue will only compensate for economically efficient expenses and investments that meet the contractual terms and conditions.

\textsuperscript{127} The quality measure used is the \textit{SAIDI}: System Average Interruption Duration Index. This index measures the time customers were without electricity in a given year. It is a measure of interruptions (in minutes) per customer. It includes planned and unplanned interruptions, but not momentary interruptions.
Clearly enough, at each tariff adjustment procedure the operators will demand higher rates. Therefore, to foster participation in, debate on and the transparency of decisions, tariff review processes usually take place through public hearings, so that the resulting tariffs are the result of some sort of agreement reached by all parties involved (the industry, users and the government).

Moreover, the specific tariff structure, meaning the manner in which the level of revenue to be collected is distributed among users, will not be a cause of serious concern for the operator, as the operator’s interest will be focused on the tariff level, *i.e.* that the total revenue collected is sufficient. However, the structure will be of concern for service users. The discussion will revolve around the assessment of how much residential, industrial, rural, large users, etc. will pay. In this case, in making such decision, the regulator will be faced with the trade-off between equity and efficiency, of the known regulatory objectives.\(^{128}\) Having users represented at the public hearing processes will not only contribute to user claims being taken into consideration but also to having users actually understand the reasons behind the adjustments.

Lastly, demand-related considerations have to do with the risk entailed by fluctuations in demand. This risk will be higher or lower, depending on the specific regulatory system selected. In revenue-cap systems, where the operator is guaranteed a revenue cap, demand risk is clearly eliminated. Indeed, revenue is independent of the demand level; however, as explained above, this type of system, which similar to a fixed lump sum payment, creates greater risk in connection with service quality unless linked to minimum quality requirements.

Also it has to be noted that a pure revenue cap creates no incentive for the company to increase sales and could give way to perverse incentives in terms of the use of the infrastructure.

Price Cap systems entail greater demand risks, as what is set under such systems is a tariff cap that will be sufficient to cover the expected efficient operating expenses, depreciation and return on investment levels only if demand levels materialize as forecasted. Therefore, monitoring demand estimates becomes critical under these systems to avoid problems and maintain contract equilibrium.

**Relationship Management**

Participation in the regulatory process by all stakeholders fosters commitment to and credibility in such process. In turn, notification by the regulatory agency is essential for participation and requires that all stakeholders are notified of regulatory decisions and, most importantly, of the reasons behind them. Such participation may be instrumented in various ways, through Notification, Consultation and Public Hearing Procedures.

Notification Procedures publicize the decisions of the regulator, stating the reasons behind those decisions; accordingly, they relate to the accountability principle, but also to those of communication and transparency. For instance, one way to render a decision to increase a service’s rate credible for consumers is largely dependent upon the regulator publicizing the outcome of the service’s technical and business monitoring procedure.

\(^{128}\) From an economic perspective, public services regulation seeks to secure four basic objectives: sustainability, allocative efficiency, productive efficiency, and equity. Estache and others (2002) contains a detailed discussion of regulatory objectives and instruments.
In general, particularly in the past few years, Notification Procedures have entailed the publication of decisions and their grounds, as well as any kind of information that the agency may desire to make public, on the agency’s web site. However, publication in official gazettes or some other official publications is also used, as well as reporting in the media.

Consultation Procedures consist in gathering relevant information for the decision-making process and obtaining feedback from the players involved in such decisions; accordingly, they foster the consultation principle and, critically, participation. Depending on the nature of the subject put up for consultation, the number of players involved, and the legal formal requirements, these procedures may be instrumented as follows:129

- Formal invitation to submit opinions and written observations.
- Individual meetings with interested parties.
- Meetings, seminars and workshops with groups of representatives and other interested parties.
- Publication of drafts containing the regulator’s preliminary version and the request for observations from the public prior to the passing of a final decision.
- Polls and surveys.
- Consultation with independent consultants.
- Discussion and consultation with professional regulators and regulatory institutions from other jurisdictions.

Public Hearing Procedures are informal mechanisms for public consultation; hearings are open to all parties interested in participating and they are characterized by the fact that they allow oral presentations of the decisions and their discussion. Mainly, they allow the presentation of proposals, their oral discussion and a contrasting of the proposals submitted by different interested parties.

Also, public hearings can better adapt to consultation on highly complex issues as, in such cases, the written consultation procedures may take too long. They also allow greater participation than other consultation mechanisms and are highly useful in contexts in which changes to the regulatory rules are at stake. For instance, the Peruvian telecom regulator, OSIPTEL, uses public hearings prior to adopting new regulations.

BOX 21: Public Hearing Procedure - OSIPTEL

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129 ICT Regulation Toolkit. Overview of the Public Consultation.
The discussion time lasts a maximum of two hours. Participants must register before entering the meeting, providing their company name or the institution that they are representing. The participants speak according to the order on the registration list. Each participant has a maximum of three minutes to speak. In the case of companies or associations, only one representative (the first registered participant) is allowed to speak, unless the moderator permits additional representatives to do so and sufficient time is available. The number of rounds or times that participants are allowed to speak depends on the number of participants who have registered. Comments or objections must address the specific subject of discussion. The moderator has the right to preserve the orderly development of the discussion, and may interrupt a participant if the commentary is not related to the topic of discussion or the participant’s time has passed. The public hearing is filmed and transcribed. The public hearing concludes once all registered participants have spoken or the scheduled time has expired.

Source: ITU Global Regulators Exchange Database, response by Carlos Gomez, G-REX advisor, on 29 November 2004 to the subject “Procedure for conducting open house discussion,” posted on 15 September 2004 by the Telecom Regulatory Authority of India.

Prior to holding a public hearing, the regulator needs to provide the general public with the relevant details, by publicizing the hearing on the agency’s website or through the media (on the radio, a newspaper or TV).

The decision on the type of consultation procedure will depend on the issues involved. However, when necessary, public consultation may be instrumented through a combination of all of the procedures mentioned above.

Usually the consultation process has three stages that may include formal or informal procedures, depending on the nature of the relevant topics set for discussion. At the first stage, the point is to identify and publicly present the subject for consultation. Accordingly, the regulator will issue a formal consultation document requesting the opinion of the interested public. The second stage involves an open period for the submission of opinions and observations by the public. The regulator’s goal is to gather as much information as possible that is relevant for a better decision-making process.

Besides receiving opinions and written observations, the regulator may use this second stage to set up informal consultation procedures aimed at gathering additional information or obtaining clarification on information received. At the last stage, the regulator makes a decision based on the information received.

The public consultation document should contain, at least, the following information: (a) purpose of the consultation and description of relevant aspects covered; (b) time period for the consultation process; (c) name, information and contact address for the submission of opinions and observations; (d) references of the authority carrying out the consultation; (e) information on the next steps of the regulator and how and where to obtain related information.

In order to carry out an efficient consultation process, the regulator should have that same consultation document include a schedule for the submission of opinions. The time period for the consultation process will be defined based on the complexity and urgency of the decision at stake.
However, such considerations must also be balanced against the time required by the public to prepare their comments and opinions. In fact, if, on the one hand, the open consultation period is too short, the public will not have sufficient time to prepare their observations and comments. On the other hand, if the open consultation period is excessively long, a definition on the subject is delayed, and the original issues that gave rise to it may change.

At this stage, the regulator is required to publish all observations in order to maintain transparency over the consultation process. There must be public access to such documents, whether through the regulator’s website or at the actual offices of the agency. The interested public may thus make sure that the regulator has actually received their opinion or comment, while checking those sent in by other interested parties.

At this stage, the regulator also has flexibility to use other informal means to gather additional information or to obtain clarification on information it has already received. Indeed, regulators often organize seminars, workshops, visits to representative groups and interested parties, Internet forums, polls, surveys and even public hearing processes.

Once the open consultation period is over, the regulator is required to publish its final decision. It is important that the time elapsed between the end of such period and the moment of publication be reasonable, so as to ensure the process’ credibility and effectiveness. In fact, process transparency is largely dependent on the regulator’s publishing the document containing the reasons for its decision, as well as a full summary of the information exchanged with the interested parties.

**BOX 22 : OFWAT’s public consultation process**

<table>
<thead>
<tr>
<th>The consultation process</th>
<th>Timetable for consultations</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ OFWAT will issue a press release or similar announcement about every consultation. The website has a link to UKonline (<a href="http://www.ukonline.gov.uk">www.ukonline.gov.uk</a>) which is the central, web-based entry point to government information. This holds a central register of current public written consultations. If someone registers with UKonline, they will send her an e-mail when a consultation starts on a particular subject (such as gas, electricity and water companies).</td>
<td>▪ The Government’s code of practice recommends that national public consultations should last at least 12 weeks. In the past, OFWAT has usually allowed up to eight weeks for consultations.</td>
</tr>
<tr>
<td>▪ Paper copies of documents will always be available. Each consultation paper will contain a list of people OFWAT has told about the consultation.</td>
<td>▪ OFWAT will consider extending deadlines for complicated issues.</td>
</tr>
<tr>
<td>▪ OFWAT will also consider other 6 methods to effectively reach interested people. For example: contributing articles to relevant journals, and holding meetings, workshops or seminars with organizations or individuals - to explain the issues, and to properly understand their points of view.</td>
<td>▪ Many of OFWAT consultations are in response to events with timetables set by other organizations, for example, mergers where the timetable is set by the Office of Fair Trading. Other consultations are in connection with matters where the water companies’ license sets out the timetable. And many of OFWAT consultations do not cover the whole of England and Wales.</td>
</tr>
<tr>
<td>▪ OFWAT put all responses to consultations in its library unless they are marked confidential.</td>
<td>▪ OFWAT will publish its final decisions, including its reasons for them.</td>
</tr>
</tbody>
</table>
Consultation documents will include:
- A summary written in plain English, highlighting the main issues.
- A description of the purpose and aims of the consultation.
- The issues on which OFWAT is asking for people’s views in the form of clear questions, wherever possible.
- Areas of an issue on which OFWAT has already made decisions.
- Details of any advice OFWAT has received.
- Where appropriate and practical, the possible costs or benefits, details of who is likely to be affected and how.
- Where appropriate and practical, an assessment of how an issue could affect the environment.
- The deadline for responses.
- The timetable for decision-making and the introduction of new policies.
- Details of who to contact for more information.
- Details of who will deal with complaints or comments about the consultation process.
- OFWAT will ask respondents to give it their names or details of who they represent. This will help OFWAT to get a balanced view of responses.
- OFWAT will also ask for an electronic copy of each response. OFWAT will put these on our website.
- Details of which parts of England and Wales the document relates to, and whether it contains proposals which are the responsibility of more than one organization.
- Who the consultation is particularly aimed at and a list of people OFWAT has told about the consultation.
- A glossary of terms.

This will usually include the following.
- A summary of all the responses received to each issue.
- OFWAT decisions and explanations for these.
- Where appropriate, details of how the issues discussed will affect particular groups such as the water companies, or particular groups of customers (small households, large families and so on).
- The timetable for introducing any changes arising from the consultation.
- Details of who to contact for more information.
- A list of people who responded to the consultation.

Source: OFWAT, Having Your Say: OFWAT’s code of practice on consultations, January 2002

1.2.5 Risk monitoring (government borne and transferred risk)

In order to properly manage the follow-up and supervision of the construction and operation stages, the agency in charge – be it a regulator or any other institutional arrangement - has to be organized and act in accordance with the criteria referred to as “best practice regulation”. The Australia’s Utility Regulators Forum (1999) defines best practice regulation in terms of principles, processes and organization:

- **“Best practice principles.” A set of principles to guide the behavior of regulators.**
- **Best practice processes.** Processes provide a structured approach for regulators to develop best practice regulation.
**Best practice organization.** *For best practice to be achieved, the regulatory organization needs to possess certain structural characteristics.*

The good regulatory performance in the supervision of infrastructure PPP contracts generates externalities over other contracts and sectors by building a reputation about the regulator’s governance that may affect the perception that investors have about the risk. In this sense, Berg (1999) states that “*principles and processes matter because potential investors are looking for signs of regulatory independence and signals that policies are based on a comprehensive analytical framework rather than on the whims of individuals.*”

This effect on the investors’ perception is of greater importance in developing countries. A first reason is because these countries need larger investments. Second, many of these countries are characterized by some degree of institutional weakness, where the judicial system is not considered a fair and efficient way of settling disputes.

Consequently, the supervision of the regulator’s performance should also be an important part of the supervision of PPP projects (Amos, 2004). In effect, some mechanisms will be necessary to secure that the regulatory system is working in accordance with the criteria set forth by best practices. Therefore, periodic and public evaluations of the government and the regulatory agency’s acts, entrusted to independent experts, could be a suitable option to guarantee the adequate performance of these institutions.

**Examining the Regulatory Performance**

In order to supplement oversight at the O&M stage, it is also reasonable to oversee regulatory performance so as to verify that the regulator complies with the best practice principles of good governance and that the regulatory process and the organization actually reflect those principles.

In this regard, Eberhard (2005) states that “*the requirement of pre-scheduled, periodic, independent reviews of regulatory performance and impact*” are “*ex-post evaluations and should include recommendations that are made public and are used to guide remedial action. The reviews should cover regulatory governance and regulatory substance [such as tariff-setting or service standards], as well as the impact of the regulator’s actions and decisions on sector outcomes.*”

The reviews that regulators are required to undergo can be performed by national or international expert panels made up of experts who are independent of any economic or political interest in the sector. Table 13 illustrates the aspects that are generally taken into consideration by said institutions to assess regulatory performance relative to what we have defined as Best Practice Regulation:

**Table 14 : Regulatory Performance**

<table>
<thead>
<tr>
<th>Regulatory agency functions</th>
<th>Were the regulatory objectives met?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>How were opposing goals balanced?</td>
</tr>
<tr>
<td></td>
<td>How did the agency use the power assigned to it?</td>
</tr>
<tr>
<td></td>
<td>How did it respond to changes in surrounding conditions and environment?</td>
</tr>
<tr>
<td></td>
<td>Did it fulfill its duties and meet its priorities?</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td><strong>Regulatory agency resources</strong></td>
<td>Did it fulfill its duties and meet its priorities?</td>
</tr>
<tr>
<td>Budgetary execution. Were there any resource savings? What were the funds used for?</td>
<td></td>
</tr>
<tr>
<td>Does the staff have the required skills to carry out the regulatory activities?</td>
<td></td>
</tr>
<tr>
<td>Is the staff up to date and in contact with the latest economic regulation practices?</td>
<td></td>
</tr>
<tr>
<td>Are there any training activities for the regulatory agency’s staff?</td>
<td></td>
</tr>
<tr>
<td><strong>Information system</strong></td>
<td>What are the system and the storage format like for the information received by the agency?</td>
</tr>
<tr>
<td>Does it allow the implementation of adequate monitoring of the regulated agents?</td>
<td></td>
</tr>
<tr>
<td>Is information stored homogeneously?</td>
<td></td>
</tr>
<tr>
<td>Does it allow the application of benchmarking techniques?</td>
<td></td>
</tr>
<tr>
<td>Does it allow instant access to the information?</td>
<td></td>
</tr>
<tr>
<td>Is the information updated? What is the update frequency?</td>
<td></td>
</tr>
<tr>
<td>Are there any penalties applicable to the regulated utility company for a failure to timely provide the required information?</td>
<td></td>
</tr>
<tr>
<td>How many times were penalties applied?</td>
<td></td>
</tr>
<tr>
<td>Has the penalty application rate gone down?</td>
<td></td>
</tr>
<tr>
<td><strong>Accountability action</strong></td>
<td>Has the agency submitted the reports and annual reports it is mandatorily required to submit to the controlling agencies?</td>
</tr>
<tr>
<td>Number of reports on sectoral situation and regulated companies’ performance produced by the regulator.</td>
<td></td>
</tr>
<tr>
<td>Publication frequency.</td>
<td></td>
</tr>
<tr>
<td>Availability and easy access to publications.</td>
<td></td>
</tr>
<tr>
<td>Number of approved resolutions and supporting reports.</td>
<td></td>
</tr>
<tr>
<td>Number of appeals filed and reasons therefore.</td>
<td></td>
</tr>
<tr>
<td><strong>Participatory action</strong></td>
<td>Number of consultation documents published and/or sent to the stakeholders.</td>
</tr>
<tr>
<td>Number of public hearings held.</td>
<td></td>
</tr>
<tr>
<td>Number of publicity events held.</td>
<td></td>
</tr>
<tr>
<td><strong>Regulatory action</strong></td>
<td>Number and type of actions performed by the agency to promote</td>
</tr>
</tbody>
</table>
competition. Results of action taken.
Action taken on reports of anti-competition practices.
Assessment of oversight and controlling actions taken by the regulator on the regulated agents.
Assessment of enforcement mechanisms applied by the regulatory agency to persuade the regulated agents to comply with their obligations.
Is the price-setting process fair and transparent such that it guarantees a service price in line with service quality and the regulatory objectives?
Does the market structure present features of a natural monopoly such that the presence of a price-setting authority is warranted?
Number of claims submitted, handled and settled by the regulatory agency.
Number of disputes between the parties submitted and settled by the regulatory agency.
Existence of procedures defining the steps to be taken for lodging claims and complaints.

Even if the regulatory agency meets all these requirements concerning the principles, processes and organization, if sector performance does not meet the goals – as defined in the PPP contract – then the agency will not meet the Best Practice Regulation objectives either.

As noted by Sanford Berg (1999), “a key indicator of regulatory performance is sector performance. The number of studies, cases decided, and rules promulgated are regulatory inputs. However, the fundamental regulatory output is industry performance.”

Accordingly, these analyses (monitoring of private sector and regulatory agenda) should not be seen as independent tools at the time of overseeing the development of a PPP contract; rather, they clearly supplement each other.

1.2.6 Relationship monitoring

1.2.7 Monitoring and reporting contract expiry

1.3 Monitoring the relationship with other stakeholders
The way in which the tasks discussed in the previous section are performed can be organized under different institutional arrangements. One important factor here is the double role which has to be played by the government: as part of the contract and as responsible for the public good. And in this context, the government has to include other stakeholders in the management of the PPP contract.

As “partner” of the PPP the government is required to be part of a “sustained collaborative effort”\textsuperscript{130} with the private partner. At the same time as representative of the public interest the government has to ensure that the contract is fulfilled by the private party and that the interest of consumers and all other stakeholders are protected.

Usually, PPP projects in infrastructure sectors involve a large number of stakeholders (see Table 15). Different groups of stakeholders may have fundamentally different views on PPPs, and different priorities and expectation. In this regard the public sector has a key role in ensuring an adequate balance of interests among all the stakeholders.

<table>
<thead>
<tr>
<th>Actors</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political</td>
<td>Incumbents vs. Opposition</td>
</tr>
<tr>
<td></td>
<td>Internationalists vs. Nationalists / Isolationists</td>
</tr>
<tr>
<td></td>
<td>Global vs. central vs. regional vs. local</td>
</tr>
<tr>
<td>Economic</td>
<td>Investor vs. unions / worker vs. community rights</td>
</tr>
<tr>
<td></td>
<td>Partners vs. competitors (particularly local)</td>
</tr>
<tr>
<td></td>
<td>Potential vs. current winners in in value chain</td>
</tr>
<tr>
<td>Social</td>
<td>Consumer advocacy including health/safety issues</td>
</tr>
<tr>
<td></td>
<td>Environmental groups</td>
</tr>
<tr>
<td></td>
<td>Traditionalists (including some ethnic &amp; religious groups)</td>
</tr>
</tbody>
</table>

Source: Witold J. Henisz - Dynamic Influence Mapping of PPP Stakeholders

An important step in an effective contract management process is clear identification of the key stakeholders to the Project Contract, their respective roles and the relationship between them. In a monopolistic context, as is the case in most infrastructure sectors, the relationship between the service provider and the final user is a central problem for the government. Protecting users from abuse by the monopolists becomes a central task which can collide with the functions of the government as “partner” in the PPP.

An attempt to solve this dichotomy was entrusting the regulatory functions of protecting users from monopoly abuse to an independent agency. The creation of an independent regulator was the most common choice during the 90s.

In effect, one of the key issues of the reform of infrastructure sectors in Latin America, which took place in the 90’s and stemmed from the experience in the United Kingdom, was to unbundle the functions of tariff setting, regulation and service provision -all of them previously concentrated in the public sector-, and entrust the regulation to an independent organization with a clear mandate so as to try to protect long term objectives (greater coverage, better services, higher efficiency) from short term pressures faced by the government (lower tariffs to avoid inflation, overstuffed in state-owned companies). Since then, it is usually the regulator’s job to

\textsuperscript{130}See PPP definition in section II.a
preserve the interests of the parties involved and to supervise the compliance with the obligations under the PPP contract.

In practice there is a continuum of institutional arrangements ranging from supervision by the sectoral ministry to the creation of an independent autonomous regulator. Intermediate alternatives such as contract specific institutions, competition authorities, etc are also possible.

However, the specific institutional setting will depend on many factors that need to be taken into account when deciding on the most efficient way to supervise a PPP contract. The magnitude of the project, the size of the respective country or jurisdiction, the technical characteristics of the sector, the expertise on previous agreements, the technical and institutional skills, the country’s legal tradition \(^{131}\), etc. are all factors that must be carefully reviewed.

In spite of the existence of different institutional possibilities available for the oversight of PPP contracts during their operational stage, in general terms, it can be said that the creation of a regulatory agency has been, during the 90s, the most usual practice in most of the countries and sectors.

However, this institutional solution, in many cases, has not been sufficient to fulfill the goals of sector reforms and the introduction of PPPs in infrastructure sectors. For that reason, the new trends in PPPs design, particularly in developed countries, have focused mainly in the parties’ cooperation as a key factor for a successful private participation.

In this regard, Schwartz and others claim that: “The term "Public-Private Partnership" captures the history of these relations while suggesting a new recognition that the relationship between the two main parties has to be more than just contractual and that all primary risks--investment, commercial operations, social and environmental impacts, currency mismatches, force majeure, consumer and public relations--cannot be placed solely on the shoulders of one party or another when the provision of sensitive and naturally monopolistic basic services is in question. Public-Private Partnerships (PPPs) can thus be seen as an evolution of the existing models that leverage the private sector in the delivery of public services.”

This new approach focuses more on the “partnership” between the private and public sectors, thus highlighting the need to develop joint decision making mechanisms in contracts to ensure that the proposed objectives are accomplished.

As partner to the project the government has also a function in ensuring that the legitimate interest of all stakeholders are taken into account while at the same time ensuring that efficient solutions are implement. This involves making sure that the individual interests of the stakeholders do not block solutions which are in the public interest.

According to Schwartz, and others, “This comes from the hard-learned fact that governments cannot simply abandon public services to private operators, leaving them to deal with anxious consumers, and to implement overly ambitious investment plans based upon the original

\(^{131}\) Many of these elements represent what Levy & Spiller denominate the “institutional endowment”, which from these authors’ point of view, plays a key role in the performance of the agencies responsible for the regulation of infrastructure sectors.
expectations of bidding documents and static contracts, or the review capacity of unpredictable regulatory institutions. All too often, these arrangements led to renegotiation and unplanned public transfers to maintain service continuity. And at their worst, these unrealistic expectations resulted in cynical gaming by opportunistic bidders; additions of non-economic investment burdens by recalcitrant governments; canceled or nationalized projects; and a public wariness toward any private involvement in the provision of public services”.

