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REGULATING INFRASTRUCTURE -- FUNDING REGULATORY AGENCIES

Warrick Smith and Ben Shin

Governments around the world are retreating from the role of owner and operator of infrastructure and placing greater emphasis on their role as regulator of services provided by private firms. This shift has heightened interest in the quest for improved regulation of private infrastructure providers, including the use of independent regulatory agencies intended to ensure that discretion is exercised at arm's length from the political process. A critical question in establishing such agencies is how to balance autonomy with accountability, including in relation to funding arrangements.

This note draws on recent international experience to illustrate some of the main issues and options associated with funding independent infrastructure regulators. ***Section 1*** *provides a background to the discussion by examining the role of independent regulators and their funding arrangements in the broader context of infrastructure regulation.* ***Section 2*** *examines specific implementation issues and options in more detail.* ***Section 3*** *presents a brief conclusion. The* ***Annex*** *provides material on funding approaches in selected OECD and Latin American countries.*

1. Why Worry About Agency Funding?

Infrastructure Regulation & Independent Agencies

The design and implementation of regulatory arrangements for infrastructure pose a number of challenges for policymakers.[1] The general goal is to restrain abuse of market power by firms in monopolistic activities while providing investors with assurance of a fair return on their investments. Achieving this goal is not easy. It is difficult, if not impossible, to anticipate every contingency in long-term regulatory arrangements for infrastructure, thus placing a premium on mechanisms to provide flexibility. Yet prices for most infrastructure services tend to be "political", placing governments under strong political pressure to misuse discretion to hold prices below the long run costs of supply.

Potential investors in infrastructure activities are aware of this risk, and of the vulnerability of their usually large, long-term and specific investments once they have been made. Governments need to be able to commit credibly to regulatory policies that provide investors with assurance of a fair return on their investment. This is necessary both for attracting initial investment at reasonable cost and for encouraging efficient operation of the investment once it has been made.

Increasingly, the main strategy governments adopt to commit to their regulatory undertakings is to establish a regulatory system which limits discretion in pricing and other rules and places responsibility for the exercise of residual discretion in a regulatory agency with the requisite expertise and independence. "Independence" in this context includes measures to protect the regulatory decisionmaking process from being "captured" by short-term political pressures, the regulated industry or other special interest groups.

Safeguarding Agency Independence. Some of the safeguards commonly adopted to foster independence include:

- Providing regulators with a mandate that excludes or limits political direction.
- Providing regulators with security of tenure during their fixed terms.

[1] See Smith & Klein (1994).

Box 1: Is An Independent Agency *Really* Required?

One of the most contentious issues in many infrastructure reform debates is whether it really is necessary for Ministers to surrender regulatory control to an independent agency.

Clearly, it is never "essential" to have such agencies. However, in the absence of effective safeguards against the misuse of regulatory discretion, the government will be required to: (a) rely on more specific and rigid rules, and hence reduce opportunities to promote efficiency goals and adapt to changing economic and technological conditions; and/or (b) accept higher infrastructure prices to reflect the risk premia demanded by investors.

Independence will be particularly important if any of the following three conditions exist:

- The regulatory rules involve a significant degree of discretion, particularly in relation to the control of prices or profits.
- The private firm will be interacting with a public firm, whether as supplier, customer or competitor. In this setting, vesting decisionmaking authority in a Minister will involve a conflict of interest.
- Civil service salary rules prevent Ministries from attracting or retaining highly-qualified professional staff, or exacerbate concerns over corruption.

- Prescribing professional or other qualifications for appointment, and involving the Executive and Legislative Branches in the appointment process.
- Where authority is vested in a commission, staggering the terms of appointees to reduce the connection with particular Governments.
- Exempting agencies from civil service rules that limit salaries below those required to recruit and retain well-qualified staff.
- Prescribing high standards of transparency in regulatory proceedings.
- Providing agencies with an independent source of funding to reduce reliance on politically-directed budgetary allocations.