1.3.1 Monitoring and reporting on social and environmental issues

1.3.2 Monitoring and reporting on Public access, consumer protection community consultation

As explained early in this document, at the Construction and Operation and Maintenance stage of PPP contracts, a reference to oversight agencies is a reference, for the most part, to economic regulation agencies. However, Best Practice Regulation in the implementation of PPPs means flowing interaction with other oversight agencies, such as the PPP units, Ministries, community organizations and civil society. Interaction fosters consultation, participation and accountability.

As far as consumers are concerned, when properly informed, the active involvement of such groups may prove to be very useful to the regulator. For instance, such groups can assist the regulator in the oversight and service quality functions. They can also provide support to the regulator’s decisions where such decisions entail rejecting prices that reflect potential inefficiencies. On the other hand, the involvement of consumer groups helps avoid regulatory capture.132

In this regard, it is useful to look at the United Kingdom’s consumer-representation experience. Consumer representation agreements and all related aspects were defined at the time of the privatization.

BOX 23 : Consumer Representation in the United Kingdom

Statutory consumer bodies – such as Energywatch and Postwatch – were established to represent consumer interests in those sectors. As a result of the Water Act (2003), a similar body is being set up in the water industry. Although formal separation of Ofwat and WaterVoice was in 2005, WaterVoice has operated largely independently from Ofwat, the industry regulator, since 2000.

Different statutory arrangements apply in other regulated markets. The Financial Services and Markets Act 2000 and the Communications Act 2003 set up the Financial Services Consumer Panel and the OFCOM Consumer Panel respectively. These panels are different in nature to the statutory bodies established in postal and energy markets. They do not handle customer complaints, which are addressed through Ombudsman or Alternative Dispute

Resolution schemes. They also are more closely connected to the regulator, and play an advisory role. However, in practice, both Financial Service Authority and OFCOM have encouraged their consumer panels to operate with a high degree of autonomy, and their independence enjoys considerable protection.

Consumer representation in regulated markets now has a higher profile and is better resourced than in 1998. Although each of the consumer bodies differs in its approach and practice, they each have an important role in delivering the Government’s objectives for consumer policy and regulation. Alongside this, most consumer bodies engage with companies and handle consumer complaints. All, to varying degrees, undertake research to further their understanding of consumer needs and behavior in their respective markets.


As regards the Ministries, Australia’s Utility Regulators Forum states that, in general, “regulatory model supports the separation of the role of the policy/regulation maker and policy/regulation implementer. For example, the Australian Competition and Consumer Commission implements regulations that have been established elsewhere in the Government. In the UK water industry, there is a separation between the standard setters, the quality regulators and the economic regulators (pricing)/customer champions (customer service).” Accordingly, interaction between all agencies is the rule. For instance, to set the infrastructure requirements, regulators usually submit potential projects for each sector to the ministries for approval.

As regards the PPP Units, as mentioned early in this presentation, the main interaction is found at the initial stage of PPP projects. For instance, the PPP units collaborate in the invitation to bid, contract design and definition of minimum requirements for approval. In certain cases, they also get involved in contract monitoring, as is the case with the PPP Centrum in the Czech Republic. However, as it is clearly defined in the agency’s own rules: “Its role is mainly advisory. It will never dispose of such an amount of capacities and competence to have an executive role such as procuring authority.”

**BOX 24 : PPP Centrum in the Czech Republic**

A. Before advisers participation stage
   - Projects identification and inception
   - Preliminary documentation drafting including feasibility and financial analyses
   - Selecting and managing advisors to ensure that public sector represents an equivalent partner to private sector.

B. During a preparation stage:
   - Project management
   - Bid evaluation
   - Tender strategy preparation
   - BAFO selection

C. During post-completion stage:
   - Project monitoring and evaluation

At the public sector side PPP Centrum will act as a knowledge centrum for
procuring authorities support. Its role is mainly advisory. It will never dispose of such an amount of capacities and competence to have an executive role such as procuring authority.


1.4 Ordinary contract administration

1.4.1 Payment to the private partner and payment report

1.4.2 Managing the relationship with the private partner and affected stakeholders

In the context of the regulatory process for infrastructure services, conflicts between the parties involved are a common occurrence. Usually, these involve disputes between the regulatory agencies or authorities and the companies in connection with: tariff reviews, compensation, fines, contract breaches or returns on investments. Conflicts often also involve disputes between two companies or between the companies and their clients.

The procedures for the resolution of these conflicts involve hearing the affected parties, reviewing the evidence presented by them and submitting the conflict situation to assessment by experts who will act as prescribed by law, consistently and without bias for either party. Dispute resolution often begins at the regulatory stage. However, disputes can be resolved by either party’s submission to international arbitration, mediations, special tribunals and expert panels.

Arbitration is a form of resolution for private disputes which, even though conceived and governed by the contract in place between the parties, must observe the legal framework defined by the national laws and, in some cases, international treaties.

In particular, international arbitration proceedings are the preferred option, and they are provided for in the concession agreements executed by developing countries, as they provide the concessionaires with a guarantee of expertise and impartiality as far as the arbitrator is concerned, two characteristics that are not always present in legal proceedings carried out within the national court systems.

Another institutional dispute resolution option consists in appointing a specialized, independent third party to act as an *ad hoc* arbitrator. This arbitrator can be a person, a panel or a commission of specialists usually referred to as an expert panel.

Expert panels can be useful in countries with recently-created regulatory agencies; the panel will act as a board of appeals for decisions made by the regulator. They can also prove useful where the ordinary justice system has no judges with specialized knowledge, where the system lacks independence or where the legal procedures available are inefficient or extend over too long a period of time. In such contexts, expert panels will generate the most trust in private investors.
Chile has vast experience in the use of expert panels for the resolution of regulatory disputes in the infrastructure sector. Such mechanisms were defined in the regulatory systems created over the past three decades to foster private participation in several regulated industries, including the energy, telecom and water and sanitation sectors.

Expert panels operating in these sectors share some common features. Their functions are broadly defined by law and include disputes between regulators and private companies. These panels coexist with other bodies that also serve as boards of appeal, including Chile’s General Comptroller’s Office.

Based on the Chilean experience, Jadresic A. (2007) classifies expert panels based on four variables: 1) the kind of regulatory conflicts they deal with; 2) the composition of the panel; 3) the kind of decisions they make; 4) their operational rules. These variables are usually defined in the law, the concession contract or the agreement between the parties that created the panel.

**BOX 25 : Characteristics of Experts Panels**

<table>
<thead>
<tr>
<th>Kind of Regulatory Conflicts</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regarding tariff reviews, conflicts may be about the tariff level itself or about specific procedures or assumptions required for calculating tariffs. Non tariff conflicts may be about the award of concessions or permits, the imposition of fines or other sanctions by the regulator, or the dictation of non tariff regulations, such as quality standards or investment obligations.</td>
<td></td>
</tr>
<tr>
<td>Disputes between two or more regulated companies. For instance, in the power sector, conflicts may involve electricity transfer payments among generation companies in the pool or transmission fees charged by the transmission company.</td>
<td></td>
</tr>
<tr>
<td>Regulatory conflicts may be about a wide variety of issues, such as financial compensation for additional works not included in the contract, delays in providing access to expropriated land, review of user charges, sanctions imposed for unfilled obligations, or the financial implications of events not anticipated in the law or the contract.</td>
<td></td>
</tr>
</tbody>
</table>
### Composition and Scope of the Panel

There may be a single arbitrator or several people, ideally an odd number to make it easier to achieve a majority vote in case of disagreement and to choose a chairperson or coordinator of the panel.

Some or all of the members may be required to have specific qualifications, such as a university or professional degree in engineering, economics, or law.

Some or all of the members may be chosen by the parties involved in the regulatory dispute, by a third independent party, or according to some explicit and objective criteria.

The panel may last just for the time needed to solve a specific dispute, have a finite lifetime, or have an undetermined time horizon, although periodic rotation of members could be considered.

The panel’s role may be to resolve a specific dispute involving two or more parties, or to deal with several regulatory disputes, either for specific parties or contracts or for a whole infrastructure sector.

No specific constraints may be imposed or ineligibilities established regarding present affiliation or past experience of the panel members. This condition exists in order to promote the panel’s independence and expertise.

### Kind of Decisions

The panel may be constrained to make recommendations or proposals to the regulator or to the parties that are entitled to make the final decisions.

Alternatively, the panel may be required to adopt the final decisions, although an appeals mechanism could eventually be allowed for specific matters (for example, if a due process was not followed) or to clarify aspects of the decisions that remain vague.

The panel may be allowed to make any decision regarding the dispute, be constrained to choose among the alternatives proposed by the parties, or be required to refer strictly to issues raised by the parties or indicated in the law or the contract.

### Rules and Procedures

The operation of the panel of experts is normally subject to regulations that promote the equal rights of the parties, the transparency of processes, and the promptness of decisions. Such regulations typically address the following aspects:

- the way the conflict can be presented by the parties and the possible outcomes that they can propose,
- the way the parties in the conflict and other interested agents can participate in the process,
- the deadline the panel must meet when arriving at a decision and the intermediate steps that must be taken,
- the need to justify the decisions made by the panel, and
- the mechanism used to finance the costs of the panel, which can rely on contributions from the parties, the regulated companies, or the state budget.


Expert panels have been an effective mechanism for the resolution of regulatory conflicts in Chile’s infrastructure sector, mainly in connection with issues such as tariff reviews, payments
for energy transfers and the interpretation of concession contracts. Jadresic A. (2007) presents some conclusions that might inspire regulatory improvements in other developing countries.  

### Appeal Procedures

In general, the regulatory process involves three critical moments: the first stage, of public consultation, where the interested parties are given the chance to provide their opinion and views regarding some regulatory issue, a second stage at which the decision is made and publicized along with the detailed reasons behind it, and the last moment at which the stakeholders are provided an opportunity to challenge a regulatory decision through a process of appeal.

Appeal processes start by adequately hearing the party challenging a regulatory decision. Then, based on the evidence presented by that party and the contents of the law regulating the issue and relied upon by the regulator, a decision is reached for or against the appellant.

Having procedures for appeal is critical in order that the decisions made by a regulatory agency may be adequately challenged. It is indeed the manner in which the agency is held accountable to those who disagree on its decisions and thus make the claim. The appeal can be started before the regulator itself prior to resorting to the courts.

Moreover, it is important to guarantee that, during such appeal process, the regulator abides by its mandate and the applicable rules, and that it observes the general transparency criteria.

Two aspects must be factored into the definition of a procedure for the filing and resolution of appeals: the appellate body and the reasons for the appeal.

The appellate body must be independent. In most countries, appeals against regulatory decisions are filed directly in court. However, in some cases there are intermediate stages, and the appeal is filed with organs with greater experience in and technical knowledge of the issue at dispute than judicial courts. In turn, such intermediate body is expected to respond in a shorter period of time.

The grounds for the appeal are usually limited to factual or legal errors. Appellate bodies are allowed to reconsider the merits of the appealed decision, merely substituting it with their own view.

<table>
<thead>
<tr>
<th>COUNTRY – SECTOR</th>
<th>APPELLATE INSTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil Electricity sector</td>
<td>Appeals are made in the first instance to the agency itself; if it does not result in a satisfactory solution, the judiciary is resorted to.</td>
</tr>
</tbody>
</table>

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133 Also Chris Shugart and Tony Balance, “Expert Panels: Regulating Water Companies In Developing Countries” Draft: June 22, 2005, includes an analysis of how expert panels can provide solutions to problems related to long-term contracts.

<table>
<thead>
<tr>
<th>Country</th>
<th>Sector(s)</th>
<th>Administrative Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colombia</strong></td>
<td>Telecommunications, Water and Energy</td>
<td>- The Commission’s decisions are not subject to review by any administrative authority; only specific-scope decisions are subject to appeal before the Commission itself <em>(recurso de reposición)</em>.&lt;br&gt;- Specific-scope decisions of the Commission can only be challenged by way of a <em>Recurso de Reposición</em> appeal, to be filed and settled as provided for in the Contentious-Administrative Code and related provisions.</td>
</tr>
<tr>
<td><strong>Chile</strong></td>
<td>Energy, Water and Sanitation</td>
<td>Any person or entity claiming to be negatively affected by a resolution or omission by the Superintendent’s Office that is allegedly not in compliance with the applicable law, regulations or rules can challenge any such action before the Santiago Court of Appeals.</td>
</tr>
<tr>
<td><strong>Mexico</strong></td>
<td>Energy</td>
<td>As far as administrative remedies go, the Commission’s decisions can only be subject to a petition for reconsideration, to be decided on by the Commission itself pursuant to the provisions of the Federal Administrative Procedures Act.</td>
</tr>
<tr>
<td><strong>Peru</strong></td>
<td>Telecommunications, Energy, Water and Sanitation</td>
<td>- In the event of a dispute concerning the interpretation or application of a regulation and/or legal provision by the Agency in a specific case, the service provider is allowed to challenge the interpretation or application before the Board of Directors. No such challenge is available against the contents of the regulatory and/or legal provision.&lt;br&gt;- Supervision is entrusted to the Agency’s General Manager. The General Manager’s decisions are appealable before the Board of Directors.&lt;br&gt;- Control and penalization are first performed by the Agency’s General Manager, subject to appeal to the Board of Directors.&lt;br&gt;- Collegiate Bodies have first-instance jurisdiction over disputes arising between service providers. Appeals are settled by the Dispute Resolution Tribunal. The Tribunal’s decisions can be appealed to the Judiciary.</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td>Telecommunications</td>
<td>The agency’s decisions can be appealed to the Administrative Appeals Tribunal.</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td>Energy</td>
<td>The regulatory agency’s decisions can be appealed to the Federal Court of Australia.</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>Energy, Water and Sanitation</td>
<td>Regulatory decisions can be appealed to the Monopoly and Mergers Commission, the U.K. anti-trust agency.</td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td>Energy</td>
<td>Resolutions passed by the National Energy Commission can be appealed to the Ministry of Industry and Energy.</td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td>Telecommunications</td>
<td>Decisions and resolutions passed by the Commission in the exercise of its public functions entail the exhaustion of administrative remedies and may be appealed before contentious-administrative tribunals.</td>
</tr>
<tr>
<td><strong>New Zealand</strong></td>
<td>Public Utilities</td>
<td>The Commission’s decisions can be appealed to the Supreme Court.</td>
</tr>
</tbody>
</table>
Appeals are a necessary tool to provide protection from and, to a certain extent, set a limitation on the regulator’s excessive discretion.

**Stakeholder Relations**

The nature of the PPP clearly shows that, regardless of a source of any distressful event affecting a contract, it is essential to manage the relationship with the different stakeholders to make sure that any solution analyzed—and eventually implemented—has an adequate level of consensus. In a way, the mechanisms used to make decisions to solve the crisis are as important as the concrete actions eventually implemented.

These mechanisms for participation are important both to prevent crises and to adopt measures aimed at solving problems once they have been identified because they have interfered with the normal operation of the system. In this regard, it is necessary to have systems adopted by consensus allowing early detection of the problems and the creation of contingency plans to deal with crises.

The mechanisms for consultation and participation, such as public hearings; consultation forms; and alternative dispute resolution methods such as arbitration, mediation, expert panels, etc. which are available during the regular performance of contracts are also useful to deal with a crisis, since they may help identify options and alternatives aimed at solving the crisis, while maximizing the project’s monthly invoiced amount.

Nonetheless, in addition to the institutions and entities designed for the operation of the PPP in the normal construction and operation stages, other specific mechanisms are required, focused especially on the prevention and solution of distress situations. There are three of such mechanisms that are especially important: crisis committee, mechanism for the relation with creditors and vehicle to channel funds.

During a crisis it is important to have and follow clear crisis management rules and procedures since normal policies and procedures may hurt rather than help at first. This is why it is important that an appropriate structure be in place to manage a crisis effectively. Clear definitions must exist for a management structure, authority for decisions, and responsibility for implementation.

A Crisis Management Team should be in charge of coordinating the resources during the duration of the crisis to ensure all proper actions are taken. The objectives of this body are to save lives and reduce chances of further injuries/deaths, protect the environment, protect assets, restore critical business processes and systems, reduce the length of the interruption of business, minimize reputation damage and maintain customer relations.
BOX 26: Crisis Management Team

**Team Leader:** responsible for managing the team. Ideally it should be a strong senior executive or manager who has the authority to act without fear of being second-guessed. The manager needs a long-term perspective and should be freed from other responsibilities to lead the crisis management team until the crisis ends.

**Environmental, Health and Safety (EH&S):** Coordinates the EH&S response from the corporate level with the EH&S contact at the site. Should have a broad range of EH&S and product integrity experience or be able to contact appropriate experts.

**Public Relations:** Assures accurate and timely public response is being made and is proficient in developing press releases and interfacing with the media.

**Human Resources:** Assures human relations issues are being addressed. Should have a broad range of HR expertise or be able to contact appropriate experts.

**Legal:** Provides legal counsel to the team. Participates in communication preparation and provides advice on securing incident scene for subsequent investigation.

**Security:** Advisor to site or incident scene team and liaison with the various agencies and security contractor(s).

**Team Coordinator:** This person stays in the crisis center and assures the members are working with the most current information. Tasks include

- Records information and comments from the team
- Makes team leader aware of new information
- Records chronological events
- Updates team members as they arrive or return to the command center
- Assists team leader in managing CMT activities
- Tracks/documents key phone numbers, contacts, etc.

Source: Corporate crisis management - Center for Chemical Process Safety of the American Institute of Chemical Engineers

Depending on the nature of the crisis – affecting a firm, a sector, or the whole of the economy – different management strategies will be needed. Firm specifics crisis require actions at the level of the firm and usually do not need large support from the government (in economic or political terms). Sectoral crisis on the other hand will usually require a larger coordination effort and their resolution will depend on political support at the highest level (see BOX BB with the experience of Brazil).
During the stages of normal operation of a PPP, creditors are not generally considered an important stakeholder in decision-making processes. However, during economic distress periods and—especially—in cases of financial distress, creditors clearly become stakeholders with definite rights, and must thus be made part of any decision-making process.

To minimize the financing costs through adequate risk distribution, most PPP grant creditors a clear right to step-in under certain distress conditions. These rights are closely related to the Project finance logic that prevails in certain PPP contracts. As such, these rights are recognized in the legal frameworks governing public-private partnership forms.

This is the case in the United Kingdom, where the parties to the contract have legal certainty as to how their relationships will develop during the project’s construction and exploitation phases, which are agreed by the parties in advance. Actually, the parties accord subrogation or step-in rights in to financial entities, which are recognized and accepted by the Administration authorizing the project. Particularly, in the event of breach of the duties by the concessionaires, the law offers the following alternatives: a) transfer the ownership of the shares in the project company to the lenders or a trade buyer; b) appoint a receiver to take control of the project company and/or realize its assets to pay back the debt or c) exercise “steps in” rights under the direct agreement to either run the project or delegate the project to a trade buyer or the lenders.

The approach adopted in Australia is slightly different. In the airport sector, there are tripartite agreements between the twelve major regulated companies, the Australian Government, and financial entities. These agreement—which establish step-in rights—set out the framework and the procedure to be followed by the Granting Authority in the event of bankruptcy of airport

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135 What next for lenders to distressed power assets in the UK? An overview of legal and security issues by Tony Hawkins and Bruce Johnston, LeBoeuf Lamb Greene&MacRae.
companies, and seek to balance the interest of creditors regarding the repayment of the credits granted and the interest of the Granting Authority of securing uninterrupted service.
BOX 28: Relation with creditors in Chile

In Chile, Section 43 of the Law of Public Work Concessions (hereinafter, the Law) establishes a special lien that may be used to encumber public work concessions, which may be granted to the creditors funding the work, the operation of such works or the issuance of corporate bonds of the concessionaire, and may be levied on a) the public works concession; b) any payment owed by the State to the concessionaire; and c) the company’s revenues.

Pursuant to this section, lien holders have certain powers. Especially, they have the right to step-in and to interact with the Ministry of Public Works in different cases. For instance:

1. The concessionaire must request the authorization of the Ministry of Public Works to transfer its shares or rights during the construction phase. However, the MOP must always authorize the transfer to the lien holder when said transfer results from the enforcement of obligations secured by such lien in accordance with Section 43 of the Law.

2. Upon determination that there has been a serious breach of the concessionaire rights, any credits secured with the lien established in Section 43 of this Law shall become due. These credits shall be paid with the proceeds of the bid, and shall be paid before any other credit.

3. The concession shall be terminated by mutual agreement between the Ministry of Public Works and the concessionaire. However, the Ministry of Public Works may only terminate the contract if the beneficiaries of credits secured by the lien established in Section 43 agree to cancel such lien or consent to the early termination.

4. The beneficiaries of credits secured by the special public works lien have a right to demand information in connection with any controversy submitted to the consideration of the Conciliation Committee. In fact, they may be admitted as independent third parties to any procedure presided by such Committee, provided they have an interest in such procedure.

5. If the concessionaire incurs in fault constituting grounds for termination due to serious breach, the Ministry of Public Works may carry out a procedure prior to demanding the termination of the concession. There are two different ways for creditors to participate in this procedure. First, they are informed of the grounds and serious breaches of the contract. Second, they must give their consent to creditors regarding the report to be submitted to the Ministry of Public Works, which must indicate clearly the measures to be taken to cure the breaches or prevent them from reoccurring in the future.

6. In the event of bankruptcy of the concessionaire, the first ordinary meeting of creditors must decide -at the proposal of the receiver or two or more creditors jointly- to sell the concession in a public auction or to continue with the regular business of the Concessionaire. In turn, the Ministry of Public Works shall appoint a representative who shall work jointly with the receiver and the meeting of creditors to preserve the uninterrupted provision of the service or services subject to concession.

7. The Ministry of Public Works must consult with creditors the minimum number of bids required for a bidding process to be carried out if the ordinary meeting of creditors has voted for a public auction due to the bankruptcy of the concessionaire.

Source: DECREE No. of the Ministry of Public Works

These step-in rights are a preventive mechanism which makes it possible for financers to intervene in the concessionaires’ management before their financial position deteriorates
completely. In fact, financial entities may take over control to salvage the company’s finances, but also with the objective of recovering their credits. In this context, creditors become a relevant party in every consultation and decision-making process related to a crisis situation. Chile’s laws and regulations for the transportation system go even further in terms of creditors’ rights, since it establishes that they must be consulted by the Government under certain conditions.

During a crisis it is important to have and follow clear crisis management rules and procedures since normal policies and procedures may hurt rather than help at first. This is why it is important that an appropriate structure be in place to manage a crisis effectively. Clear definitions must exist for a management structure, authority for decisions, and responsibility for implementation.

A Crisis Management Team should be in charge of coordinating the resources during the duration of the crisis to ensure all proper actions are taken. The objectives of this body are to save lives and reduce chances of further injuries/deaths, protect the environment, protect assets, restore critical business processes and systems, reduce the length of the interruption of business, minimize reputation damage and maintain customer relations.

**BOX 26: Crisis Management Team**

Source: Corporate crisis management - Center for Chemical Process Safety of the American Institute of Chemical Engineers

Depending on the nature of the crisis – affecting a firm, a sector, or the whole of the economy – different management strategies will be needed. Firm specifics crisis require actions at the level of the firm and usually do not need large support from the government (in economic or political terms). Sectoral crisis on the other hand will usually require a larger coordination effort an their resolution will depend on political support at the highest level (see BOX BB with the experience of Brazil).
During the stages of normal operation of a PPP, creditors are not generally considered an important stakeholder in decision-making processes. However, during economic distress periods and –especially- in cases of financial distress, creditors clearly become stakeholders with definite rights, and must thus be made part of any decision-making process.

To minimize the financing costs through adequate risk distribution, most PPP grant creditors a clear right to step-in under certain distress conditions. These rights are closely related to the Project finance logic that prevails in certain PPP contracts. As such, these rights are recognized in the legal frameworks governing public-private partnership forms.

This is the case in the United Kingdom, where the parties to the contract have legal certainty as to how their relationships will develop during the project’s construction and exploitation phases, which are agreed by the parties in advance. Actually, the parties accord subrogation or step-in rights in to financial entities, which are recognized and accepted by the Administration authorizing the project. Particularly, in the event of breach of the duties by the concessionaires, the law offers the following alternatives: a) transfer the ownership of the shares in the project company to the lenders or a trade buyer; b) appoint a receiver to take control of the project company and/or realize its assets to pay back the debt or c) exercise “steps in” rights under the direct agreement to either run the project or delegate the project to a trade buyer or the lenders.

The approach adopted in Australia is slightly different. In the airport sector, there are tripartite agreements between the twelve major regulated companies, the Australian Government, and financial entities. These agreement -which establish step-in rights- set out the framework and the procedure to be followed by the Granting Authority in the event of bankruptcy of airport companies, and seek to balance the interest of creditors regarding the repayment of the credits granted and the interest of the Granting Authority of securing uninterrupted service.
A third important element in cases of PPP contract crises is to count with adequate institutional mechanisms allowing –when necessary- to provide the carrier with the funds required to guarantee service provision or to allow for recovery after a catastrophe. In this regard, it is not enough that the State is willing to contribute those funds, but it is also necessary to have the legal and institutional devices required to channel those funds quickly and efficiently.

The case of Mexico in relation to this issue is very illustrative since the government has created a natural disaster fund that it uses to assist the Mexican states and Federal Agencies that render infrastructure services (ver BOX 29).

**BOX 29 - Natural Disasters Fund - Mexico**

In 1996, the Mexican government created the Natural Disasters Fund (FONDEN) for the purpose of increasing its response capacity to the damage caused by natural disasters and dealing with such damage without altering the fiscal accounts. Indeed, the FONDEN was a program created to timely deal with the uninsurable damage caused on infrastructure by natural disasters.

The FONDEN is a federal program responsible for providing the Mexican states and the Federal Agencies (in charge of the federal infrastructure) with the fund’s resources to deal with the damage caused by natural disasters when their magnitude exceeds the response capacity of the states and Federal Agencies’ own resources. Therefore, the FONDEN is a supplementary and subsidiary fund.

In order to access the fund’s resources, the Mexican states and Federal Agencies must justify that the economic costs of the damage caused by natural disasters exceed their financial situation and, therefore, that they have no sufficient resources available to repair such damage provided for in their ordinary budgets.

The program rules provide transparency to the delivery of resources, and the possibility of incorporating technical improvements to the infrastructure that is rebuilt in order to reduce the likelihood of being damaged again upon the occurrence of subsequent natural disasters.

### 1.4.3 Managing flexibility to meet the changes

Comparing the evidence on renegotiations submitted by Guasch with the information on projects under distress of the PPI Database, it is possible to have an idea of the effectiveness of renegotiations as a tool to solve distress problems.

Guasch presents a study based in 942 concessions in Latin America during the 1991-2001 period. The methodology adopted by this author states that: “Renegotiation has occurred if a concession contract underwent a significant change or amendment not envisioned or driven by stated contingencies in any of the following areas: tariffs, investment plans and levels, exclusivity rights, guarantees, lump-sum payments or annual fees, coverage targets, service standards, and
concession periods. Standard scheduled tariff adjustments and periodic tariff reviews are not considered renegotiations."

A deep analysis of this point would require a detailed valuation of the costs and benefits of both alternatives, which is not possible within this framework. Nevertheless, it is expected that the termination or arbitration costs (both conditions are included in the distress definition in our PPI Database analysis) are substantially higher than the costs related to renegotiation.

Table 17 shows information by sector regarding the incidence of the renegotiation reported by Guasch and of the projects under distress (those terminated and those submitted to arbitration) as per the PPI Database.

| Table 17: Renegotiation as to Tool to Solve Contractual Disequilibrium |
|---|---|---|---|---|---|---|
| | Distressed | Total | Incidence | Renegotiated | Total | Incidence |
| Energy | 51 | 488 | 10,5% | 25 | 256 | 9,8% |
| Telecom | 4 | 115 | 3,5% | 3 | 273 | 1,1% |
| Transport | 32 | 382 | 8,4% | 151 | 276 | 54,7% |
| Water & Sewerage | 24 | 191 | 12,6% | 102 | 137 | 74,5% |
| Total | 111 | 1.176 | 9,4% | 281 | 942 | 29,8% |

Sources: Distressed: Own calculations based on PPI Database Renegotiation: Guasch 2004 – Table 6.3

Comparing the facts presented by Guasch with the information from the PPI Database, it is evidenced that in general, renegotiation has been a relatively successful mechanism in terms of avoiding termination and/or arbitration of the infrastructure projects in Latin America. Beyond the problems related to renegotiations mentioned before, its use to avoid the termination of projects a priori appears an efficient tool.

If we add up the projects under distress from the PPI Database and the renegotiated projects from the Guasch database, we can build a group of projects with “contractual disequilibrium”. In these contracts, renegotiation failures mean that contracts are cancelled or submitted to arbitration, whereas the rest achieves to overcome contractual disequilibrium through renegotiation. An estimation is contained in Table 18.

Renegotiation effectiveness strongly varies among sectors. The energy sector has lower effectiveness, with a number of renegotiations substantially lower than the one shown in projects under distress, wherefrom only 32.9% of the contracts with disequilibrium were solved through renegotiation.

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136 This assumes that renegotiations were indeed necessary; that is, they were the result of a supervening contractual disequilibrium after the contract’s award and not due to a strategic behavior by the grantor or the government.

137 There is no evidence that PPI Database projects terminated or submitted to arbitration have been subject to a formal prior renegotiation process. Nevertheless, this assumption seems reasonable for the purpose of our analysis. In fact, arbitration processes such as the ICSID ones, require a prior formal renegotiation between the parties before submitting themselves to arbitration.
On the other end, in the water and sewerage and transportation sectors, renegotiation effectiveness is very high. In both sectors, more than 80% of the contracts with problems were renegotiated successfully. The telecom sector presents an intermediate situation, with 42.9% of successful renegotiations, but since the sample is not much representative (a total of only 7 cases), the results are not solid. In the aggregate, renegotiation effectiveness is slightly higher than 70%, taking into consideration the four sectors analyzed.

This effectiveness may be compared to the solution of distress cases in the private sector reported by Hopper Wrock. As per this author’s data, when analyzing the American market, 47% of the financial distress cases are solved via a private workout, while the remaining 53% are solved under Chapter 11 of the US Bankruptcy Law.\textsuperscript{138}

\begin{table}
\centering
\begin{tabular}{|l|c|c|c|}
\hline
 & Failed & Solved & Total \\
\hline
Energy & 67,1% & 32,9% & 76 \\
Telecom & 57,1% & 42,9% & 7 \\
Transport & 17,5% & 82,5% & 183 \\
Water & sewerage & 19,0% & 81,0% & 126 \\
\hline
Total & 28,3% & 71,7% & 392 \\
\hline
\end{tabular}
\caption{Renegotiation as a Tool to Solve Contractual Disequilibrium}
\end{table}

\textsuperscript{138} This analysis only aims at showing some hints of relative magnitude between PPP contracts and the general economy. Clearly, the rules for solving distress situations depend directly on the legal provisions –such as the Bankruptcy Law- which present very strong conceptual and practical variations among countries.

\textsuperscript{139} In the reported Morse study we have included only the cases for which there is information and omitted the 17% for which there are no data on the solution of the distress situation.

Two studies on the evolution of companies under Chapter 11 (Weiss 1990 and Morse and Shaw 1988) show that from these companies, 95% and 82% are reorganized, whereas the remaining 5% and 18%, respectively, are liquidated. In average, 94% of the companies achieve reorganization (including the private workout and Chapter 11 Reorganization), whereas only 6% is liquidated.

Therefore, if we compare the renegotiation effectiveness in the infrastructure sectors with the percentage of distress situations in the private sector that are solved through private agreements or through legal mechanisms (e.g.: Chapter 11) we see that there is a wide margin to improve the PPP’s operation.

The report on projects under distress in the electricity sector also suggests the adoption of an integral view of the renegotiation process, and not limit such process to financial aspects: “The
workout process should not be restricted to the contractual or financial issues: it should also include the formulation of a management strategy, because the performance of investors was perfectible on occasions in the area of commercial management and quality of services. These issues should be included in workout strategies for utilities and distribution companies.”

The authors of the report on Power Projects Under Stress draw their conclusions in this same sense: “Risk management instruments that are expected to deal with contract compliance (including prices) do not prevent stress under extreme circumstances, though they were supposed to deal with such situations; the possibility of renegotiation of contracts under severe macroeconomic conditions should be included to ensure that the balance between the interests of the parties is maintained, even under extreme situations.”

Guarantees

Another instrument available to reduce a priori the probability of distress or, at least, to reduce the costs for the investors in the project consists in the adoption of guarantees against some of the main external risks affecting the PPP projects.

There are different guarantees which cover both natural and political risks, and which may be used at the stage of design of a PPP to make an efficient allocation of project risks. These guarantees cover particular risks and, in general, they are supplementary to other forms of insurance – through contracts or explicit guarantees – based on market instruments which may be used for an optimum risks allocation between the parties.

Chart 3 shows the main guarantee instruments offered by the World Bank. The instruments available cover both public and private projects and they may be used in relation with debt and/or equity to cover both natural and political risks.

Chart 3: Guarantee Instruments by the World Bank Group
It may be observed from the analysis of the PPI Database that multilateral institutions have supported the PPI projects with different instruments, such as: loans, capital investment, insurance, syndicated loans, and risk management. These instruments have been used in projects which involve more than 1 billion dollars in the 1991-2006 period. This amounts to about one third of the investment in PPI projects for the period.

Table 19: Support to infrastructure projects by multilateral institutions

<table>
<thead>
<tr>
<th>Agency</th>
<th>IBRD</th>
<th>IDA</th>
<th>IFC</th>
<th>MIGA</th>
<th>Others</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>74</td>
<td>24</td>
<td>24</td>
<td>98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guarantee</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>104</td>
<td>24</td>
<td>152</td>
</tr>
<tr>
<td>Insurance</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Loan</td>
<td>37</td>
<td>33</td>
<td>198</td>
<td>331</td>
<td>4</td>
<td>599</td>
</tr>
<tr>
<td>Quasi-equity</td>
<td>37</td>
<td>4</td>
<td>1</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syndication</td>
<td>106</td>
<td>79</td>
<td>185</td>
<td>1098</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Self-made report on the basis of PPI Database data

Out of this total of 1,000 billions, more than half of the total amount pertains to the World Bank group, while the others pertain to other international institutions. Within these instruments, guarantees appear with a relatively modest participation, since only 150 billions (out of a total of 3,600 billions) are covered by guarantees.
Guarantees, as a specific risk-mitigation instrument appear to be more effective at the time of reducing the risk of distress, than the other supports provided by multilateral institutions. If the analysis was based on this instrument, it would significantly reduce the risk of distress (Table 20) in three of the four sectors.

Table 20: Projects supported by Guarantees provided by Multilateral Institutions: Incidence of Distress per Number of Projects

<table>
<thead>
<tr>
<th>Sector</th>
<th>Project status</th>
<th>Distressed</th>
<th>Others</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td></td>
<td>4%</td>
<td>96%</td>
<td>98</td>
</tr>
<tr>
<td>Telecom</td>
<td></td>
<td>4%</td>
<td>96%</td>
<td>27</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td>0%</td>
<td>100%</td>
<td>21</td>
</tr>
<tr>
<td>Water and sewerage</td>
<td></td>
<td>17%</td>
<td>83%</td>
<td>6</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>4%</td>
<td>96%</td>
<td>152</td>
</tr>
</tbody>
</table>

Once again, the water sector shows different features from the rest of the sectors. Guarantees in the water and sanitation sector do not seem to be effective since the incidence of distress among projects with guarantees reaches 17% while for this sector’s project; the incidence represents 10.1% (Table 23).

In some cases, the multilateral agencies’ participation consists of payment obligations by the government, guaranteed by such agencies (see BOX 30).

**BOX 30: Guarantees in road sector - Peru**

Over the last years, in order to attract investment in infrastructure, the Peruvian Government has incorporated private capital and technology to the construction and operation of strategic projects. The Northern Branch of the Amazonas IIRSA Axis (Regional South American Initiative) was one of those initiatives. This branch integrates northern regions of the Amazonas with the rest of the Peruvian economy, and it is one of the most important projects focused on the integration between Peru and Brazil.

The Peruvian Government executed the project called Northern Branch of the Amazonas IIRSA Axis under a PPP scheme. Under such scheme, it granted a concession to a private investment group for the improvement, overhaul, maintenance and transfer of the works of said Branch, for a term of 20 years. Under the contract, the concessionaire undertook to fund the total costs of the project, and the government in turn assumed the following duties:

- Annual Payment for Works (PAO, for its Spanish acronym): Payable every six months, for a deferred period of 12 years. It must be paid after the conformity of the Works.
- Annual Payment for Maintenance and Operation (PAMO, for its Spanish acronym): Payable on a quarterly basis, upon transfer of the sections built, refurbished or improved. The toll collected by the Concessionaire is allocated to its working capital and thus discounted from the PAMO. Thus, the Government is only bound to pay the difference.

The amount of such payments was the result of a competitive bidding process, where the concession was granted to the bidder that demanded the lowest present value of payments.
The resources for the payment of the PAO come from the budget of the Ministry of Transportation, Communications and Housing (MTC) and are assigned by the Ministry of Economy and Finance (MEF) in each budget.

As part of such funding, the Peruvian government requested from the Inter-American Development Bank a partial credit guarantee for a term not to exceed 17 years, to guarantee to the Concessionaire that the PAO payments established in the concession contract would be made in due time and manner. This guarantee also includes the recognition of partial works in the event of anticipated termination of the concession.

The guarantee is backed by the Peruvian Government through the Execution of a Counter Guarantee Contract establishing that any payments made by the Bank to the Concessionaire under the partial guarantee shall automatically become long-term loans owed to the Bank by the Republic of Peru.

**Scheme of the Guarantee Contract**

An original alternative of guarantees against natural phenomena is the creation of bonds specifically designed to cover the risks of catastrophes, such as the ones issued by Mexico (see BOX 31)

**BOX 31: Catastrophe Bonds**

**CAT** bonds transfer certain risks from the sponsor to the investors. In a typical issuance of CAT bonds, the sponsor (generally a reinsurer) creates a specific purpose unit (SPU) to make an issuance and invest capital in low risk values. The performance of these investments is paid to the bond holders together with the premium paid by the sponsor (diagram A).

If, upon expiration of the bonds, the specified event did not occur, the investors recover the principal, as it happens in the case of ordinary bonds (diagram B). But if the specified catastrophe occurs during the life of the bond, the investors waive all or part of their right and the SPU pays the sponsor. In other words, the risk passes on to the investors.

**A. Transaction**

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>SPU</th>
<th>Investor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td></td>
<td>Principal</td>
</tr>
<tr>
<td>Slip</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Possible results

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Insurance coverage</th>
<th>SPU</th>
<th>Investor</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the catastrophe occurs</td>
<td></td>
<td>If the catastrophe has not occurred on the expiration date</td>
<td></td>
</tr>
</tbody>
</table>

Since the assets and liabilities related to the issuance of the bonds remain with the SPU, the CAT bonds are exclusively an insurance mechanisms for the sponsor and do not entail any liability. Its main advantage is to break down and transfer the risks to a large group of investors when the insurance of a single counterpart is too expensive or impossible to take. CAT bonds offer the investors a performance higher than the market rates (because they also pay a premium in addition to the low or no risk performance) and a unique opportunity to diversify their portfolio, because the catastrophic risks are seldom related to the evolution of stock or bond markets.


The use of guarantees, whether from international agencies or the government or created by means of market financial instruments, allows an adequate distribution of the project’s risks and, in many cases, it represents an essential element to make the project viable from a financial point of view.

1.4.4 Managing expiry and termination

1.5 Managing change of circumstances and contract under stress

The success of the PPP infrastructure projects is based, to a great extent, in the stages of design, bidding, construction, operation and maintenance. A careful allocation of risks and responsibilities in the design stage is a key factor in the creation of efficiency incentives and cost minimization. Given the strong capital intensity in these sectors, the cost of capital – defined by the risks associated to the project – is crucial for assuring sustainability and “value for money” of the projects.

The selection mechanisms of the private partner, particularly in the process of competitive bidding, are the second element towards the success of the PPP projects. A bidding process that is well designed and implemented – with a high degree of competition – is central for the selection of the most efficient partner for each project.

The long life of the infrastructure PPP projects, the political sensitivity in the sectors where these projects are developed, together with the impossibility of writing complete contracts, makes it impossible to avoid in all circumstances the emergency of problems. An active contract management, therefore, is also an essential part of a successful PPP.
The supervision of the construction, operation and maintenance stages is the fourth factor that will result in a successful PPP Project. In this stage the mechanisms and institutions that will permit a suitable relation between parties - essential to the nature of PPPs’ - are needed, together with an effective control and enforcement of the contract. The latter can also be reviewed and adapted to changes in the circumstances, dynamically maximizing “value for money”.

However, even if the best practices are applied in each stage, the emergence of conflict and distress situations cannot be completely avoided. The objective of this paper is to summarize the literature, review recent findings and empirical evidence on contracts under stress. At the same time, best practice approaches to PPP contracts under stress will be presented to illustrate the main conceptual and analytical points discussed in the paper. In this analysis it is important to focus on both the private and the public sectors, as distress situations in PPP contracts affect the whole of the partnership.

One of the central elements in PPP projects is an efficient allocation of risks among all stakeholders. In financial theory, risk is defined as the chance that an investment's actual return will be different from expected. This includes the possibility of losing some or all of the original investment. Given that the risk is inherent to PPP projects, it is clear that under certain situations adverse scenarios will be realized, negatively affecting the project.

The situations of distress are then primarily associated to the realization of scenarios (states of nature) that will negatively affect the business development. These can be related to any of the variables that allow for risk, including exogenous variables (such as the level of demand, costs, and inputs availability, etc.) or endogenous (behavior of the subscribers to the contract).

Nevertheless, not every negative scenario will result in a distress situation. In many cases, these scenarios will result in negative effects that may be absorbed by the parties within normal ranges of business operation, without affecting the contract. In other cases conflicts associated to these scenarios may arise – particularly common in cases where risk has not been properly allocated in the contract – without resulting in a situation of contractual distress, as the conflict might be solved by the dispute settlement mechanisms provided in the contract, or the negotiation between parties.

In some cases however, situations may appear where the negative effects are of such magnitude that they cannot be absorbed by the parties or the conflicts cannot be solved under the contractual framework, giving place to a situation of distress. Even if these circumstances cannot be totally eliminated, a correct design and management of the project are essential to minimize such situations, or once realized, to minimize their impact.

When analyzing the situations of distress and their consequences, it is important to bear in mind two aspects. Firstly, the negative impact of the situations of distress in a PPP project generally goes beyond to affect other projects and in some cases the whole economy. Secondly, the nature of some of these sectors makes the government to have the ultimate responsibility in the provision of service.

These two elements give the government strong incentives to prevent and minimize the occurrence of distress situations. As a result, due care is needed when designing, implementing and supervising the PPP contracts in order to minimize not only the occurrence but also the associated negative effects. In this context it is important to analyze and anticipate potential conflict situations so that appropriate interventions may be designed to prevent or mitigate the likely
consequences. For example, programs may have early warning systems or may establish contingency plans in conflict situations to allow for an efficient management during extraordinary periods associated with crisis.

This document is focused on analyzing the empirical and analytical experience that will allow for a better characterization and understanding of such phenomena in order to contribute to its efficient prevention and management.

**Incidence of Distress Problems**

The incidence of distress in PPP projects can be analyzed based on the information contained in the World Bank’s PPI Database. This database has data on almost 3,600 PPI projects developed worldwide between 1991 and 2006.

The available variables for each project include the project’s status, which can be: cancelled, concluded, under construction, distressed or operational. Out of these, cancelled and distressed projects may thus be viewed as projects in distress.

The PPI Database uses the following criteria to classify projects into these two categories:

- **canceled projects** from which the private sector has exited in one of the following ways:
  - selling or transferring its economic interest back to the government before fulfilling the contract terms.
  - removing all management and personnel from the concern
  - ceasing operation, service provision, or construction for 15 percent or more of the license or concession period, following the revocation of the license or repudiation of the contract

- **distressed** projects where the government or the operator has either requested contract termination or are in international arbitration.

As to the latter definition, it should be noted that the underlying criterion is quite restrictive, as it only accounts for projects that have reached a relatively advanced stage of conflict. Situations of financial, economic or operational distress that affect the service but have not triggered an open legal conflict with the government are not taken into consideration. Accordingly, the results of the analysis can be viewed as conservative with respect to the real incidence of distress situations in the universe of projects.

A first measure of the relevance of the distress phenomenon is related to the number of projects in distress relative to the total number of projects developed in the period. Table 21 illustrates this information, broken down by type of PPP.

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141 There is a sixth category, *i.e.* merged projects, which we have chosen to leave out of the analysis, as it covers projects merged into other projects and their inclusion might lead to a duplication of results. In any event, these are not significant in number.
142 PPI Database glossary http://ppi.worldbank.org/resources/ppi_glossary.aspx
Table 21: Incidence of Distress Number of Projects by PPP Type

<table>
<thead>
<tr>
<th>Type of PPI</th>
<th>Canceled</th>
<th>Concluded</th>
<th>Construction</th>
<th>Distressed</th>
<th>Operational</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concession</td>
<td>50</td>
<td>32</td>
<td>33</td>
<td>15</td>
<td>727</td>
<td>857</td>
</tr>
<tr>
<td>Divestiture</td>
<td>21</td>
<td></td>
<td>27</td>
<td>614</td>
<td></td>
<td>662</td>
</tr>
<tr>
<td>Greenfield project</td>
<td>93</td>
<td>24</td>
<td>273</td>
<td>15</td>
<td>1,449</td>
<td>1,854</td>
</tr>
<tr>
<td>Management &amp; Lease</td>
<td>15</td>
<td>37</td>
<td>1</td>
<td>160</td>
<td></td>
<td>214</td>
</tr>
<tr>
<td>Grand Total</td>
<td>179</td>
<td>93</td>
<td>307</td>
<td>58</td>
<td>2,950</td>
<td>3,587</td>
</tr>
</tbody>
</table>

Source: Prepared by us using PPI Database data

Out of the almost 3,600 surveyed projects, 179 have been cancelled and 58 are in distress. Their incidence is thus 6.6% (5% and 1.6%, respectively). Although not particularly high, this value indicates that the risk that a PPP project will encounter difficulties is not nonexistent. These values are relatively consistent across all types of PPPs other than divestitures, where the incidence of cancelled projects is relatively lower (3.2%), and that of distressed projects is relatively higher (4.1%).