Balancing Autonomy With Accountability. Measures to provide regulators with a degree of insulation from the political process have to be reconciled with the need to ensure regulators remain accountable for their actions. While the appropriate balance between autonomy and context, common measures include: accountability will vary from context to

- Permitting removal of regulators in the case of proven misbehavior.
- Prescribing duties and obligations as clearly as possible in law, and providing an effective appeal process.
- Prescribing high standards of transparency in regulatory proceedings.
- Prescribing rigorous public reporting requirements, including requirements to publish annual reports.

Prescribing legislative scrutiny of agency budget proposals.

The Role of Funding Arrangements

Traditionally, regulatory functions, like other functions of government, were funded from general tax revenues allocated through the budget process. The shift to alternative funding approaches is a relatively recent phenomenon. This has been driven by three main concerns,

with the weight attached to any particular motive varying between countries.

Safeguard Against Political Interference in Regulatory Decisionmaking. As noted above, funding arrangements are one of the measures often adopted to protect "independent" regulators from improper political interference. While funding arrangements are only part of the total picture, the concern is that the Executive might use control over budget allocations to undermine the exercise of independent judgment. Examples might range from the use of control over agency budgets to direct regulators' priorities to threats of reducing or eliminating funding if political preferences are not accommodated.

The significance of this concern will depend on the governance traditions of particular countries. In most OECD countries, this concern is rarely given as a rationale for use of industry levies or user fees. In many developing and reforming economies, on the other hand, this is often cited as the principal or even sole rationale for such measures.

While concerns of this kind may have some validity, some weaknesses in the argument must be acknowledged. First, funding is only a small part of the overall institutional framework, and in many settings the Executive will have more direct and less transparent means of attempting to undermine the exercise of independent judgment.

Second, it is interesting to note that other public institutions that are intended to operate free of political direction -- most notably the courts -- are rarely given an independent source of funding as part of their protective mantle.

Finally, as noted above, measures to accord regulators a degree of insulation from political pressure need to be reconciled with checks and balances to ensure due accountability. Funding arrangements are usually a key part of the accountability regime, and agencies funded by industry levies or other extra-budgetary sources will still require their budgets to be reviewed. This in turn can re-introduce opportunities for political manipulation. This is a key issue and is discussed in Section 2.

Adequacy of Funding for Regulatory Tasks. In some countries, past difficulties with infrastructure regulation have been attributed in part to a failure of government to commit adequate resources to the task through the general budget process. This may be because the immediate beneficiaries of effective regulation -- consumers -- are relatively diffuse and will usually be less well-organized than other claimants on the budget. At the same time, regulated firms will often have an interest in the regulator receiving less rather than more funding, and Ministry officials may not be strong advocates for agency funding in the budget process if they feel the agency undermines their authority over policy matters. In this environment, there may be a risk that the task of regulation will be given insufficient priority in the budget process, with longer term negative consequences for the regulated industry and the economy generally. Funding regulators through industry levies and the like can assist in reducing this risk. The problem of defining "adequate" funding remains, however, and is considered in Section 2.

Cost-recovery: Political, Efficiency & Distributional Goals. Pressures on government budgets in most countries have led to increasing interest in recovering the costs of government services from users -- the immediate beneficiaries -- rather than taxpayers in general. This strategy has political, efficiency and distributional dimensions, and has been the primary driving force behind independent funding arrangements for regulators in OECD countries.

From a *political* perspective, shifting part of the burden of public administration away from the budget reduces pressure on general taxation measures and public lending. Industry levies, particularly when transmitted to end-users (ie,

consumers) through higher tariffs, are largely hidden.