A special remark should be made in connection with divestiture projects. In principle, these could be left out of the analysis as they were asset sales and, hence, not strictly PPPs. However, an analysis of the data in the PPP Database reveals that, because of the manner in which they were granted, many concessions have been classified as divestitures. Accordingly, we have found it more adequate to include them in the analysis.

An alternative measure consists in considering the amounts invested instead of the number of projects. The investment figure is recorded in the PPI Database on the basis of disbursements and investments committed up to the execution of the PPP agreement. Table 22 provides this information, also broken down by type of PPP.

Table 22: Incidence of Distress Investment Commitments by Type of PPP

<table>
<thead>
<tr>
<th>Type of PPI</th>
<th>Canceled</th>
<th>Concluded</th>
<th>Construction</th>
<th>Distressed</th>
<th>Operational</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concession</td>
<td>22,673</td>
<td>2,325</td>
<td>5,346</td>
<td>4,108</td>
<td>114,067</td>
<td>148,519</td>
</tr>
<tr>
<td>Divestiture</td>
<td>2,528</td>
<td></td>
<td>25,268</td>
<td>367,221</td>
<td></td>
<td>395,017</td>
</tr>
<tr>
<td>Greenfield project</td>
<td>27,484</td>
<td>1,704</td>
<td>68,871</td>
<td>3,543</td>
<td>404,757</td>
<td>506,359</td>
</tr>
<tr>
<td>Management &amp; Lease</td>
<td>10</td>
<td>24</td>
<td>-</td>
<td>-</td>
<td>4,565</td>
<td>4,599</td>
</tr>
<tr>
<td>Grand Total</td>
<td>52,695</td>
<td>4,053</td>
<td>74,217</td>
<td>32,918</td>
<td>890,610</td>
<td>1,054,493</td>
</tr>
</tbody>
</table>

Source: Prepared by us using PPI Database data

Out of the slightly more than 1,000 billion dollars of investments disbursed and committed in the projects under consideration, 52 billion represent cancelled projects, and 32 billion represent distressed projects. Both categories combined account for 8.1% of the total investment commitments (5% and 3.1%, respectively). The fact that measuring incidence in terms of

143 This is the case, for instance, with electricity concessions in Argentina, where, because of the creation of new companies as concession holders, followed by the sale of their controlling interests, the transaction appears as a divestiture rather than a concession.
144 The greatest impact of such inclusion hits the telecom sector, where divestitures prevail. Still, overall, the inclusion of this category does not materially alter the results of the analysis.
investments leads to a higher incidence value than if measured based on the number of projects reveals that distress situations have higher incidence in larger projects.

As project size is frequently related to the project’s technological, institutional and financial complexity, the results appear to match *a priori* expectations. The more complex the project, the higher the probability that, as a result of design and/or implementation problems, the project will encounter difficulties in the construction or operation stages. It is also worth noting that the greater difference in incidence relates to distress as compared to cancellations. This also matches *a priori* expectations: large projects are renegotiated, rather than abandoned.

The manner in which the PPI Database measures investment may also help explain these results. The values in the database represent investments committed throughout the life of the project. The higher failure rate for projects involving large investment commitments could then reflect a gap between the investment commitment and the economic conditions defined in the contract.

Another way to test the possible impact of the specific features of each project on the probability of distress consists in analyzing projects based on the economic sector in which they are inserted. Such breakdown by sector, considering the number of projects, is illustrated in Table 23.

**Table 23: Incidence of Distress Number of Projects by Sector**

<table>
<thead>
<tr>
<th>Primary sector</th>
<th>Project status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distressed</td>
<td>Rest</td>
</tr>
<tr>
<td>Energy</td>
<td>89</td>
<td>1,401</td>
</tr>
<tr>
<td>Telecom</td>
<td>38</td>
<td>539</td>
</tr>
<tr>
<td>Transport</td>
<td>57</td>
<td>937</td>
</tr>
<tr>
<td>Water &amp; Sewerage</td>
<td>53</td>
<td>473</td>
</tr>
<tr>
<td>Grand Total</td>
<td>237</td>
<td>3,350</td>
</tr>
</tbody>
</table>

Note: Distressed includes canceled and currently under stress.
Source: Prepared by us using PPI Database data

For this analysis, we added the cancelled and distressed categories together. As it is evident, the water sector behaves in a considerably different way than the rest. The incidence of distressed projects in the water sector is 10.1%, some 1.5 above the average for all sectors (6.6%). In the remaining sectors, the incidence ranking is, from lowest to highest, as follows: transport, energy and, lastly, telecom, all presenting relatively similar values (ranging from 5.7% to 6.6%).

A replication of the analysis by sector, based on the investment commitment figures, leads to the values presented in Table 24.

**Table 24: Incidence of Distress Investment Commitments by Sector**

<table>
<thead>
<tr>
<th>Primary sector</th>
<th>Project status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distressed</td>
<td>Rest</td>
</tr>
<tr>
<td>Energy</td>
<td>30,233</td>
<td>303,626</td>
</tr>
<tr>
<td>Telecom</td>
<td>21,716</td>
<td>465,595</td>
</tr>
<tr>
<td>Transport</td>
<td>17,236</td>
<td>163,277</td>
</tr>
<tr>
<td>Water &amp; Sewerage</td>
<td>16,428</td>
<td>36,382</td>
</tr>
<tr>
<td>Grand Total</td>
<td>85,613</td>
<td>968,880</td>
</tr>
</tbody>
</table>

Source: Prepared by us using PPI Database data
In this case, differences between sectors are much more evident. The telecom sector has the lowest incidence, with only 4.5% of the value of investment commitments affected by distress situations. The energy and transport sectors present similar values around 9% (9.1% and 9.5%, respectively).

The water sector presents the greatest difference, with an incidence of 31.1% of the total investment commitments. The number of projects – investment commitment ratio also ranks at the top for this sector, which further supports the view that this sector has the more complex projects with a greater probability of facing situations of distress.

On average, these sectors have an 8.1% probability of distress (measured in terms of investment commitments). Leaving out the water sector, the average stands at 6.9%.

Overall, the aggregate results of the analysis based on the WB’s PPI Database are consistent with other specific sectoral studies on the incidence of projects under stress in the energy sector and in the water and sewerage sector.

Using the same basis, Harris et al (2003) found 48 cancelled projects for the period 1990-2001, which accounts for only 1.9% of the total number of existing projects. In terms of investments, these projects added up to 24.2 billion dollars, some 3.2% of the total investment commitments. On average, projects were cancelled 4 to 5 years after their initial date, which is relatively early for projects estimated lives of 20 to 30 years.

For the energy sector, a study on electricity projects in distress developed by the PPIAF provides more detailed evidence of the causes and effects of situations of distress.

The PPI Database was the source of information for this study as well, supplemented by a World Bank and private investors’ survey that provided a sample of 63 distressed projects in 18 countries.

This study found that “Overall, a stress situation in the electricity sector is a rare event, which has affected or is affecting only 4 percent of power projects in number and 10 percent in value. If projects that have been worked out are excluded, the risk of stress falls to 3.5 percent in number and about 7 percent in value. Considering that all projects that went through stress were either cancelled or worked out, it appears that in the past some 21 percent of the projects that incurred stress were ultimately worked out while some 33 percent ended up in cancellation.”

For the water sector, there is a similar study of the IADB that uses a slightly different approach by focusing on the analysis of the “Salida de operadores privados internacionales de agua en América Latina” [Exit of international private water operations in Latin America]. Such work is not intended to quantify the incidence of this process in the universe of projects, but to “perform a count of cases and describe their main distinguishing features.” The universe of analysis is different from ours in two dimensions. First, because such exit may be the result of business decisions that have nothing to do with distress situations, the study included cases that are irrelevant to our analysis. Second, there may be distressed projects that do not involve international operators or have not ended up in their exit.
The study analyzed a total of 14 cases across five countries. Of such cases, three relate to decisions made by the parent companies and have no connection with stress situations. The remaining 11 cases are classified into changes in national sectoral policy, social and political conflicts, alteration of the contract’s economic and financial equilibrium.

This universe can be compared to the 24 cancelled and distressed projects (20 and 4, respectively) included in the PPI Database. The differences would, in principle, be attributable to the two reasons mentioned above: distressed projects that do not affect foreign investors and projects involving foreign investors but which did not end up in their exit.

To conclude, both the evidence from the analysis of the PPI Database and the sectoral studies referred to above reveal that, even if not leading to extremely high values, the incidence of distress in PPP projects is far from being immaterial. A relevant aspect is the strong differences between sectors, particularly the significant impact of distress problems on the water and sewerage sector.

**Costs of Distress Situations**

A valuation that is comprehensive of the economic costs of distress situations in the PPI contracts included in the PPI Database is extremely difficult and beyond the scope of this work. However, some tentative estimates can be presented that provide an idea of the orders of magnitude involved.

Three separate sources of costs can be identified: direct costs of cancelled or distressed projects, and indirect costs caused by contagion to other PPP projects. In turn, these arise via two different mechanisms: the perception of PPP risks by investors and the weakening of the institutions in charge of designing and implementing the PPP and the regulatory agencies in charge of oversight and regulation at the projects’ construction and operation stages.

It must be stated that due to the nature of PPPs in the infrastructure sectors, the public sector is, in most cases, ultimately responsible for the service provision. Therefore, the possible cases of distress necessarily generate costs to the public sector which exceed the economic and financial costs borne by the private sector, even when the latter had undertaken certain risks in the transaction.

Part of the government costs relate to explicit and implicit guarantees. Explicit guarantees are known and defined at the design stages of the PPP contract. As Cohen and Perocco point out “Implicit ones are based on the perception that government will not or cannot back out certain obligation if a major disaster happens such as an earthquake, but also financial crises involving failures or bankruptcy of banks and major corporations…”.

A first direct measure of the costs of projects in distress is the value of the investments committed in cancelled or distressed projects in the sample. According to the information available in the PPI Database, these projects total 85 billion dollars (see Table 24).

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145 Out of the cases under analysis, six represent Argentina whereas the remaining countries, namely Bolivia, Chile, Uruguay and Venezuela, present two cases each.
Indirect costs are the result of contagion effects on other companies. In competitive markets, the announcement that a company is filing for bankruptcy creates information telling that the market is performing worse than expected. This causes investors to adjust their estimates and, because the results of companies in the same sector are correlated, the information reveals that the industry is performing below the estimated levels.

Even though via different channels, similar behaviors can be expected in infrastructure services markets. Both sector-specific works discussed in the preceding section provide evidence of this fact.

For the water and sewerage sector, the IADB report notes that “regulatory agencies have weakened across the board, particularly in cases where serious conflicts were involved. The perception of governments and users is that such agencies failed to fulfill the role entrusted to them, despite the fact that, in many cases, they were not provided with the resources and technical and political autonomy required to carry out their task. Reactions have been particularly significant in Bolivia and in various Argentine provinces. Only in the case of Chile can it be said that the interaction between the regulator and powerful international operators actually allowed the agency to become stronger, as the five-year tariff settings and the development plan compliance requirements were successfully managed.”

Without question, such institutional deterioration carries costs as far as reputation goes, as it would create in investors a perception of material risks associated with investments in that sector. Such risk affects the cost of capital and, consequently, the financing costs of all projects in the sector (country-wide and, possibly, region-wide). In fact, this situation may lead to a vicious circle of self-fulfilling prophecy: the increase in the perception of the risk by investors enhances the cost of capital which thus leads to an increase in the firms’ costs (and tariffs) which may result in an increase of non-payments and therefore cause a greater economic and financial weakening of the firms.

For the electricity sector, the World Bank report states that “Some of the important messages conveyed by the industry representatives included: - While it is important to develop more robust market models for the future, investors’ confidence can best be built by addressing existing assets under stress”. Put differently, the industry representatives interviewed in the context of this project view the lack of a solution for projects under stress as having a significant adverse impact on the investors’ perception of risk.

Even though the costs of the contagion effect have not been quantified, the magnitude of the investment figures involved causes them to be inevitably relevant. We may carry out a “back of the envelope” estimation of distress indirect costs in PPP by considering the default frequency and the spread over the free-of-risk rate per S&P risk rating.

Standard and Poor’s 2005 presents an estimation of the default frequency in the worst case scenario used to determine the risk involved in a transaction. It tracks the following methodology: “The default study identifies the highest historical default rates across various sectors by rating category over a period of years. The leading global economies, the U.S. and Europe, have not, over the past 15 years, represented a worst-case depression-like scenario, and so the default rates are grossed up to what Standard & Poor's believes to be worst-case levels. Through simulations of such scenarios across various sectors, Standard & Poor's calculates worst-case default frequency for long-term risks across rating category”. The estimated values are detailed in the second column of Table 25.
Table 25: Default Frequency and Spreads

<table>
<thead>
<tr>
<th>S&amp;P Rating</th>
<th>Worst Case Frequency</th>
<th>Spread in basis points</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>5.90%</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>7.10%</td>
<td>50</td>
</tr>
<tr>
<td>BBB</td>
<td>14.80%</td>
<td>115</td>
</tr>
<tr>
<td>BB</td>
<td>55.40%</td>
<td>250</td>
</tr>
</tbody>
</table>

Source: S&P 2005 and Damodaran 2006

The third column shows the premium over the free-of-risk rate—expressed in basis points—estimated by Damodaran for each rating category.

By inverting the S&P value determination logic and comparing the default frequencies with the effect of distress in the PPI database, we may simulate the indirect cost—increase in cost of capital for all other projects—of distress situations in PPP. At an aggregated level, the impact of distress reaches 6.6%, which means that the global rating would be slightly over the relevant value of an AA rating. The effect of distress on the water sector reaches 10.1% which places it between the A and BBB rating categories leading to a spread increase over the free-of-risk rate changing from 50bp to 115bp. By considering an intermediate value, it may be assumed that an intermediate value of about 80bp corresponds to a 10.1 default effect.

Considering a free-of-risk discount rate of 4%, the 80bp will represent an increase in the cost of capital of 20% associated to the probability of distress in the sector. That is to say, 90% of the projects not affected by distress have a 20% increase in their costs of capital basic rate. By considering the investment values (Table 24), distress indirect costs in the water sector are consistent with the project value in distress—16,428 million dollars. The 20% in indirect costs of the 36,382 million dollars in projects without distress must be added to the previous amount which, all together, represents the additional value of 7,200 million dollars. Therefore, the indirect costs associated to distress situations represent 45% of the relevant indirect costs.

Such estimation does not intend to be analytically strict since it is based on extreme simplifications and assumptions of some available basic data. The purpose is to illustrate the way in which the distress situations generate negative externalities which affect the group of projects. In the analysis, we have considered that this negative spillage occurs only in that sector but the effect may be more general and have an impact on the set of PPPs and the economy as a whole.

In this context, it is worth remembering that the nature of PPP projects in infrastructure sectors implies that the government has an ultimate responsibility over the service provision (see BOX 32: ). Thus, distress situations directly and indirectly affect the costs borne by the government. Among these, the contingent tax costs represent an important additional element within the indirect costs of distress situations.

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146 Such ultimate responsibility arises in any legal regime—typically in most of the Latin American countries—based on the classification of an activity as Utilities.
### BOX 32: Government Step-in rights in the UK

In **UK** even in circumstances where there is no default, under a PFI contract the Government retains the right to step in to take over the operation of the services being provided by the PFI contractor:
- If the Government determines that there is a serious risk to the health or safety of the public;
- If the Government determines that there is a serious risk to the environment;
- Where the Government is required to exercise its statutory responsibilities; or
- If the Government determines that the project may have implications for national security.

Where a PFI contractor consistently fails to deliver the services to the standard originally specified and the private sector has failed to remedy this deficiency, the PFI contract will fall into default, giving the public sector the right to terminate the contract and step in to ensure continuity of service delivery. In these circumstances:
- With rare exceptions, projects will revert to public ownership, including the assets and staff necessary to continue to deliver the service;
- Compensation is only due to the private sector for the true value of assets taken over by the public sector less any rectification costs. In extreme circumstances this could result in no payment; and
- The public sector is then able to take ownership of the project itself or retender the opportunity to take over the project to other private sector contractors.

The direct tax costs shall be related to possible guarantees provided by the government in distress projects\(^{147}\). Added thereto, and as a consequence of the spillage effect, there are costs associated to other guaranteed projects where the increase of the cost of capital may lead to an increase in the cost of the guarantees provided by the public sector.

Unquestionably then, reducing the incidence of distress cases and achieving rapid solutions that are perceived as equitable by all stakeholders involved carries major benefits that exceed those directly affecting distressed projects.

### A Taxonomy of Distress Situations

To facilitate the analysis of the various sources and consequences of distress situations in PPP contracts, a distinction may be drawn between three different types of distress, depending on the specific aspect of the contract that is affected: economic, financial and operational. A second distinction needs to be drawn based on the origin of the distress situation, be it endogenous to the company or contract (internal) or caused by exogenous situations (external).

\(^{147}\) The accounting treatment provided by the public sector to PPP projects establishes the measures in which contingent risks may or may not be specified in the public accounts. “The substance of a PPP transaction may suggest that it should be treated as a financial lease. This is the basis of accounting in Australia and the United Kingdom. Under the financial lease approach, limited risk transfer results in: PPP assets being placed on the government balance sheet; PPP investment being treated as public investment; and PPP debt being treated as a government liability. On the other hand, Eurostat decision is that PPP assets should be classified as private sector assets if the private partner bears most construction risk and either most availability risk or demand risks”. Source: Public-Private Partnerships: Basic Considerations, Accounting and Reporting Issues. Presentation by Max Alier Resident Representative in Brazil International Monetary Fund Brasilia, April 26, 2005
The first distinction allows a separate identification of the company’s aspects that are affected by the distress situation in order to thoroughly analyze the possible causes and implications for the service.

A contract can be viewed as being under economic distress when the balance between contractual rights and obligations is materially altered. The key element in a situation of economic distress is a long term imbalance between revenues and economic costs. Given the proposed separation of financial distress and economic distress, the economic analysis completely leaves out the financing structure of the firm.

A situation in which the company is unable to repay its debt (principal and/or interest) is what it is known as financial distress. Financial distress can also present itself in terms of lack of access to capital markets to raise fresh funding even if the company is properly servicing its existing obligations as they fall due.

Operational distress has to do with conditions under which the service is substantially and/or continuously affected, causing the company not to satisfy the contractual conditions of service.

The distinction between internal and external causes is critical for a division of costs and the definition of potential new rules. Every PPP contract necessarily involves the transfer of certain risks to the private sector. Such transfer of risks is key to the generation of incentives for the company to minimize costs and provide an efficient service. The preservation of such incentives requires that the company and, ultimately, its stockholders and/or creditors, cover at least a portion of the costs in any situation of distress caused by actions, behaviors or omissions of the company itself.

Table 26 presents a summary of the possible combinations of distress types and possible origins. It includes the main sources for the different types of distress associated with internal and external causes.

<table>
<thead>
<tr>
<th>Origin Distress</th>
<th>Endogenous</th>
<th>Exogenous</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Agreed-upon</td>
</tr>
<tr>
<td>Economic</td>
<td>Commercial or operational inefficiency affecting income and/or costs, causing economic imbalance in the contract</td>
<td>Changes in relative prices affect the costs of service provision and there is no pass-through provisions</td>
</tr>
<tr>
<td>Financial</td>
<td>Financial decisions - debt structure and denomination - of the company</td>
<td>Increases in the interest rates lead to an increase in the firm’s</td>
</tr>
</tbody>
</table>

148 As opposed to accounting costs, economic costs include a normal return on invested capital.
A further distinction can be made regarding exogenous distress: whether the causes of the problem are covered by the contract or not. Due to the impossibility of drafting a “complete” contract, certain situations that may take place during the contract’s performance might not be contemplated therein. Therefore, it is necessary to determine ex-post among the parties to the contract the liability and distribution of the costs associated to these events.

To prevent these exogenous events not covered by the contract to give rise to conflicts and even to turn into a distress situation, a good contract management policy is required throughout the life of the contract.

Undoubtedly, each particular contract will determine which events may be included and which may not. The initial allocation of risks among the parties to the contract must be set at the design stage thereby reflecting the ability of each party to administer or control a specific risk. Consequently, in a pure price cap tariff regime, the risk of a change in relative prices is contractually allocated to the service provider. On the other hand, in a cost of service regime, the risk is allocated to users.

The acts of god and force majeure events represent the typical example of exogenous events that are not contemplated in the contracts (and in general cannot be contemplated). Given the nature of such events, which are not foreseeable by definition, and if foreseeable cannot be avoided, they are not susceptible to be contemplated in contracts. Actually, the general legislation has, in many cases, prevented or restricted the possibility of taking out these risks.\(^{149}\)

The proposed distinction basically serves analytical purposes, as the practical experiences show that these sources are not independent of one another. It also bears noting that, in general, the persistence of such sources over time causes the others to appear as well.

\(^{149}\) In many legislations, when an event is defined as “force majeure”, the parties to the contract are released from the contractual liability undertaken.
Thus, for instance, a situation of financial distress that causes the company to lose access to the capital markets may, if persistent over time, cause a situation of operational distress by frustrating the investments that are needed to maintain and expand the service. In turn, this would eventually end up producing a situation of economic distress by affecting the service, which can affect collectability and, therefore, the company’s revenue (Figure 1.a).

It is also possible to find the reverse order of causality. A situation of operational distress that occurs as a consequence of a natural catastrophe may create conditions of declining collectability that will limit the company’s access to the capital market to cover its working capital needs or refinance short-term debt maturities. This would end up in greater deterioration and the resulting economic distress (Figure 1.b).

Regardless of the original problem, it is necessary to intervene so as to prevent the problem from spreading and affecting the whole service (see BOX 33).

**BOX 33: Economic crisis in a water company - Colombia**

In the district of Quibdó (Colombia), the water, sewage and sanitation services were performed by Empresas Públicas de Quibdó (EPQ). In January 2005, the Superintendency of Household Public Services (SSPD) took charge of the EPQ for liquidation purposes, due to its non-compliance with regulations and failure to make payroll payments and for the purpose of ensuring service continuity and avoiding negative impacts on public policy and the economy. During this process, the SSPD performed three main tasks:

(i) It sustained service continuity;
(ii) It started a process aimed at analyzing and identifying alternative long-term solutions; and
(iii) It paid $1,066 million as late salaries to resume the service supply.

Consequently, what started as an economic distress situation, caused by an extremely low collection rate, as it was not prevented on time, finally affected the operational and financial areas, thus affecting the provision, quality and expansion of the service. The scarcity of resources did not allow meeting the commercial, operating and labor debts. On the other hand, the late payment of salaries led to the interruption of the service due to a strike called by employees as a form of protest.

The nature of PPPs entails the need to design, implement and maintain fluid communication mechanism between the public and private parties to follow the performance of the company. This will help to prevent and resolve distress situations to avoid that the possible detriment of one of the above-mentioned aspects escalates to a generalized collapse situation of the service. A key tool for this situation is the definition and monitoring of performance indicators for all relevant aspects of the service (in the three contemplated aspects: economic, financial and operating) together with the determination of thresholds upon which the implementation of corrective measures becomes necessary.

The existence of communication means and institutional instances in charge of the supervision of such situations of distress -such as a crisis committee- as soon as they are identified represents a key element. This facilitates the adoption of measures tended to minimize the impact of a possible
negative shock on the set of PPP together with the resulting direct and indirect costs over the service and the economy as a whole.

Similar institutional arrangements are also necessary in many cases to efficiently solve certain problems or situations not contemplated in the contract such as those described in the third column of Table 26. Consultation mechanisms, mediations and other alternative dispute resolution methods may be used to settle those situations that have not been contemplated in the contract design and that may arise during its performance (creation or implementation).

To analyze the external factors that affect distress situations, it is convenient to draw an additional distinction between natural and political factors. Natural factors are those which, in general, are denoted by the concepts of act of God or force majeure. This means that, as we have mentioned before, they are events that cannot be foreseen or, even if foreseeable, cannot be avoided (acts of God). Given the non-controllable nature of such events, the costs thereof should not be borne by the company. Additionally, any actions taken in these cases should focus on mitigating the effects of the event on the service. Typical examples of these are the development and control of emergency and contingency plans for extraordinary natural events.

On the other hand, political factors are the result of government actions that directly or indirectly affect the conditions of service provision. These actions can be specific to the contract or sector (such as the imposition of additional obligations that were not provided for in the original agreements) or general in nature (an import prohibition that affects essential inputs).

Table 27 includes some examples of external – natural and political – causes that can bring about situations of economic, financial or operational distress.

<table>
<thead>
<tr>
<th>Table 27: External causes of situations of distress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Distress</strong></td>
</tr>
<tr>
<td>Economic</td>
</tr>
<tr>
<td>Financial</td>
</tr>
</tbody>
</table>

In practice, problems may occur either simultaneously or consecutively: a natural catastrophe is followed by an erroneous political response that leads to the deepening of the crisis (see BOX 34).
There are two possible approaches to the analysis of situations of distress in PPP contracts: *ex ante* and *ex post*. The first approach - *ex–ante* – focuses on how the various types of distress that can affect a PPP contract can be prevented or avoided. This approach is directly related to the previous stages of analysis of the PPP cycle: PPP design, award mechanism, contract management and control and oversight at the construction and operation stages (see BOX 35 for *ex-ante* treatment of OFWAT’s financial problems).
BOX 35: Preventing Financial Problems

The tariff determination process that OFWAT concluded in 2004 found the water and sanitation sector of Great Britain with a particular financial profile. The development of investment plans required under the legislation in force, which were significantly expensive, caused the sector to face high investment rates for a long period of time. The result: negative cash-flows which called for the need of external resources. This gearing dynamics came to the attention of the OFWAT, which was afraid that the whole sector lost the investment grade rating, which would not only imply an infringement of the financial viability required by the regulator, but would also cause an increase in the cost of capital that the companies in the sector would have to deal with in the future.

For the sake of avoiding the foregoing, the regulator decided to include the financiability payments to the tariff review process, focusing on the firm’s financial ratios. It is then decided to resort to these “financiability payments” associated to the financial ratios of each company, in order to restore the investment grade rating among the companies. The determination of these payments followed a process aimed at defining, on an individual basis, whether the company could maintain a robust risk rating or not. The final determination resulted in granting financiability payments in the total amount of £430m during the 2005-2010 period.

Two different approaches can be identified in this case as well. First, there are actions at the design and award stage that typically affect the contract structure (i.e. defining a formal, specific limit to the degree of leverage in order to avoid a situation of financial distress). Clearly, design aspects directly affect the political risks involved, even though they also produce important effects on the mechanisms for the resolution of distress situations originating in “natural” occurrences.

Second, actions at the construction and operation stages, where the structure has already been defined, focus on overseeing the behavior of the parties to the contract (i.e. under a general contract clause requiring prudent financial management, following up on the company’s debt policy). The contract management strategy is also and important factor during the life cycle of the project to prevent and solve possible exogenous problems, not considered in the contract.

One key element to help manage an eventual distress situation is to develop, and implement contingency plans, which will help allocate responsibilities in the case of an emergency or crisis. In a sense, a contingency plan provides ex-ante with the elements to deal with the crisis ex-post.

The second approach - *ex post* – focuses, once a problem occurs, on identifying mechanisms to contain the problem, thereby preventing it from spreading to the other dimensions and becoming unmanageable, thus leading to the potential cancellation of the PPP.

In order to facilitate dealing with unforeseen situations, the contract should also have certain degree of flexibility built-in. This would give the possibility of looking for innovative and efficient solutions to problems as they arise without the need of renegotiating the contract.

Clearly, flexibility in the contract could give place to the risk of opportunistic behaviour by either party. Instead of working on a cooperative basis, the distress situation contract would be seen as an opportunity for extracting additional rents from the other. Building a good reputation by both parties and having in place a good governance system is therefore crucial to ensure the process is fair and importantly perceived as fair by all other stakeholders.
The main point of these mechanisms is that in their application, implementation and design, the sense of cooperation between the parties should prevail as it represents the essence of all PPP contracts. The adoption of a cooperative perspective by both parties leading to the resolution of conflicts and maximization of “Value for Money” of the project represents the main objective of the PPP adoption for the provision of services.

In this context, a renegotiation can be viewed as the lesser evil. In certain cases this can call for a modification of the existing contract to bring it in line with a permanent change in the conditions of service provision. Where the effects are temporary in nature, permanently amending the contract may prove unnecessary, and setting exceptional rules to apply under emergency conditions (such as a suspension of threshold quality requirements during a weather emergency) would be enough.

**Distress Prevention and Solution**

In this section, we will analyze some of the measures that may be adopted in order to prevent economic, financial, and operational distress.

These measures may be classified into two main categories: general measures affecting all distress dimensions (economic, financial, and operational) and particular measures oriented to prevent or mitigate the effects of some of these particular dimensions.

**General Measures against Conflict Situations**

General measures are mainly related to the design of the PPP contract and to the inclusion of such provisions as this may reduce the probability of a conflict situation, on the one hand, and the setting of rules which may provide for the efficient management of distress situations once they have actually taken place.

In this section, we will consider the information available in the PPI Database for the purpose of analyzing to what extent different mechanisms affect the incidence of distress on PPP contracts. We base our analysis on four variables: government support, support by multinational agency, listing at the stock exchange, and initial payment to the government. In principle, it is reasonable to expect that these instruments might be useful to reduce the risks faced by the project, and therefore, they should contribute to reduce the incidence of the cases of distress.

The government’s direct support to a particular project may be provided through different channels including direct subsidies, exchange rate guarantee, payment guarantee, debt guarantee, etc. BOX 36 contains a description of all the types of direct financial support provided for in the PPI Database.
BOX 36: Government Support

**Government support:** Hosting governments provide financial support to or reduce the financial risk of a project in many ways. The forms of government support tracked by the PPI database tracks are the following:

- **Cash subsidy** - This is when a government agrees to provide cash subsidy to a project. It can be a total lump sum or a fixed amount per new connection, and payments can be either in installments or all at once. Cash subsidies are included in the “investments in physical assets” total for projects in which the private party takes some investment risk/decisions: concessions, divestitures and greenfields.

- **Payment Guarantee** - This is when a government agrees to fulfill the obligations of a purchaser (typically a state-owned-enterprise) with respect to the private entity in the case of non-performance by the purchaser. The most common example of this is when a government guarantees the fixed payment of an off-take agreement (e.g. Power Purchase Agreement (PPA), Water Purchase Agreement (WPA)) between a private entity and the state-owned enterprise.

- **Debt Guarantee** - This is when a government secures the borrowings of a private entity. That is, a government guarantees repayment to creditors in the case of a default by a private entity.

- **Revenue Guarantee** - This is when a government sets a minimum variable income for the private operator; typically this income is from user fee payments by end-use customers. This form of guarantee is most common in roads with minimum traffic or revenue set by a government.

- **Exchange Rate Guarantee** - This is when a government protects a private entity from fluctuations in the value of the local currency. For example, the government will agree to reimburse the private entity for losses on debt services if the value of the local currency dips by, say, 20 percent or greater.

- **Construction Cost Guarantee** - This is when a government protects a private entity from potential cost overruns in the construction phase of a project.

Source: PPI Database Glossary

In principle, all the government’s direct support mechanisms to any PPP Project entail a reduction in the risks undertaken by the private sector. Therefore, this type of support would probable reduce the incidence of distress situations.

The second variable considered is the project support by multilateral institutions. This support may range from a direct investment (equity) to guarantees against political risks. BOX 37 provides a breakdown of all the types of financial support provided by multilateral institutions provided for in the PPI Database.
In principle, the support provided to the project by multilateral institutions has two consequences. In the first place, it contributes to decrease the risks undertaken by the private party upon having explicit guarantees to face some of the risks of the project. In the second place, whenever the support consists in loans or direct investment, such support would probably act in part as a restriction and mechanism to commit the public sector through the need to maintain its reputation before international institutions.

The third variable included in the analysis is the existence of initial payments as part of the process of award of the PPP contract. This would state a specific and concrete commitment of the private sector toward the project, and therefore, it should reduce the risk that the project may be cancelled or submitted to arbitration. In fact, Guasch (2004)\textsuperscript{150} finds that higher-payment bids entail a renegotiation probability which is materially lower than those in which the award is made on the basis of the lower tariff charged to end users.

The PPI database defines the initial payments (Payments to the government formerly known as Investment in Government Assets) as the “Resources the project company spends on acquiring government assets such as state-owned enterprises, rights to provide services in a specific area or the use of specific radio spectrums. License fees, canon payments or divestiture revenues are the common revenue collection mechanisms.”

\textsuperscript{150}Guasch (2004 - Table 6.12) reports a probability of renegotiation which amounts to the 60% when a lower tariff is awarded, and which amounts just to the 11% when it is awarded following the highest payment criterion.
The fourth variable under analysis consists in assessing whether the company holder of the PPI contract is listed at the stock exchange. As it was analyzed in section V.b, in principle this should act on the probability that the project may be under distress on the one hand, via the existence of higher information requirements and the existence of clearer supervision mechanisms. On the other hand, the distribution of a less concentrated ownership should act in favor of the project’s stability since they induce less opportunism from the government.

Table 28 shows an estimation of the incidence on the distress probability (cancellation and arbitration) of these four variables, as assessed in terms of number of projects for each of the four sectors under analysis. Even though in respect of the exception of the variable that the project may be listed at the stock exchange, the remaining variables are quantitative variables (that is to say, they have the support amount), in this analysis we have focused on treating them as a dichotomy (whether or not such particular support exists).

The government support has positive effects on the energy, telecommunications, and transportation sectors, while in the water and sewerage sector, the existence of government support increases the probability of distress (from 8.5% to 21.2%). The support provided by multilateral institutions has strong positive effects on transportation and it has moderate positive effects on the telecommunications sector. Its effect on water and sewerage and on the energy sector is clearly negative.

The same pattern of behavior is found when the variable considered is the initial payment. It has positive effects in telecommunications and transportation, and negative effects on the energy and water and sewerage sectors, though in the latter, the variation is scarcely significant. The fact that it may be quoted in the stock market, presents negative effects only in the water and sewerage sector, where the risk of distress is almost twice as much for the companies listed at the stock exchange as compared to non-listed companies. With respect to the three remaining sectors, the effects are positive and highly significant.

Table 29 shows the same analysis per sector (energy, telecommunications, transportation, and water and sewerage), as measured in terms of committed investment.
The results, at this point, are also varied. The support provided by the government is positive for the four sectors. Government support is marginally significant only in the case of the water sector. In the water sector, the probability of projects distress with no government support amounts to 31.2% of the risk, and it drops to 30.7% whenever the project has some kind of government support, which does not constitute a significant difference.

The support provided by international organizations becomes positive in the transportation sector (where the support provided by multilateral institutions reduces the risk of distress from 10.7% to 3.3%), but it remains negative for the other sectors. Again, the effect is even clearer in the water and health sector, where the support increases the risk of distress from 18.8% to 58.8%.

The initial payment has a positive effect with the exception of the energy sector, where the impact is negative (with the risk of distress increased from 6.9% to 12.4%). The effect is also negative, though the difference is not significant, in the water and sewerage sector. On the other edge, the most visible positive effect occurs in the transportation sector with a drop in the risk of distress from 12.7% to 3.5%, seconded by the telecommunications sector (from 9.0% to 3.3%).

Quotation at the stock exchange has positive and highly visible effects in all sectors, except for the energy sector in which the effect is negative. This would reflect the positive effect that the market supervision generates on projects thus contributing to reduce the incidence of distress.

It is worth highlighting that the information contained in the chart discloses the wide variety of effects among sectors. Only in the transportation sector itself, the effect is the one expected for the four variables, if we considered investment amounts and number of projects. With respect to the remaining sectors, the effects are even more varied, thus exerting a positive influence, in some cases, and showing contrary behaviors in other cases.

From the analysis of the PPI Database, as presented in Table 28 and Table 29, it may also clearly be observed that there is a strong difference in the water sector’s behavior. This is the sector which the highest distress proportion, and at the same time, it is the sector where the risk mitigation mechanisms analyzed seem not to significantly contribute to reduce its incidence.\textsuperscript{151}

The results obtained in relation to the effect of the government support and of the support provided by multilateral institutions on the risk of distress are grounded on some antecedents in literature. Guasch (2004) finds that the support provided by the government to the projects implemented in Latin America increases the risk of renegotiation.\textsuperscript{152}

\textsuperscript{151} The more “political” nature of this sector would explain the results obtained at least in part.

\textsuperscript{152} Guasch 2004 page 89.
In turn, the analysis of the exit of international operators in the water and sewerage sector (IDB 2007) is highly critical of the role placed by international institutions in the sector when it allows extremely high indebtedness levels: “These companies’ access to finance by multilateral institutions, such as the IDB, the World Bank and the International Financial Corporation, without the pertaining increase in equity contribution, could have led to this situation. Among other consequences, this situation influenced on a lower corporate capital risk involved and it encouraged opportunist conducts, as well as a higher exposition to devaluation, since part of the loans were guaranteed by the governments. Once the outcomes have been observed, it is clear that the contracts should have included restrictions in this sense. It would seem that all the parties underestimated the political and financial risks of the investments in the sector.”

Irrespective of the antecedents to the results presented, three lines of analysis may be followed to explain why there is no positive effect in all the cases pertaining to the variables under analysis. The first argument consists in the existence of sample selection bias. The support provided by the government and by international institutions is not randomly distributed among projects; instead, it is focused on certain types of contracts. On the basis of this assumption, these contracts would have little economic feasibility at the beginning, or no economic feasibility at all, and this explains the higher incidence of distress in this subset.

The second argument is related to the existence of moral hazard problems by the institutions. Once the project has government support or once it is supported by multilateral institutions, managers have fewer incentives to behave efficiently, which leads to higher risks and results in a higher incidence of distress projects.153

The third explanation is related to the mere fact of considering certain dichotomic variables in our analysis instead of the relative significance of support in relation to the amount of the investments.

1.5.1 Managing economic distress

Economic Equilibrium

The special technological features of infrastructure sectors hinder the operation of entry and exit mechanisms that, in competitive markets, govern the return on investment. Since these sectors are natural monopolies, there is no entry or exit of competitors from the market and, therefore, adjustment does not operate automatically. Consequently, it is the regulator’s duty to preserve the contract’s equilibrium, thus avoiding that the monopolist gets an excessive return (monopolistic rent) but also allowing efficient investors to recover the economic costs of service provision, including a reasonable return on the invested capital.

153 Laffont, Guasch and Straub (2003) develop a contract renegotiation model and they allege that contract provisions are internal; therefore, the self-selection and moral risk problems arise out in the estimations
Formally, the condition to meet in order to achieve economic sustainability of the service -at the same time that monopolistic rents are avoided- can be expressed as follows\textsuperscript{134}:

\[
K_i^0 = \sum_{n=1}^{N} \frac{IR - CO - I - T \pm Tr}{(1+r)^n} + \frac{K_f^N}{(1+r)^N}
\]

Where $K_i$ represents the initial capital of the period; $IR$, revenues; $CO$, operating costs; $I$, investments; $T$, taxes; and $Tr$, transfers from the Treasury, which may be positive -explicit subsidies- or negative -payment of concession fee-. These elements represent the free cash flow received by the firm. The opportunity cost of capital $r$ is located in the denominator.

The second term represents payment received at the end of period $N$. It is expressed separately in order to ease the analysis of the existence of different rules of termination payment ($K_f$) and/or duration of the concession ($N$), variables that may be used as instruments to restore equilibrium in distress situations. Therefore, sustainability of the firm calls for the firm’s future cash flow discounted using the opportunity cost of capital rate to be equal to the invested capital.

This sustainability equation is also known as economic equilibrium of contract since it summarizes all the economic elements involved in a contract. From the point of view of the service provider, contractual obligations are represented by the operating and maintenance costs ($CO$) and the investments ($I$) that the firm has to carry out in order to meet service needs. At the same time, the revenue ($IR$) that the firm will obtain for service provision represents contractual rights.

The cost of capital ($r$) is a value -to some extent exogenous- that represents the opportunity cost of capital. In other terms, the return that would be obtained by an investor in an alternative use of the capital with similar risks level.

**Economic Distress**

A contract is considered under economic distress when the equality between contractual rights and obligations is substantially altered by endogenous or exogenous causes. In other words, economic distress arises when there is sustained difference between expected revenues and economic costs associated to the contract. To become a distress situation this difference has to be substantial and permanent rather than a temporary misalignment.

Two clarifications are worth noting. First, given the separation of financial distress and economic distress, in this (economic) analysis we have completely left out the company’s financial structure.

The second relevant aspect is the dynamic, long-term nature of the economic distress problem. The fact that the above-explained condition of equilibrium is not met at a given moment may go without visible consequences for a relatively long time. If the imbalance is negative, only over time its effects will be evident, as it becomes impossible to attract capital to the sector. If the

\textsuperscript{134} In terms of cash flow, this equation is the same as fixing revenue to cover operating and maintenance costs, depreciations and a return on the invested capital. To check this equivalence, see Green-Rodríguez Pardina 1997.
imbalance is positive, and there are monopolistic rents, there might not be evident effects on the remaining contract dimensions, however, in clear detriment to service users.

It is also important to note that given the nature of these services, it is impossible in practice to distinguish between monopolistic rents and legitimate efficiency gains of the company. The information asymmetry that characterizes every contractual relation of this kind renders it impossible to determine the effective nature of the disequilibrium. This creates an additional difficulty when analyzing concrete situations and accurately establishing whether it is necessary to apply certain corrective measures or not.

Sources Of Economic Distress

Economic imbalances may be caused by either internal causes that are endogenous to the company or by causes external to it, and can affect revenue, costs or both. In turn, external causes may be the result of political decisions or changes in the conditions of service provision.

Table 30 provides some typical examples of the various causes affecting costs or revenue. The distinction between internal and external causes is critical, as the origin of the disequilibrium should be made a key element in designing the solution to the distress situation.

<table>
<thead>
<tr>
<th></th>
<th>Revenue</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>Commercial inefficiency causes an excessively high uncollectable rate</td>
<td>Operational inefficiency causes costs higher than the efficient costs accounted for in the tariffs</td>
</tr>
<tr>
<td>External</td>
<td>Prohibition of service disconnection for nonpayment negatively affects collectability</td>
<td>Increases in specific taxes or costs as a result of environmental regulations</td>
</tr>
<tr>
<td>Natural</td>
<td>Lower demand than expected causes a reduction in expected revenue</td>
<td>Increases in the prices of raw materials (e.g. oil)</td>
</tr>
</tbody>
</table>

Internal causes are primarily related to inefficiencies of the company itself and, accordingly, the firm must face the consequences—in terms of a lower return on its capital. The perception of negative effects by the company as a consequence of its low performance is fundamental to the entire system of incentives for productive efficiency. This does not mean that the problem can be ignored and that there is no need for corrective measures. Under certain circumstances, the authority’s failure to take measures may cause the disequilibrium to spread to the remaining areas (financial and operational) negatively affecting service provision to the users.

On the other end are the situations brought about by external causes that are political in origin, such as modifications of the environmental regulations or the imposition of obligations or restrictions on the service due to political or social reasons. In these cases, the negative effect on the company’s equilibrium is entirely due to changes in external conditions and, accordingly, the company should not bear the related costs.

In the middle ground lie the imbalances associated with natural external effects such as declines in demand or increases in the costs of inputs that are outside of the company’s control and materially affect the service. In these cases, it is necessary to assess the extent to which such changes are ordinary risks underlying the business which, accordingly, should be assumed by the company (for which purpose they should have been accounted for ex ante in the cost of capital)
or, alternatively, that they lie outside of ordinary situations and thus amount to a significant change in the conditions of service provision.

The allocation of risks in the contract establishes, from the very beginning, which party shall bear the variations in the conditions of service provision. In many cases, this risk may be allocated to third parties who are not parties to the contract through insurances that cover the variations in extraordinary events or key variables which may adversely affect the service. In such cases, the responsibility for acquiring said insurances and their financing represents a key aspect that should be determined in the original design of the contract.

In some cases, the distress situation arises due to a significant difference between the original assumption of the estimations and the effective values once the project is completed. In this case, the logic would indicate that the party that established the original values should bear all the costs linked to the estimation mistake (see BOX 38 including Transantiago case).

**BOX 38: Transantiago**

PPP contracts may explicitly determine some business management variables. Many operative distress situations may originate in wrong estimations of such variables.

That was the case which took place after the implementation of the newly public transport system known as “Transantiago” in the city of Santiago de Chile. After this system was implemented in February 2007, the concessionaires of buses services were unable to meet the citizen transportation demand that caused the whole system to collapse. The origin of the distress situation may be found in a significant demand underestimation by the system planning organization. The authorities revealed that the original calculation underestimated the demand by, at least, 14.5%.

The bus fleets of the concessionaires were determined on the basis of the demand estimation made by the government before the bidding process. A total of 5,600 buses was estimated for the whole fleet. At the time of implementation, the system had 5,000 buses. In view of the problems affecting the system, the contingency measures adopted rapidly increased the number of buses until reaching the number pre-defined by the plan. Notwithstanding that, the system still provided a deficient service.

Finally, once all original implementation conflicts were settled, a series of measures were addressed so as to alleviate the situation. Among them, the purchase of 1000 buses and the construction of 1700 additional bus stops stand out. Both measure entail extraordinary expenditures not originally contemplated in the financial analysis of the project and involve an injection of 290 million dollars by the government to Transantiago in order to cover the deficit of the system during the year 2007.

Even though useful from the analytical standpoint, the distinction discussed above is not always easy to draw, as in the real world companies may suffer imbalances in their economic equation as a result of multiple causes affecting them simultaneously, with complex effects on costs and revenue.

Macroeconomic crises are a typical example of an external cause affecting both costs and revenue. Another distinguishing feature of such crises is that they cannot be easily attributed to the political and natural causes which, in most cases, converge in a series of elements triggering the crisis. Their main effects are discussed in BOX 39.
In view of the breach of equilibrium, it is then necessary to analyze different alternatives to reformulate economic equation under the new conditions.

The first issue to consider consists in identifying the risk allocation assumed by investors so as to evaluate to what extent the changes in the economic environment constitute a substantial deviation from the original economic equilibrium.

**BOX 39: Macroeconomic Crisis**

Macroeconomic crises produce important negative effects on infrastructure sectors, as well as on the rest of the economy, breaking in the short run the equilibrium.

In the first place, the strong impact of devaluation processes associated with these crises causes a sharp increase in the cost of imported inputs, which represent an important part of service costs. The rest of the costs also increase due to the rise of inflation coming along with devaluation and crises.

Another highly important element lies in the increase of the cost of capital faced by the firm as a consequence of the rise of the country’s sovereign risk. This has an immediate effect in the case of cost of service regulation or on the new tariff period in case of price cap regulation. Crises strongly affect demand as well. The increase of unemployment and the fall of income *per capita* cause a negative effect on the demand faced by the firm. In many cases, collection problems may also appear, particularly in those sectors where service interruption for non-payment is limited due to social, political or technological reasons.

Financing restrictions faced by the firm also affect its consumers and produces an indirect effect on service access. If imposed financing limitations, many users will not be able to afford the investments they need to make to connect to the network (internal pipes, for example) and therefore, will not access the service even when the infrastructure is completed.

In addition to these general tariff-level-related problems and in the context of strong crises, other problems may arise more related to tariff structure. While in normal times, the regulator may opt to apply structures that privilege allocative efficiency, in a crisis context, he may find that they are particularly unsuitable to face affordability problems.

At the same time, fiscal crisis causes that if transfers from Treasury are to be made in favor of the firm, the same will be disrupted or, at best, delayed by the government.

The result of the impact of these combined effects represents such a breach of the firm’s economic equation that equilibrium cannot be restored in the short run by applying the traditional regulatory mechanisms. Indeed, under a cost of service regulatory regime, the regulator cannot perform a tariff review due to the increase in costs.

If governed by a price cap regulatory regime, the situation is not much better, since it is probably unfeasible to stick to the indexation rules originally agreed upon. Furthermore, if indexation is applied, the acceleration of inflation and both the direct and indirect effects of devaluation would most likely result in social and politically unviable tariff increases.

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155 The increase in risk also brings about credit restrictions leading to financial distress which in turn could become an economic problem.
In this respect, it should be pointed out that a direct mechanism to assess the risk assumed by investors at the time of investing is the analysis of the cost of capital approved by the regulator during the last tariff review process, if any. Following both international standard regulatory practices and generally accepted regulatory principles, the service provider remuneration includes a return on capital that reflects the risks assumed by investor.

Analyzing then the way in which the cost of capital was determined, we can get an objective answer to the question about the extent to which “the risk considered in the return on capital has been exceeded by the resulting conditions of risk or whether the current situation is still within reasonable conditions of risk?”

It is worth mentioning that the nature of this problem is purely empiric and not conceptual. The idea is to identify the conditions of risk incorporated in the parameter values used to determine the cost of capital during the last periodic tariff review. This is a good example of a non-contracted situation, which requires of decisions to be made ex-post as part of the contract management process.

Typically -although this clearly differs in each particular case-, variations in the demand level and the possibility of facing an increase in collection problems are contracted variables. In some cases, these fluctuations are to be assumed by the firm as part of the business risk. This would be the case for sectors such as water or electricity distribution in which demand can be predicted with a relatively good degree of approximation and the company has some control over it. For other cases, such as traffic demand in a highway, in which demand is less predictable and the company has little or no control over it, the public party would assume the risk, at least in part.

However, in most cases each particular risk will affect the way in which the regulator determined the cost of capital. Devaluation constitutes an illustrative example of this (see BOX 7).

**BOX 40: Currency Devaluation Costs**

In the event of an unanticipated change in the exchange rate, two different situations can take place. If regulator used a cost of capital in domestic currency in his estimation (which is generally higher than the cost in dollars), shareholders have to assume the effect since tariffs explicitly included the fact that their assets were remunerated in domestic currency.

On the contrary, if regulator estimated a cost of capital in dollars (which assuming a proper analysis and all other relevant revenue and costs variables have been treated consistently is usually lower than the cost in domestic currency), users have to face the effect of devaluation. In this case, the firm is implicitly given foreign-exchange insurance since it is given a cost of capital in foreign currency, which results lower than the cost of capital in domestic currency.

On the other extreme, measures such the non-application of the indexation rules included in the agreement or the regulator’s refusal to perform a tariff review envisaged in the legal framework constitutes a change in the rules of the game and cannot be considered as business risks that the firm has to assume.

156 This question was formally raised in a public hearing in the context of a renegotiation of concession contracts in San Juan, Argentina.
**Instruments to Restore Equilibrium**

The economic-equilibrium formula presented in the preceding section directly provides the set of instruments available to restore equilibrium in any situation in which such equilibrium has been altered.

On the revenue side, action is possible both on the level and on the structure of tariffs to correct the disequilibrium. Depending on the origin of the problem, the adaptation of the tariff structure may be a key action to mitigate the adverse impact of tariff level adjustments on the poorer, more vulnerable sectors of the population.

The required revenue (IR in formula I) can be broken down into tariffs (prices) and quantities consumed by each tariff category. Formally,

\[ \text{IR} = \sum_{i=1}^{N} \left( CF_i \cdot QC_i + CV_i \cdot CM_i \right) \]

where: IR is the required revenue, CF_i is the fixed charge for customer category i, QC_i is the number of customers in category i, CV_i is the variable charge for customer category i, and CM_i is the average consumption for category i.

Adjustment on the revenue side can be performed such that only the tariff level is affected or, alternatively, such that the tariff structure is affected. Generally, structure adjustments combined with variations in the average tariff – tariff level – allow to better fulfill the various regulatory objectives (sustainability, allocative efficiency and equity. Thus, for instance, a tariff adjustment protecting the poorer strata of the population can prove to be a more efficient method to work out an economic distress problem without adversely affecting equality. This could keep the PPP from working out a problem at the expense of creating a new one – political in nature – by increasing the tariffs paid by the poorer strata of the population.

A change in the tariff structure increasing the fixed charge relative to the variable charges reduces the demand risk faced by the company and, consequently, may prove to be functional in helping mitigate a distress situation. However, this could impair the conditions of equity, since a higher fixed charge would cause the average tariff for those customers with lower consumption levels to increase relative to those with higher consumption levels. There are no magic solutions and the various alternatives should be carefully assessed, taking the potential trade-offs into consideration.

Transfers from (or to) the government are the second instrument available to affect the revenue (expenditure) of the company in order to restore the economic equilibrium of the contract.

If the transfer is made by the company to the government, the effect is the same even though the risk of interruption associated with a fiscal crisis is reduced. The company can withhold a portion of the transfer – upon express or implied permission by the government – to temporarily cover some economic gap associated with an external crisis.\(^{157}\) (see BOX 41). In other words, because

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\(^{157}\) Of the three concessions held by the SUEZ group in Argentina, the Cordoba concession, which made provision for a payment by the company to the government, was the only one that was successfully renegotiated after the macroeconomic crisis that hit Argentina in 2001-2002. Following the renegotiation, Suez transferred its interest in Aguas Cordobesas to a local group. The other two concessions, namely Aguas Argentinas and Aguas de Santa Fe,
the government is associated to the project through a stake in its cash flow, it bears a portion of the costs generated by the distress situation.

**BOX 41: Water concessions in Argentina**

At the beginning of the '90s, Argentina set forth a foreign exchange convertibility plan according to which the Argentine peso was pegged to the American dollar by a 1:1 parity. The concession of drinking water and sanitation services was awarded within this framework at a federal and provincial level, including, among others, Córdoba and Santa Fe, where the same international group (SUEZ) was the successful bidder.

In 1999 a profound economic and financial crisis broke out and led to the government’s downfall and the repeal of the convertibility plan in 2002, which resulted in a significant depreciation of the local currency. Simultaneously, the utility tariffs were pesified and frozen and, due to the devaluation, the concessionaire’s foreign debt service and the costs of tradable assets increased, thus causing the breakdown of the contracts’ economic equilibrium. From that on, a long contractual renegotiation process began.

The differences in contracts and the award mechanism explain the differences in the results of these two companies’ renegotiations. The company in Santa Fe had been awarded on the basis of the lowest tariff offer for end users. In Cordoba, in turn, a bidding mechanism based on a formula with several elements had been applied, being one of the most important, the annual payments made to the government by the concessionaire. As a result, Aguas Cordobesas was paying about 25% of its revenue to the government as a concession fee.

After long lasting negotiations, SUEZ group dropped the concession in Santa Fe and filed a suit against Argentina before the ICSID on the grounds of breach of contract. The concession in Córdoba was renegotiated and SUEZ sold its interest to a local group.

If there are direct transfers between the government and the company under a PPP contract, the government is more willing to solve conflicts. In fact, it has clear incentives to be on good terms with the company and keep the concession ongoing, as it participates in its cash flow, thus avoiding long negotiation processes, which also end up affecting the service even more.

Furthermore, this type of contract gives the government greater freedom to negotiate and an additional tool to address the crisis and restore the concessionaire’s equilibrium, as it may always cancel the company’s obligation to pay the fee so it may redirect said resources to cover the deficit generated by the crisis.

In general, the existence of direct transfers between the government and the company in the context of a PPP contract provides greater leeway for a solution to potential situations of economic distress. If payment is made by the government to the company, the government can adjust the transfer in order to restore equilibrium in the short term without directly affecting service users. However, it should be kept in mind that, in the context of a fiscal crisis, any such transfer from the government often poses a risk, as it may be disrupted as a result of fiscal restrictions.
On the costs side the main instruments for restoring the equilibrium relate to investment levels and timing, elements affecting O&M costs (such as quality levels and service obligation targets) and contract duration and termination rules.

The amounts and timing of the investment are effective instruments to modify the equilibrium of the contract. Not only the amount of investment but also its timing matters to cash flows and hence to tariff levels needed to ensure the equilibrium.

Modifying service conditions affecting operation and maintenance costs is a second set of instruments available from the cost side to affect the economic equilibrium of the contract. A change in quality of service minimum standards following a crisis due to a natural disaster is a clear example of this. Given the high capital intensity of these sectors this instrument will be of limited effect as O&M costs usually have a relatively low incidence on total economic costs of the service.

The regulatory regime in many cases contemplates a price cap with automatic pass-through of some costs to users. Under this regime, some of the costs, which are not under the control of the operator, are excluded from the cap formula. Any increase in these costs is automatically passed on to the users through a tariff adjustment. The adoption of this type of regime is generally justified by the existence of non-controllable costs by the operators combined with the need to introduce incentives. The more volatile or unpredictable these non-controllable costs are, the more important the need to adopt a regime that reduces the risks for the operator. The specific degree of pass-through defines how much of this uncertainty can be passed on to users.

Even though not stemming directly from the equilibrium equation formula, the modification of the rules for the pass-through of costs is yet another alternative instrument to modify economic equilibrium. To the extent that tariffs are adjusted to account for costs variations, the risk of such changes is shifted from the company to the end users.

In view of the long construction periods and of the long life and specificity of the assets in the infrastructure sectors, contract duration and termination rules are important instruments. Amortization and non-amortized investments at the end of the contract duration rules also affect the economic equilibrium. Unclear or unfavourable rules may suppress any incentive to invest too close to the end of the contract period. Adapting these rules, for example through an extension in the concession to compensate for unpredictable low demand, is an important instrument.

**Particular Measures against Economic Distress**

The main instrument to respond to potential economic distress situations is to include -in the regulatory framework or in the PPP contract itself- specific rules contemplating the possibility of extraordinary reviews that enable adjustments in the event of unforeseen events not taken into account when setting the current tariffs.

The need for these rules clearly depends on the current tariff system. In cost of service (or rate of return) regulations this rule is not necessary and therefore, the review decision is internal. Tariffs

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158 See Green Pardina 1997 for a discussion on pass-through mechanisms in price cap regimes and Tenenbaum … for applications to the energy sector.
are adjusted every time an imbalance appears between tariffs and costs or, what is the same, when
the rate of return moves away from the capital opportunity cost. These situations are featured as
economic distress; thus, this type of problems could not appear in cost of service regulations\textsuperscript{159}.

<table>
<thead>
<tr>
<th>Country</th>
<th>Sector</th>
<th>Exists</th>
<th>Special features</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Water</td>
<td>YES</td>
<td>Where circumstances have a substantial adverse effect on the appointed business</td>
</tr>
<tr>
<td></td>
<td>Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Electricity</td>
<td>YES</td>
<td>An event that is beyond the reasonable control of the provider</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Capital expenditure required exceeds 5% of the value of the regulatory asset base</td>
</tr>
<tr>
<td>Brazil</td>
<td>Electricity</td>
<td>YES</td>
<td>Should there be significant alterations in the concessionaire’s costs... the Granting Power may, at any time, review tariffs for the purpose of maintaining the economic and financial balance of the contract</td>
</tr>
<tr>
<td>Colombia</td>
<td>Electricity</td>
<td>YES</td>
<td>Act of God or Force Majeure causes that seriously compromise the company’s financial capacity</td>
</tr>
<tr>
<td>Chile</td>
<td>Water</td>
<td>YES</td>
<td>As an exception and mutually agreed upon where there are founded reasons for important changes in the assumptions made for the assessment</td>
</tr>
<tr>
<td>Peru</td>
<td>Water</td>
<td>YES</td>
<td>Should the economic and financial balance be broken</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Variation of at least 5% in costs (+) revenue (-) or investment (+)</td>
</tr>
<tr>
<td></td>
<td>Electricity</td>
<td>YES</td>
<td></td>
</tr>
</tbody>
</table>

Source: \textit{MacroConsulting} on the basis of regulators’ information

In contrast to the cost of service regimes, the central feature of regulatory mechanisms by incentives (price cap) consists of periodical tariff reviews externally set, generally every four or five years. In these cases, it is of the essence the existence of specific rules contemplating the possibility of tariff reviews in the face of events substantially modifying the economic balance of the contract. Table 31 summarizes the tariff review rules and their main features in different countries and sectors.

As shown in Table 31, rules may be general so as to contemplate imbalances due to different causes, leaving the need of making adjustments at the regulator’s discretion. Alternatively, rules may define specific variation thresholds in certain variables, which are measured as the difference between the values projected in the last review and the real values observed.

Setting specific thresholds in the variation of certain variables (as in the case of the water sector in Peru and the electricity sector in Australia) is a way of delimiting the regulator’s discretion as well as the risk of variation in costs or revenue the company must face before the economic imbalance is considered to have been substantially affected.

\textsuperscript{159} Guasch (2004) presents clear evidence to this effect. The likelihood of renegotiating concessions in cost of service regulations is 20%, whereas such likelihood in cap prices regulations is 56%.
A common element to all these rules—and central to the generation of incentives to productive efficiency that price cap regimes look for—is that extraordinary review causes relate to the existence of external events affecting the economic balance. Events controlled by the company are implicitly or explicitly excluded from these reviews.

Another common aspect is that reviews are asymmetrical, given the fact that they are designed to cover just the contingency consisting in the companies’ unfavorable changes. This relates to generating the regulators’ commitment to ensure that extraordinary reviews will not be used to obtain benefits the company may get as a result of efficiency levels higher than those established in ordinary reviews. In this sense, it is interesting to see how the rule works in Chile, where extraordinary reviews must be “mutually agreed upon”.

In cases where the PPP’s revenues come—in whole or in part—directly from the public sector, the logic of the review processes is similar: to protect the company from changes beyond the company’s control and, at the same time, to avoid compensating the company due to the public sector’s own failures. Payments reviews in these cases may be based upon price benchmarks or on comparable cost estimations for the public sector (“public sector comparator” PSC).

**Economic Distress in Latin America: Empirical Evidence**

A situation of economic distress requires that the project’s internal rate of return be substantially and consistently lower than the opportunity cost of capital. Even though this analysis needs to be performed for each specific PPP, there are some regional studies that provide an idea of the possible relevance of this problem as far as concessions are concerned.

The study performed by Sirtaine, Pinglo, Guasch and Foster (2003) is based on a sample of 34 concessions in the period 1991–2001, and its purpose is to “estimate the returns that private investors in infrastructure projects in Latin America really made on their investments, to assess the adequacy of these returns relative to the risks taken, and the impact that the quality of regulation had on those returns relative to the cost of capital.”

The evidence provided by Sirtaine et al shows that, in general, the projects in the sample presented returns below the opportunity cost of capital. On average, historical returns for the concessions studied in the period (IRR, no TV) were negative. Only upon the inclusion of adjustments to past returns in the analysis in order to factor in expected returns (management fees, future values and adjustment of investments) do the results reveal values that are similar to the projects’ opportunity cost. The values for each sector are provided in Chart 4.

**Chart 4: Returns and Cost of Capital in Latin America**
The included measures of returns are as follows:

- IRR no TV: IRR without terminal value
- IRR w/fees: IRR and management fees
- IRR with FV: IRR with future value of cash flows
- IRR with fees & Inv: IRR with management fee and investment markup adjustments
- IRR with TV: IRR with terminal value
- WACC: the company’s (weighted) Cost of Capital

According to these authors, and contrary to popular belief, the financial returns of private companies in the infrastructure sectors have been modest and, in many cases, below the opportunity cost of capital. On average, the energy and telecom sectors present better returns than the transport and water and sewerage sectors.

These results presented by Sirtaine et al, are, at first glance, consistent with the empirical relevance of distress projects per sectors discussed in section II. It restates the differences in sectors and the particular features of the water sector, which shows greater situations of economic disequilibrium.

**Use of the Various Instruments in Distress Solutions: Evidence from Latin America**

In practice, all the instruments available to the regulator are used in the adaptation and renegotiation of public-private participation contracts. Tariff increases, changes in the amounts or the time profile of investments, direct pass-through of costs or changes in payments to the government, etc. are all the elements that come into play in redefining the economic equilibrium during the renegotiation of a contract. Although the correlation between distress and renegotiation is not perfect, the analysis of the relative incidence of each such variable in the renegotiation in Latin America presented by Guasch (2002) in a study of over 1,000 Latin American concessions is a valid proxy of the available tools for distress situation. The outcomes are illustrated in Table 32.
As it is evident from Table 32, tariff adjustments and changes in investment amounts and timing are the most widely used instruments in the renegotiation of concession contracts in Latin America.

Another aspect that stands out strongly from the evidence provided by Guasch is that the vast majority of renegotiation processes are favorable to the service providers, to the detriment of users. Thus, the number of renegotiations that led to tariff reductions is four times lower than the number of those that led to increases. A similar proportion applies to the postponement and delaying of investments (for the company’s benefit) and the acceleration of investment targets (for the benefit of service users).

### 1.5.2 Managing financial distress

In the preceding section we discussed the various aspects that make up economic distress; in doing so, we expressly left out the company’s financing structure. We will now analyze the capital structure in two dimensions: the first one is concerned with the debt to equity ratio; the second one has to do with the degree of concentration in equity capital.

This analysis will not focus on the problems that may potentially come up in direct connection with such structure. The analysis will focus on the various factors that determine the company’s funding and the potential problems that might arise in connection with different levels of debt or degrees of concentration in stock ownership.
Debt Theories

In this section, we will address the financial structure in terms of debt and equity capital. The starting point for this analysis lies with the various theories that seek to explain the financial structure of a company. In a seminal work, Modigliani and Miller demonstrated that, under certain ideal conditions, the capital structure – the proportion of debt to equity capital – does not alter the value of the company.

However, in the real world, companies present material differences in their financing structure. Several theories explain the determination of an optimal structure: tax advantages, aspects of corporate governance rules, signals, and so on. Even though a detailed discussion of these theories is beyond the purpose of this work, below is a brief summary of the main arguments.

A first explanation is based on the tax savings associated with debt. The differences in the tax treatment accorded to debt and equity capital give the company an incentive to use debt financing exclusively. Since, from the tax perspective, interest payments are considered costs (whereas dividends are not), by using debt financing the company can increase its return on equity capital. It should be noted that this effect is specific to each tax regime, which is why the effects vary over time and from one country to the next.

An alternative explanation is based on corporate governance problems. The separation of ownership and management of the company’s resources, which is critical to any modern economic organization, creates principal-agent problems. This requires that incentives be created in order that managers (agents) will act in the best interest of investors (principal), not just in their own interest. Debt financing causes the managers’ actions to be monitored – as managers must prove to the lenders that they have projects that are economically and financially viable. From this approach, debt then becomes a control instrument applied by the principal to the agents.

A third explanation is based on debt as an instrument of “signaling.” According to this theory, the capital structure is a mechanism through which signals are sent to the market regarding the company’s financial strength. There is a “pecking order” under which investment financing through retained earnings would be indicative of greater strength, followed by debt and, lastly, new stock issues. By issuing new debt, a company undertakes to pay interest. This is a sign that the company is in a stable financial position. Conversely, a decline in debt would be perceived by the markets as a sign of financial weakness.

The other side of the various benefits of debt as a source of financing – whether tax-related, as signals or as incentives – has to do with the costs associated with a structure featuring a high level of debt capital. The first cost is the risk of bankruptcy faced by the company; this is an increasing function of the amount of debt. To the extent that there are bankruptcy costs, there is a point beyond which an increase in bankruptcy risk carries expected costs that exceed the benefits of taking additional debt.

Additionally, a company with a high level of debt forgoes some flexibility in its decisions, as a relatively high portion of its future revenue is already set aside to service interests and principal.


Myers & Maluf 1984 Corporate Financing and Investment Decisions when the Firms have information that Investors do not have – Journal of Financial Economics Issue 13 1984
This commitment of future income creates relative illiquidity, which restricts the company’s capacity to respond to changes in circumstances or market conditions.

Considering the various explanations of the benefits and costs of debt, there are a series of factors inherent in each company that will determine the optimal degree of leverage: size, the industry in which the company operates, the variability of its income and costs, the ownership structure, etc. Normally, the optimal degree of leverage will include a mix of debt and equity even though there are exceptional cases in which the capital structure presents only one component (see BOX 42).

**BOX 42: Pure Debt Company**

Glas Cymru is a single purpose company formed to own, finance and manage Welsh Water. It is a ‘company limited by guarantee’ and because it has no shareholders, any financial surpluses are retained for the benefit of Welsh Water’s customers.

Under Glas Cymru’s ownership, Welsh Water’s assets and capital investment are financed by bonds and retained financial surpluses. All day-to-day activities are carried out by specialist contract partners employed by Welsh Water following a competitive procurement process. The Glas Cymru business model aims to reduce Welsh Water’s asset financing cost, the water industry’s single biggest cost, and improve service delivery by employing the best contract partners for each distinct activity in the business.

Source: Glas Cymru’s webpage

The legal form adopted by PPP will also directly affect the company’s financing structure. There are noticeable differences between the outline following the project finance logic and those in which the private sector participation usually occurs within the framework of a traditional corporation that follows the corporate finance logic.

To a certain extent, the adoption of one option or the other depends on the technological features of the project. Green field projects, which constitute a self-contained technical and economic unit such as a highway, a water treatment plant or an electric power generation unit, typically adopt the project finance format. Whereas, projects involving multiple investments in an interdependent network such as the water or electricity distribution generally operate in the form of corporations that follow the corporate finance logic.

The legal environment of the project can also affect the choice between corporate or project finance. Faced with the risk of an uncertain legal or regulatory framework a company may choose the project finance alternative as a means of limiting its liability.

These different governance, logic and risks of the alternative project structuring possibilities imply that the optimal capital structure between them may substantially vary. Standard & Poor’s provides a series of reasons upon which the cost of debt is –ceteris paribus– lower in project finance (see BOX 43).

**BOX 43: Standard & Poor’s Debt Evaluation**
Regulated utilities also have their own inherent characteristics that directly and indirectly affect their financing structure. On the one hand, because they are monopolies with limited market risk, the stability of their revenue and costs allows them to have a higher degree of relative debt (since their risk of bankruptcy is lower).

In terms of governance, the fact that the company is regulated would provide incentives for higher debt levels in order to limit regulatory action. According to these models, as the regulator needs to avoid bankruptcy costs, the higher debt level restricts the tariff levels it can apply to the company.\footnote{162 These incentives can be analyzed in a broader context in which the company’s financing structure affects its own relationship with other firms (competitors, vendors, clients). For a general discussion, see Tirole (2006) Chapter 7.}

In their work on the capital structure of regulated companies, Spiegel and Spulber state:

Empirical evidence suggests that the regulated firm’s capital structure affects the allowed rate of return on equity. Besley and Bolton (1990), in a survey of 27 regulatory agencies and 65 utilities, find that about 60 percent of the regulators and utilities surveyed believe that an increase in debt relative to equity increases regulated prices. Hagerman and Ratchford (1978) show that, for a sample of 79 electric utilities in 33 states, the allowed rate-of-return on equity is increasing in the debt-equity ratio.

In the same vein, Sanyal and Bulan (2005) show how the deregulation of the electricity market reduces the degree of leverage by increasing the risks perceived by the companies. A comparison of the evolution of leverage in the US and the UK allows the authors to maintain that “deregulation policies and key firm attributes that contribute to a greater competitive threat to firms, greater variability in earnings and a decline in asset values result in lower leverage ratios”.

To sum up, the companies’ capital structure is the result of a complex set of factors that directly and indirectly influence managerial decisions, including tax-related aspects, governance problems, market structure, financial market conditions, etc. In the case of PPPs, this set is expanded and strengthened by the technological and institutional features of the infrastructure sectors.

Regulatory concern over the financing structure, the costs of potential bankruptcy aside, stems from the incentives given to managers in a high-debt context. An excessive leverage ratio may
provide incentives for the companies in two different directions: to make high-risk investments (that are potentially high-profit investments) or to minimize expenditures by adopting a sub-optimal level of investments. Such concern was openly expressed in a recent document authored by UK regulators: \(^{163}\)

“In the years preceding the 2004 Ofwat price control review, commentators had expressed concerns about the adoption by a number of regulated water companies of highly geared capital structures. This trend culminated in the creation of Glas Cymru, a company with no share capital, in 2001. The concerns expressed at the time were that regulators would be less able to act to protect consumers if highly geared companies were to become subject to financial distress. As a consequence, risk might be transferred from shareholders and lenders to consumers. Ofwat sought to make it clear that it would not allow this to happen. Nevertheless a number of commentators made proposals for revisions to the regulatory approach designed to address those concerns.”

Likewise, Correia de Silva et al (2004) present an analysis of the capital structure of the energy (electricity and gas), water and transport (infrastructure and services) sectors for a sample of 121 publicly-traded companies in 16 developing countries. The work reveals a strong variation in the leverage level from one sector to the next. The evidence presented in that work also reveals a growing trend in the leverage ratio. These authors also found that after the 1997 Asian crisis, the operators adjusted their capital structures differently in the various regions.

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity</th>
<th>Gas</th>
<th>Water</th>
<th>Electricity</th>
<th>Gas</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>22.2</td>
<td>13.4</td>
<td>7.5</td>
<td>19.2</td>
<td>25.0</td>
<td>41.9</td>
</tr>
<tr>
<td>1998</td>
<td>41.3</td>
<td>20.8</td>
<td>24.4</td>
<td>24.6</td>
<td>28.5</td>
<td>36.4</td>
</tr>
<tr>
<td>1999</td>
<td>35.6</td>
<td>26.5</td>
<td>21.6</td>
<td>23.2</td>
<td>32.5</td>
<td>40.0</td>
</tr>
<tr>
<td>2000</td>
<td>42.7</td>
<td>31.6</td>
<td>19.2</td>
<td>25.9</td>
<td>27.3</td>
<td>27.6</td>
</tr>
<tr>
<td>2001</td>
<td>39.6</td>
<td>30.2</td>
<td>26.0</td>
<td>28.4</td>
<td>32.9</td>
<td>17.8</td>
</tr>
<tr>
<td>2002</td>
<td>42.9</td>
<td>27.4</td>
<td>48.6</td>
<td>34.5</td>
<td>29.1</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Source: Estache Correia da Silva – Table 8

The difference in financing structure among sectors simply reflects the strong connection between the economic features of a project and its financing method. The economic features in general and the temporal profile of cash flows in particular, represent key elements at the time of structuring a company’s financing or project in an optimal way.

Correia de Silva et al found that the results obtained are partially dependent on the measuring method, i.e. on whether book values or market values are used (see Table 33). In this regard, they note that it is necessary for the regulators to take market values explicitly into consideration in their analysis: “An increase in the relative importance of debt in the financing of public services can be, and has in the past been, an issue that only appeared too late on the radar screen of the regulators. The evidence reviewed here would suggest that it is important for regulators to monitor both book and market valuations of the assets.”

Hand in hand with this difference comes the problem of the different valuation alternatives for the asset base. In general, the different asset base valuation methods will affect the debt/equity ratio.

\(^{163}\) OFWAT – OFGEM 2006
The choice of new replacement values vs. historical values affects the value of the assets and, accordingly, the financial ratios that depend on this value, such as leverage.\textsuperscript{164}

A particular aspect of the problem of the valuation of the firm’s asset base has to do with the criterion used to select the private partner, as this may, in some cases, materially affect the financial structure.\textsuperscript{165} In particular, the choice of a lower-tariff or higher bid for the stock package basis will directly affect the valuation of the asset base and thereby the debt/equity ratio.

Where the selected basis is the higher payment for the concession, \textit{i.e.} there is a direct initial transfer in exchange for the right to the PPP contract, the amount secured at the bidding process is, in general, factored into the initial asset base of the concessionaire. This, for instance, has been the selected method in the electricity, gas and water sectors in the United Kingdom.

Alternatively, where the awarding basis is the lowest tariff, in an extreme case there may be no equity capital at all. Water concessions in Argentina (particularly the concession for the Capital City and Greater Buenos Aires area, \textit{Aguas Argentinas}) are an example of this. Each of these two alternatives determines a different value for the initial asset base, thus affecting the capital structure.

An additional issue arises where debt obligations are transferred to the concessionaire as part of the PPP contract. The amount (and market value) of the transferred debt is one further element that affects the initial situation, and this can influence the concessionaire’s access to credit, particularly over the first few years of the contract term.

\textbf{Financial Distress}

Having briefly analyzed the main determining factors of the companies’ capital structure and the problems that such structure may create in the context of a PPP, we are now ready to move on to the discussion of the conditions under which the company can face a situation in which it cannot repay its debt (principal and/or interest) or has limited access to capital markets to raise fresh funding. This condition is what is usually known as financial distress.

Based on the classification explained in Section I, financial distress situations can be classified depending on whether they originate in aspects that are internal or external to the company. In turn, the latter group is subdivided into natural events and political factors. Table 34 provides a brief summary of the different types of distress to be taken into consideration.

<table>
<thead>
<tr>
<th>Origin</th>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Political</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Origin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>Inefficiency of the company in financial structure decisions</td>
</tr>
<tr>
<td>External</td>
<td>Restrictions caused by direct government action affecting the company’s capacity to repay its debt or access new financing funds</td>
</tr>
<tr>
<td></td>
<td>Change in capital markets affecting the economy as a whole and restricting the companies’ access to credit</td>
</tr>
</tbody>
</table>

\textsuperscript{164} On the different alternatives for the valuation of the asset base, see …

\textsuperscript{165} Such analysis is not crucial for green field projects where there is no initial asset base to be considered.
Another relevant distinction to be taken into consideration in the analysis of financial distress situations is that such situations can affect the capacity to repay existing debts – the most serious ones – or become evident only as a limitation of the company’s capacity to raise additional funding. This distinction becomes particularly important in developing countries, as the financial market limitations that are typical of these economies may cause serious credit rationing affecting the companies in spite of their satisfactory indicators and their timely and adequate fulfillment of existing financial obligations.

Even though a restriction limiting access to new loans appears to be less serious, it is worth noting that many companies have a medium- and short-term debt structure that is to be periodically refinanced. This is a common occurrence in developing markets ordinarily lacking long-term debt instruments (20 or 30 years). In these situations, the impossibility to access new loans translates into the impossibility to repay existing debt, as the company would have refinanced such debt in normal situations.

Financial distress situations that are internal in origin have to do with poor decisions made by the company in connection with its financing structure or any debt component (see BOX 44). Assuming exchange rate risks (through debt denominated in a currency other than the currency of their revenue without proper insurance) is a typical example of an internal decision which, in a scenario of devaluation of the exchange rate, can create a situation of distress due to reasons attributable to the company itself. For example, in order to preserve the incentives for efficiency, usually one of the main goals pursued by PPPs. In such cases, the company – or, basically, its shareholders – must bear the cost of insolvency, including, in extreme cases, the costs of potential bankruptcy.

**BOX 44: Internal financial crisis**

From its privatization in 2000 and until August 2002, the Companhia Energética Do Maranhão (CEMAR) showed a positive trend in its service quality indicators. Moreover, in 2000 CEMAR developed an action program tending to decrease its level of losses. However, the internal management of the company’s financing structure gave rise to some doubts. By the end of 2001, CEMAR faced liabilities for R$ 640 million in total.

In August 2002, the National Electric Power Agency (ANEEL) ordered the administrative intervention in CEMAR arguing that the economic-financial feasibility of the company was doubtful in the short and in the medium term. The intervention’s purpose was to protect the public interest and to preserve a proper service for users, thus ensuring concessionaire’s compliance with statutory and contractual obligations.

The administrative intervention lasted 21 months until April 2004, when, finally, the concession was transferred to a new management. This way, ANEEL intervened to shorten the distress cycle and prevent that the initial financial distress adversely affects the maintenance and expansion of the electric power distribution system, thus triggering operational distress.

On the other end of the spectrum, a change in the tax rules adversely affecting the cost of financing and leading to insolvency would be a clear example of an external cause of political origin. Another example of the same kind is found in prohibitions to remit funds abroad that keep the company from repaying interest or principal on a debt obligation undertaken abroad. Clearly
enough, in those cases, the situation is the result of causes that are entirely unrelated to the company and, accordingly, the company should not be punished for them.

A middle-ground case would be that of situations of financial distress brought about by natural external causes such as a financial or macroeconomic crisis (either domestic or international) hitting the economy as a whole (see BOX 45).

BOX 45: Financial Crisis in Argentina

The financial crises that affect the country’s economy as a whole are an example of a natural external factor. In crises scenarios, such as the one experienced by Argentina in 2001-2002, companies suffer an extremely quick and deep financial deterioration. The Table shows the steep fall in the interest coverage ratio for the three electricity distribution companies serving in the Greater Buenos Aires, before and after the crisis.

<table>
<thead>
<tr>
<th>Firm</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edenor</td>
<td>4,4</td>
<td>4,5</td>
<td>0,8</td>
<td>0,7</td>
</tr>
<tr>
<td>Edesur</td>
<td>8,8</td>
<td>8,9</td>
<td>0,4</td>
<td>-0,4</td>
</tr>
<tr>
<td>Edelap</td>
<td>1,3</td>
<td>1,6</td>
<td>0,0</td>
<td>-1,1</td>
</tr>
<tr>
<td>Consolidated</td>
<td>4,98</td>
<td>4,99</td>
<td>0,50</td>
<td>0,20</td>
</tr>
</tbody>
</table>

As it can be noted, the strong devaluation and default of public debt at the beginning of 2002 resulted in a severe deterioration of the firms’ financial situation, which turned from showing ratios with highly acceptable values before the crisis to showing ratios with critical or even negative values after devaluation.

Given the nature of financial markets, it is often difficult to clearly identify the cause of a particular distress situation. In the face of changes in financial markets that keep the company from refinancing its debt obligations, identifying the extent to which this is the result of the company’s inefficiency (by taking short-term debt) or external restrictions (inexistence of medium- and long-term markets) is not always a possibility.

The manner in which each company will be affected by the crisis is also dependent on the company’s degree of leverage. Faced with a restriction on access to capital markets, highly-indebted companies have less flexibility to finance their investments using equity capital, as an important portion of their revenue is already set aside to repay debt obligations. Equity financing allows greater flexibility through an adjustment in the timing of dividend payments. The situation of financial distress then relates to the external occurrence and the company’s financing policy, which makes it difficult to attribute responsibility therefore to a single cause.

Regardless of the origin of the distress situation, it is important to remember the need to minimize the impact on the service and the users that may be associated to the spread of the financial crisis.

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166 This option entails costs in terms of a higher cost of capital and a lower external supervision (associated to the leverage).
to the rest of the aspects (operative and economic) of the service. Many issues are important in order to prevent and limit the prospective negative effects of possible financial unbalances.

The first issue is the role of creditors during the crises. Particularly, there is a concern about the rights that they may exercise to limit the actions of management and, even, to take over the business control. The key point consists in prioritizing the continuity of the service over other economic or financial considerations.

Another point that must be pointed out is the need to adopt a cooperative attitude between the public and private parties that allows them to efficiently overcome the financial problems. In this respect, it is important to remember the residual nature of many of these risks for the public sector, which in most cases retains the ultimate responsibility for the provision of the service. This calls for the need to adopt a cooperative approach to cope with the crisis in line with the idea of “partnership” that must always prevail in PPP projects.

The cooperative approach must be adopted but shall not mean that the private sector is released from its liability and the associated costs. This approach must consider all possible measures that may lead to the solution of the financial distress situation. In this sense, it is worth taking care that as a consequence of the measures adopted towards a solution of the financial crisis, the government does not assume more risks than the ones originally contemplated in the contract. In case that the public sector takes greater risks, this situation should be necessarily reflected on the private sector’s compensation (see BOX 46).

**BOX 46: Renegotiation of roads in Chile**

Due to the highway traffic decrease resulting from the economic recession undergone by Chile during the 1998-2000 period, the firms that held the highway concessions asked the Chilean government to renegotiate their contracts. The government offered them contracts that guaranteed an annual growth in traffic of x% (where x = 4, 4.5 or 5% at the concessionaire’s option) over the contract’s life. In case that traffic did not grow by that X%, the concessionaire was entitled to extend the concession period for up to 10 years to collect the guaranteed earnings. Then, the firm could benefit from diversifying the risk with the Chilean government by paying an “Insurance Premium”.

In return for these guarantees, the government received $171 million, or 7.8% of the guaranteed revenues, as additional infrastructure funded by the concessionaire.

A final issue that must be considered is the need to monitor the companies’ financial health and to try, whenever possible, to prevent finance distress situations from taking place by anticipating measures that may help companies to cope with the problems as soon as they arise.

The possibility of foreseeing situations of financial distress plays an important role in the financial literature and in the professional life of risk analysts. Next section presents the methodology generally used for this type of analyses.

**Financial Distress Risk Measures**
The indicators or ratios represent one of the most important instruments used by analysts to assess and monitor the firms' financial performance. For many years, they have searched for measures that allow foreseeing, with certain anticipation, the probability that a firm will undergo a situation of financial distress.

Various studies developed during the first half of the last century revealed the power of certain indicators to predict bankruptcy, with measures of performance, liquidity and solvency being the top-performing indicators. These studies were followed by Altman’s work (1968), intending to select a set of indicators that would consistently allow a statistically supported recommendation. Altman analyzed bankruptcy cases by estimating a multivariate equation under the format of the multiple discriminative analysis and suggested the adoption of an indicator – the Z Coefficient – that measures the probability of bankruptcy of a company.

**Development of the Z Model**

To develop the Z Model, Altman used a sample of 66 companies, splitting the group into two subsets containing an equal number of members each. Group 1 consisted of a set of companies which, as per Chapter XI, had gone bankrupt in the period 1946-1965. On the other hand, Group 2 included those companies that were still going in 1966.

As to the five independent variables he selected, these were (i) the working capital to assets ratio, (ii) retained earnings to assets, (iii) Return on Assets (ROA=EBIT/A), (iv) solvency (E/D) and (v) asset turnover (ATO=S/A), stated in econometric terms as follows:

\[ Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \]

As regards the reasons to select these five indicators, Altman notes that the decision to use the Working Capital to Assets ratio is the result of the fact that such measure is usually a decisive factor of the company’s liquidity and, as such, a decisive factor at the time of bankruptcy. Specifically, the studies revealed that, for companies that started experiencing operating problems, their liquidity levels relative to the size of assets started to decline abruptly.

The Retained Earnings to Assets indicator is what Altman refers to as one of the new indicators; according to the author, its relevance lies in that, assuming a stable dividend policy, it is possible to infer the life of the company. Accordingly, firms that are many years old have large amounts of retained earnings, whereas newer companies do not, where the average life of the firms is a critical element to predict bankruptcy.

The third indicator is return on assets before tax; such indicator reveals the firm’s operating performance. In fact, ROA is nothing other than the accounting version of the value of the marginal product of capital; as can be expected, the lower this measure, the closer to the interest rate on the debt (via increased leverage due to equity deterioration) the higher the probability of bankruptcy. Naturally, it is this analysis that leads to the choice of the fourth indicator, the

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167 The use of financial ratios during PPP construction and operation stages to monitor the firms’ performance is discussed in detail in module 3.

168 Some works, as the ones prepared by Smith and Winakor (1935) and Merwin (1942), show that firms that went bankrupt did not follow a uniform pattern in the indicators over time. Beaver’s work (1967), which developed a univariate model, intended to determine the probability of a firm’s bankruptcy. Then, taking the Debt to Assets ratio, it could be foreseen if a suspension of payments was going to take place within five (5) years and, if any, the number of years for the situation to come.
leverage ratio, which is presented via its inverse expression, the solvency ratio, in order to keep it consistent with a positive sign. Lastly, also connected to the determination of ROA, there is asset turnover; together with the margin, this explains the former.

\[
Z > 2.99 \text{  - “Safe” Zone}
\]
\[
1.8 < Z < 2.99 \text{  - “Grey” Zone}
\]
\[
Z < 1.80 \text{  - “Distress” Zone}
\]

<table>
<thead>
<tr>
<th>X1, Working Capital/Total Asset (WC/TA)</th>
</tr>
</thead>
</table>
The working capital/total assets ratio, frequently found in studies of corporate problems, is a measure of the net liquid assets of the firm relative to the total capitalization. Working capital is defined as the difference between current assets and current liabilities. Liquidity and size characteristics are explicitly considered. Ordinarily, a firm experiencing consistent operating losses will have shrinking current assets in relation to total assets.

<table>
<thead>
<tr>
<th>X2, Retained Earnings/Total Assets (RE/TA)</th>
</tr>
</thead>
</table>
Retained earnings (RE) is the term used to describe the account that reports the total amount of reinvested earnings and/or losses of a firm over its entire life. In addition, the RE/TA ratio measures the leverage of a firm. Those firms with high RE, relative to TA, have financed their assets through retention of profits and have not utilized as much debt. This ratio highlights either the use of internally generated funds for growth (low risk capital) or OPM (other people’s money) - higher risk capital.

<table>
<thead>
<tr>
<th>X3, Earnings Before Interest and Taxes/Total Assets (EBIT/TA)</th>
</tr>
</thead>
</table>
This ratio is a measure of the true productivity of the firm’s assets, independent of any tax or leverage factors. Since a firm’s ultimate existence is based on the earning power of its assets, this ratio appears to be particularly appropriate for studies dealing with credit risk. Furthermore, insolvency in a bankrupt sense occurs when the total liabilities exceed a fair valuation of the firm’s assets with value determined by the earning power of the assets.

<table>
<thead>
<tr>
<th>X4, Market Value of Equity/Book Value of Total Liabilities (MVE/TL)</th>
</tr>
</thead>
</table>
Equity is measured by the combined market value of all shares of stock, preferred and common, while liabilities include both current and long term. The measure shows how much the firm’s assets can decline in value (measured by market value of equity plus debt) before the liabilities exceed the assets and the firm becomes insolvent.

<table>
<thead>
<tr>
<th>X5, Sales/Total Assets (S/TA)</th>
</tr>
</thead>
</table>
The capital-turnover ratio is a standard financial ratio illustrating the sales generating ability of the firm’s assets. It is one measure of management’s capacity in dealing with competitive conditions.

Source: Altman 2002

As to the results, the Z score means that when a company, considering its financial indicators, receives a value above 3 (three), the company is a healthy firm, whereas if such value is below 1.8, the company will end up entering bankruptcy. As to the 1.8-3 open interval, it is recognized as a gray zone.
Such an indicator represents a fundamental tool to monitor the financial health of a company and help in the early detection of possible financial distress problems. The early recognition of these types of problems is crucial to the adoption of corrective measures aimed to minimize the financial distress and, at the same time, prevent its spread over the firm’s economic health and operative performance.

**Degree of Concentration of Capital**

Up to this point, we have analyzed the company’s capital structure in terms of debt and equity. There is another relevant dimension from the financial point of view since it affects the structure of incentives and the behavior of the project’s private partners: the degree of shareholding dispersion. When the PPP project is designed on the basis of an existing company and not a new project (green field), a problem with the way in which the private capital is introduced arises.\(^\text{169}\)

In this regard, there are two alternatives that are fully illustrated by the experiences of Chile and the United Kingdom, on the one hand, and Argentina, on the other. Both in the United Kingdom and Chile, private participation was incorporated through the “retail” sale of stock in stock markets. On the contrary, in Argentina, the government sold a “Buyout Package” in the companies to a single strategic investor through a bidding process.\(^\text{170}\)

A choice of either one of these mechanisms has its pros and cons. The sale of stock in the stock exchange allows, under certain circumstances, the induction of efficient behavior by the companies through the discipline imposed by capital markets. If there is a fairly efficient capital market, the risk of a “hostile takeover” guarantees a certain degree of minimum efficiency and discipline on the part of corporate managers. The mass ownership of stock by the public achieved through the public trading of stock provides the private participation process with greater political assurance by rendering it more credible, as the more dispersed the ownership of the stock the higher the political cost of potential opportunistic conduct by the government to the detriment of service providers.

The main negative aspect to be taken into consideration in connection with this form of private participation is the existence of a marked principal-agent problem. Given that most of the stock is acquired by passive investors (such as pension funds, investment funds or small private investors), the company’s management is now in the hands of a few stockholders and the existing managerial officers of the company. Their tendency to act in their own interest rather than in the best interests of the company and its stockholders (i.e. their principal) may lead to serious inefficiencies that are boosted if there is no efficient capital market that will operate as an effective limitation to this sort of behavior.\(^\text{171}\)

\(^{169}\) As we have already explained, the adoption of one mechanism or the other greatly depends on the technological features of the project. Typically, projects involving highways, water treatment plants or electric power generation units, adopt the green field format. On the contrary, the private participation in water or electricity distribution or urban transport mostly takes place in pre-existed companies.

\(^{170}\) In general, all Latin American experience has followed the same pattern adopted by Argentina, except for certain local variations, where the private sector is introduced as a strategic partner.

\(^{171}\) The technological complexity of these sectors aggravates the problem by rendering control of the agents’ actions by their principal more difficult. In other words, the increased asymmetry of information increases the possible rent associated therewith.
Hardly could the difference between Chile and the United Kingdom in this regard be any more illustrative. The marked development of the capital market in the United Kingdom led, once the legal restrictions existing over the first few years were left behind, to an active process of mergers and acquisitions. In Chile, where the capital market is much weaker, there has been no serious limitation on the actions of a few investors.\footnote{According to Bitrán [1993] this would be the case with Chile’s electricity sector. Notwithstanding the arguments put forth by this author, it is possible to at least partially justify the privatization methodology in the light of the behavior of these companies. The dynamic action of the groups created as a result of the privatization, which showed a true Schumpeterian spirit by expanding their business in the entire region, might justify the internal inefficiencies in the Chilean sector.}

Given that the degree of development of the capital market in Argentina is closer to the Chilean case than it is to the UK’s, the selected private participation methodology, which consisted in awarding the Buyout Package in the various business units to be offered through a bidding process, seems to be appropriate (see BOX 47).

**BOX 47: Concessions Mechanisms in Argentina**

| The selected mechanism consisted in creating corporations with different classes of stock. Class A stock represented the Buyout Package, and was sold in block through a bidding process. Class B stock was intended for subsequent sale in the capital market and remained in the hands of the State until the decision to sell was made. Lastly, Class C stock represented the portion allocated to the Programa de Propiedad Participada [employee stock ownership plan] allowing the participation of workers in the concession process.  
The eligibility requirements to bid for class A stock included having a qualified technical operator (which could or could not be a member of the investing consortium) and minimum financial requirements to be satisfied by both the investing consortium and each member thereof. Furthermore, the holders of the Majority Shareholding were prevented from changing their stake and/or selling their stock in the first 5 years. Thereafter, they were allowed to do so only upon prior approval by the Regulatory Authority. |

Whereas the technical operator requirement guaranteed that the investors would be adequately qualified, from the technical perspective, to perform certain and effective control of the operating aspects, the financial requirements were intended to guarantee that the controlling group had sufficient economic-financial capacity to meet its contractual obligations. The aim was to secure the participation of strategic investors who, having secured control of the privatized companies, would act to optimize the company’s efficiency (as the principal-agent problem disappears or, at the very least, is minimized).

The option adopted also tried to include the disciplines associated to market forces by dividing the concession into shorter terms, when the concessionaire’ buyout package was put up for bidding again (see BOX 48).

**BOX 48: Management Periods in Electricity Distribution in Argentina**

| In the case of electricity transmission and distribution, the aim was also to include a certain degree of capital market discipline by dividing the concession, which was granted for a period of 95 years, into 10-year management periods. Through this mechanism, the majority Buyout Package is periodically put up for |

\footnote{According to Bitrán [1993] this would be the case with Chile’s electricity sector. Notwithstanding the arguments put forth by this author, it is possible to at least partially justify the privatization methodology in the light of the behavior of these companies. The dynamic action of the groups created as a result of the privatization, which showed a true Schumpeterian spirit by expanding their business in the entire region, might justify the internal inefficiencies in the Chilean sector.}
bidding, thus allowing “competition by the market” while serving as an explicit mechanism of acceptance of the new tariff schedule.

This solution, which is intended to avoid the principal-agent problems associated with the sale of stock in the stock exchange, while explicitly introducing periodic mechanisms of market competition, appears as a novelty in terms of forms of privatization that seems to provide an ingenious solution to the trade-off between strategic investors and capital market discipline.

This combination of a strategic investor (through the sale of the buyout package) and, at the same time, the preservation of certain market discipline (via the management periods) appears to be an intermediate solution that aims to minimize the efficiency costs and losses associated to “pure” alternatives.

This strategy, however, is not free from inconveniences. The first potential problem presented by the management periods mechanism is the marked information asymmetry between the incumbent and the remaining potential bidders. Even though the regulations make explicit provision for the appointment of an overseer by the regulator to “guarantee that bidders are provided with the most detailed and accurate information…” the advantage of having direct knowledge of the company by being in charge of its operation can hardly be equated.

Given that taking part in a bidding process is costly (both in terms of time and of financial resources), the advantages enjoyed by the incumbent can operate as an effective barrier to the participation of other interested parties.

Empirical evidence of the PPI Database shows that PPP firms that are quoted in the stock exchange can be associated with a strong reduction in the incidence of distress within the sample firms. Without being conclusive on the convenience of adopting one criterion or the other, this would give grounds to the positive role that market supervision plays, as well as the discipline that the risk of a hostile buyout through the stock market imposes on the management.

**Measures against Financial Distress**

A first approach to financial distress problems -from the regulatory point of view- is to impose controls to the companies’ potential indebtedness or requirements to maintain a certain credit level.

These measures -which must ideally be taken when designing the PPP contract- establish *ex ante* the type of behavior allowed to the company. This reduces the need to monitor the company’s specific behavior, since it is assumed that if the company is well rated or its indebtedness is at a certain level, there are no financial distress risks.

As per a recent report of OFWAT – OFGEM in the United Kingdom:

“...The regulatory framework includes license conditions that have been put in place to ring fence the regulated business from the activities of the wider group. For many regulated businesses this includes a requirement that they should **retain an investment grade issuer credit rating**. These arrangements have been designed to reduce the risk of financial distress by constraining the conduct of the company, ensuring its resources are...”

---

173 Section VIII.a shows in details the impact that this and other measures have on the incidence of distress situation in PPI database.
not diverted and that it is not exposed to undue risk. Their presence helps to reassure the regulator that companies remain in a position to finance their functions and consumers interests are not adversely affected by a company’s capital structure.\(^{174}\)

In the United Kingdom the three main credit rating agencies are FitchRatings, Moody’s Investor Services (MIS) and Standard & Poor’s (S&P). Categories representing the lower risks are rated as “of investment grade”, whereas the higher risk ratings are considered “speculative”. In order to define a company’s rating (or financial assets), credit rating companies take into account qualitative and quantitative factors including some of the main financial ratios.

As per credit rating companies, imposing a restriction that requires that companies maintain an “investment grade” rating may be seen as a decentralization (or subcontracting) method of the regulatory control function. With this rule, the Regulator delegates in credit rating companies the detailed analysis of the firms’ situation and financial prospective\(^{175}\).

It is important to point out that this measure has –at least in its original format- clear applicability limitations in less developed economies. Most developing countries are not considered “of investment grade” by credit rating agencies, thus, it is unlikely that companies carrying out their business in developing markets could reach such rating\(^{176}\).

Other countries impose restrictions on the indebtedness policy through monitoring specific indexes. In some cases, those indexes are accompanied by allowed limit values, while in others only the indexes are set and it is said that such indexes must have reasonable values. Some of these examples are listed in Table 35.

<table>
<thead>
<tr>
<th>Country</th>
<th>Indicators</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Water; Electricity; Investment Grade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Railway; Debt/RAB; Investment grade</td>
<td>&lt; 85%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; BBB-</td>
</tr>
<tr>
<td>Brazil</td>
<td>Electricity; Gross Margin; Net Margin; ROA; Leverage</td>
<td>Not set</td>
</tr>
<tr>
<td>Colombia</td>
<td>Electricity; Operational Margin; EBITDA/Financial expenses; Current ratio</td>
<td>&gt; 0; &gt; 1.2; &lt; 1</td>
</tr>
<tr>
<td>Australia</td>
<td>AER (Australian Energy Regulator)</td>
<td>Creates an assessment system similar to the one of credit agencies</td>
</tr>
<tr>
<td>Chile</td>
<td>Water; Leverage; Management indicators</td>
<td>Not set</td>
</tr>
</tbody>
</table>

\(^{174}\) OFWAT – OFGEM 2006 (emphasis added).

\(^{175}\) Note that –when assessing the financial situation of a regulated company, these agencies also indirectly assess the regulator’s performance.

\(^{176}\) Tentatively, no company can sustain a higher rating than the country where it is operating, since the country risk of such country constitutes a floor for the company’s business risk. The logic behind all this is that the country can “transfer” its potential financial problems to the companies through more restrictions or limitations to transfers abroad. See…
Another measure tending to preserve the companies’ financial integrity, which is contemplated in most PPP contracts in infrastructure sectors, is to impose restrictions to carrying out activities that are outside the scope of the concessionaire or licensee company’s purpose.

These mechanisms of service “ring fencing” are especially important in the context of a financial distress situation. As discussed, in financial distress situations, managers are encouraged to invest in highly risky projects with expected high profitability hoping to reverse the adverse situation. In order to avoid this type of behavior—which could worsen the company’s situation—it is of key importance to prevent companies from developing other activities.

**Bankruptcy or Liquidation**

Bankruptcy is a process by which debtors are rehabilitated and given a chance for a new financial start. The underlying philosophy behind bankruptcy is that when debtors cannot possibly fulfill their financial obligations they and their creditors should accept the losses and begin anew.

One of the key elements of a bankruptcy procedure is that it shifts decision-making about crucial aspects of the company from management to a bankruptcy court. This means a new and important actor appears in the process. Even the powers of the regulator become limited by the decisions of the bankruptcy court.

PPP contracts usually contain specific provisions leading to the termination of the contract in case of the utility provider’s bankruptcy or liquidation. These clauses intend to preserve the public sector’s assets and avoid such assets from being liquidated as a consequence of the company’s bad administration.

The rule may take different forms, depending on the format of the contract as regards assets ownership, whether they be built by the company or transferred as part of the PPP. With very few exceptions—electricity sector in Argentina—concessions and other PPP contracts do not transfer ownership of the assets, but lease them for use to the private sector.

Even if these specific clauses did not exist, the nature of the service in most infrastructure sectors—essential services of high social impact—imposes the need to take the general interest into account when reorganizing these companies. The experience in the US with utilities bankruptcy cases illustrates this fact (see BOX 49)

**BOX 49: Utility Bankruptcy in the US**

<table>
<thead>
<tr>
<th></th>
<th>According to the company’s size</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Peru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>ROE</td>
<td>Not set</td>
</tr>
<tr>
<td></td>
<td>ROA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest coverage</td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>Liquidity</td>
<td>Not set. Periodic report mentions situations with and without problems.</td>
</tr>
<tr>
<td></td>
<td>Creditworthiness</td>
<td></td>
</tr>
</tbody>
</table>

Source: Self-made report on the basis of regulators’ information
What did not happen is the lights did not go out. Moreover, the businesses continued to run, in at least one case the business was rationalized into a larger economic unit. Factories were not shut down, union contracts were not abrogated or terminated, there was no fire sale of assets resulting in vast loss of investment and earning power. These companies emerged from the process with assurance of profitability and looking very little different, operationally, in terms of their markets and in most other ways. It was a trip to the chiropractor or the fat farm, a long and expensive trip, but not to the oncologist.


Contracts provide for the public sector’s right to designate an auditor or administrator to manage the company and ensure the service continuity while long-term entrepreneurial and institutional measures are taken (for instance: rebidding the concession in the water sector in Chile).

### 1.5.3 Managing Operational distress

Operational distress directly affects a company’s ability to provide the goods or services it had undertaken to produce. Just as it occurs with the other categories, it is important to draw a distinction between internal and external causes, on the grounds that this differentiation affects the allocation of responsibilities and such potential costs as may arise out of decreases in the service quality or availability.

| Table 36: Operational Distress - Categorization per Origin and Type |
|---|---|---|
| Origin | Type | Categorization |
| Internal | Chronic | Sustained and constant quality deterioration or failure to attain coverage goals previously agreed upon |
| | Crisis | Failure of any of the system’s critical elements - attributable to the operation or lack of maintenance – which may materially affect the service |
| External | Natural | External event – act of God – which affects service provision or the company’s physical assets |
| | Political | Situations of social or political turmoil affecting service provision or the company’s assets |

Internal distress is originated on the basis of the company’s actions or omissions, as a result of a deficient management or an improper asset management. In this context, it is worth drawing a distinction between situations of gradual and constant deterioration (chronic) and such situations as arise as a sudden crisis in relation to a particular event.

Within the category of situations classified as chronic situations there are those situations in which, as a result of mismanagement or of the lack of investment there is a quality drop in the service provided by the company. The permanent follow up and monitoring of service quality
indicators constitute the best mechanism which may be applied for an early detection of this type of problems. Given the technological features of the infrastructure sectors – the long life of assets, high capital intensity—there may be a significant delay between management deterioration or the lack of investment and the open disclosure of the problems affecting the service.

A good understanding of each sector’s technology and an information system which may make it possible to carry out an efficient monitoring activity are key factors to prevent these situations from reaching irreversible deterioration levels. BOX 50 shows an example for the electric power sector of different service quality indicators and it explains the way in which each of those indicators provides clues about different types of problems faced by company management.

**BOX 50: Electric Power Distribution Management Indicators**

In the electric power distribution sector there are two traditional standards to assess the technical service quality: average interruption duration and average interruption frequency.

If combined, both standards amount to the total interruption time, which is an added indicator of the quality of the distribution technical service because it measures how much time a year any given user or group of users has been deprived of accessing the service.

However, partial indicators are useful to identify different types of problems related to the system management. High average interruption time figures indicate failures in management because they state that once a failure has actually occurred it takes a long time to repair it. In addition, high interruption frequency figures indicate lack of investment in, or maintenance of, the network.

Given the technological features—long-lasting assets—a drop in the interruptions duration ratio is an indicator of mismanagement and it may be considered a “leading indicator” of infrastructure problems. This would make it possible to take early actions to prevent from reaching irreversible deterioration levels.

Acute operational crisis situations correspond with failures in the management of, or with problems with, key assets within the company (any transformer blowout, lines falls, problems in any treatment plant, bridge deterioration, etc). Given the very nature of these types of events, it is harder to prevent and/or avoid them, though they generally last shorter in time.

External operational distress situations may be categorized on the basis of their origin; consequently, they may be naturally or politically driven. Naturally driven cases are generally related to acts of God and force majeure events, such as earthquakes, hurricanes, and other natural catastrophes.

Social or political crises may also affect the service. In specific cases, such as the cases of terrorist attacks against infrastructure works (for example, Sendero Luminoso’s target in Peru was the electric power system—high-voltage towers). In some cases, even though the sector’s assets may not be the specific target, they may still be affected either directly or indirectly as a result of social or political conflicts. These cases may affect the assets or they may alternatively have merely commercial effects, as it would be the case upon a sharp decrease in the service’s collection ability associated to political and social crisis.

The common element to both non-chronic internal and external distress, irrespective of the different responsibilities involved, is the need to take prompt measures to contain and restrict the adverse effects of the service crisis.
The Federal Emergency Management Agency (FEMA) of the United States, set up to deal with disasters adopted a two-goal strategy. These two goals consisted in protecting both people and infrastructure from any disasters and in minimizing the costs of response and recovery upon occurrence of a disaster. FEMA estimates that for each dollar spent in disasters prevention, two dollars are saved in response to emergencies. In principle, a strategy oriented to minimize the impact of operational distress situations should act in four different areas:

<table>
<thead>
<tr>
<th>Action</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altering the risk</td>
<td>Cloud sowing during droughts</td>
</tr>
<tr>
<td>Preventing the risk</td>
<td>Construction of dams to prevent floods.</td>
</tr>
<tr>
<td>Avoiding the risk</td>
<td>Relocation of infrastructure and people in lower-risk areas</td>
</tr>
<tr>
<td>Adapting to the risk</td>
<td>Imposition of design rules and earthquake or hurricane-proof constructions</td>
</tr>
</tbody>
</table>

In the context of the PPP, this strategy involves the need to take actions at all the project development stages. In order to take all preventive measures, actions must be taken at the stages of contract design, award method, monitoring of the construction and operation, and maintenance. Upon occurrence of an operational distress situation, all the actions to be taken must be focused on policies oriented to minimize the impact on people and the intervention cost. To that effect, it is necessary to have suitable institutional and economic instruments, which may make it possible to act quickly and effectively.

Measures against Operational Distress

Regulatory measures related to operational distress have to do, on one hand, with prevention and, on the other hand, with taking measures in situations arising out of disasters. From the point of view of prevention, the central role of regulation is to avoid that chronic situations of poor performance become acute crisis as a consequence of the lack of control.

International experience shows that many PPP contracts explicitly provide for rules to tackle these situations and set limits on certain quality parameters. Once such parameters have been overcome, it is possible to take measures such as the auditing or the loss of the concession. A summary of some of these measures is contained in Table 38 below.

<table>
<thead>
<tr>
<th>Country</th>
<th>Indicators</th>
<th>Regulatory Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Water</td>
<td>Company’s auditing for a 180 days’ term</td>
</tr>
<tr>
<td></td>
<td>Electricity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Railway</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Electricity</td>
<td>Company’s auditing for a 180 days’ term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Company’s auditing for a 180 days’ term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Company’s auditing for a 180 days’ term</td>
</tr>
<tr>
<td>Colombia</td>
<td>Electricity</td>
<td>Fines owing to quality Loss of the concession</td>
</tr>
<tr>
<td>Australia</td>
<td>AER</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>Electricity</td>
<td>Fines owing to quality Loss of the concession</td>
</tr>
</tbody>
</table>

matters may not be higher than 20% of the annual Revenue. because of breach of contract.

<table>
<thead>
<tr>
<th>Country</th>
<th>Sector</th>
<th>Demanded</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chile</td>
<td>Water</td>
<td>YES</td>
<td>Drought Contingency Plan 2006 OFWAT Downstream Gas and Electricity National Emergency Plan 2006</td>
</tr>
<tr>
<td></td>
<td>Electricity</td>
<td>YES</td>
<td>Contingency plans must comprise emergency timetables and their applicability</td>
</tr>
<tr>
<td></td>
<td>Railway</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Electricity</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Colombia</td>
<td>Electricity</td>
<td>YES</td>
<td>There is a General Guide for Elaborating Sector Emergency Plans</td>
</tr>
<tr>
<td>Australia</td>
<td>AER</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Chile</td>
<td>Water</td>
<td>YES</td>
<td>The service provider must elaborate a contingency plan and have safety facilities or backup in emergency situations</td>
</tr>
<tr>
<td></td>
<td>Energy</td>
<td>YES</td>
<td>Requirement of a plan as per the Contingency Plan Form</td>
</tr>
</tbody>
</table>

It is clear that the mere existence of contingency plans does not guarantee their effectiveness in case they need to be used. Imposing the requirement of having a contingency plan is far from being a sufficient condition to ensure the plan’s viability. Periodic review and update of the contingency plans along with their testing through mock situations are essential to ensure that, in case of a negative event, the plan is a useful and functional tool in solving the crisis (see BOX 51).
BOX 51: Sri Lanka Experience

Sri Lanka, which began telecommunication reforms in 1991, included conditions related to disaster preparedness and recovery in almost all the licenses issued to operators.

The licenses included several conditions pertinent to disaster management including:
- A condition requiring the licensee to provide public emergency call services to emergency organizations;
- One mandating the provision of maritime and aeronautical emergency service for the safety of life;
- A requirement that the licensee make plans for rapid restoration of services during public emergencies, after necessary consultations with relevant agencies and implement them; and
- An obligation to provide priority fault repair service to emergency organizations.

The regulator developed a pilot study in 1999 to assess the compliance of these provisions. The study included surveys of operators and emergency-related organizations, multiple meetings with operators including a national workshop and media activity. The pilot study on emergency telecommunications found that all parties, including the regulator, had ignored them and that there was little readiness for a disaster or a recovery therefrom.

To enforce these license conditions on operators, it would first be necessary to go through some form of public proceeding to establish the precise nature of the obligations set out in the license conditions. It would also be necessary to ensure that the various actions required of government agencies, including the regulatory agency, were duly taken.

The Sri Lankan case shows the weakness of relying on license conditions and mandates alone, without effective incentives in the form of clear allocation of responsibilities for costs of disaster preparedness and recovery.

Source: Regulatory design for disaster preparedness and recovery by infrastructure providers: South Asian experience Leena Srivastava, & Rohan Samarajiva,

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CONTRACTS UNDER STRESS

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8

9 Contract management during construction, operation expiry and termination

9.1 Making the private partner performances transparent and accountable

<table>
<thead>
<tr>
<th>Transparency of the private partner performances</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Mexico: Acuerdo Secretaria de Hacienda Diario Oficial 9 Abril 2004]</td>
</tr>
<tr>
<td>33. A partir del inicio de la vigencia de los contratos de servicios de largo plazo, las dependencias y entidades deberán reportar, a través del Sistema Integral de Información de los Ingresos y Gasto Público, la información que especifique la Secretaría, a fin de evaluar el cumplimiento de los objetivos y metas que se hayan establecido cuando se solicitó la autorización de realizar el proyecto para prestación de servicios correspondiente.</td>
</tr>
<tr>
<td>34. La Secretaría y la Contraloría, por conducto de la unidad administrativa que corresponda, en el ámbito de sus respectivas competencias, podrán solicitar en cualquier momento información relativa a los proyectos para prestación de servicios y a los contratos de servicios de largo plazo, con el objeto de conocer su situación y el avance en la ejecución de los mismos.</td>
</tr>
</tbody>
</table>
9.1.1 Reporting requirements for the construction stage  
(construction progress, commissioning and hand over reports)

9.1.2 General framework for service performance monitoring

9.1.3 Monitoring private partner business performances

9.1.4 Monitoring private partner cash flows and project financial health

9.1.5 Risk monitoring (government borne and transferred risk)

9.1.6 Relationship monitoring

9.1.7 Payment to the private partner and payment report

9.1.8 Monitoring and reporting contract expiry

9.2 Preserving participation and institutional integrity in contract management

9.2.1 Monitoring and reporting on social and environmental issues

9.2.2 Monitoring and reporting on Public access, consumer protection community consultation

9.3 Enhancing transparency, accountability in managing change of circumstances through institutional and contractual mechanism

9.3.1 Managing the relationship with the private partner and affected stakeholders

9.3.2 Managing flexibility to meet the changes

9.3.3 Managing expiry and termination

9.4 Good governance in distressed circumstances

9.4.1 Managing economic distress

9.4.2 Managing financial distress

9.4.3 Managing Operational distress
Source: “PPPs in Developing Economies: Overcoming Obstacles to Private Sector Participation” issued by DEPPA BANK in August 2007.
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