From an *efficiency* perspective, there are two main arguments. First, charging user fees for services rendered by government can improve the efficient allocation of resources if the pricing strategy reflects any positive and negative effects associated with production and consumption. Many agencies now charge for specific services provided to particular users, ranging from copies of reports to discretionary review and certification processes. Whether or not these fees constitute an efficient form of user charge, or simply a source of *de facto* taxation, depends on a judgment as to whether the social costs and benefits of regulation are effectively captured by the particular pricing scheme. Second, even if user fees and the like are treated as a form of taxation, they may nevertheless be a more efficient tax than some alternatives. This argument rests on the high inelasticity of demand for most infrastructure services: taxing those services will lead to less distortion than taxes levied on goods or services with more elastic demand.

Depending on the detail of implementation arrangements, industry levies, user fees and general taxes can each have different *distributional* consequences. For example, under cost-recovery schemes citizens who do not have a telephone or access to electricity will not be required to contribute to the cost of the relevant regulator through their taxes. Moreover, it is possible to direct that certain users are exempt from user fees or that industry levies be recovered primarily from a particular class of end-users, rather than users generally.

International Experience

OECD Countries. Many OECD countries are only now beginning to privatize their infrastructure, and hence have not yet grappled with issues associated with the design of independent infrastructure regulators. Countries with independent agencies illustrate a range of approaches. In the U.S., Federal regulatory agencies receive all or most of their funding from the general budget, but recover some fees which are paid back into general revenue. In contrast, most state-level regulators in the U.S. receive the majority of their funding from industry levies or user fees. In Canada, telecommunications regulators are all at least partly funded from industry levies while other regulators depend to differing degrees on allocations from the general budget. In the U.K., infrastructure regulators receive their funding from license fees levied on regulated firms.

Latin America. The surge of activity in infrastructure privatization in Latin America has seen many countries in the region establish specialist industry regulators, many of which are intended to be independent. Countries with provision for funding regulatory agencies from industry levies or user fees include Argentina, Colombia, Peru and Venezuela.

Details of arrangements for regulators in selected OECD and Latin American countries are set out in the Annex.

2. Implementation Matters

The design of funding arrangements for infrastructure regulators raises a number of detailed implementation questions.

How Much Funding Is Required?

Agency income needs to cover a number of specific cost items, including salaries, consultants, rent, computers, training, public hearings and other operating expenses.

There is no simple formula for determining how much funding is required for a particular agency. Much will depend on the specific functions assigned to the agency, the detailed tasks created by the regulatory rules, the managerial strategy adopted for executing those tasks, as well as labor and other costs in each country.

In most cases, salary costs will dominate agency budgets, which raises the question of

how many staff an efficient agency should have. Again, there is no easy answer to this question, for there is no necessary correlation with the size of the country, number of subscribers or turnover of the regulated firms. For example, the U.K.'s electricity regulator has over double the staff of its Argentinean counterpart, while the opposite relationship exists between those countries' gas and telecommunications regulators.

As a general rule, quality of staff will be far more important than quantity, and it may often be necessary to pay salaries above those applicable in the civil service to recruit and retain top quality personnel. It should also be noted that having "too many" staff may be at least as problematic as having "too few". Larger staffs increase the direct costs of regulation, which must be paid for by taxpayers or consumers. No less important, under-employed staff usually feel the need to be "doing something" to justify their existence. This can lead to unnecessary (and costly) demands on the regulated firms or other forms of excessive regulatory intervention. Costs of this kind must be borne in mind by governments that are tempted to swell the size of regulatory agencies in order to accommodate redundant staff from a Ministry or privatized utility.

In each case, it will be necessary to estimate what skills are required and in what quantity, having regard to the actual tasks to be performed by the agency. During the initial phase of an agency's existence, it will often be preferable to err on the side of having "too few" staff and to rely more heavily on consultants.

User Fees For Particular Services

Many agencies impose fees for particular services -- such as reports or discretionary review or certification processes. In some cases, fees are recovered directly by the agency and reported as income in the budget process; in other cases, fees are channeled through the budget. In most cases they are a relatively small source of total agency funding.

Levies on Firms or Consumers

In principle, regulatory costs can be imposed on consumers directly, through a separately identified fee on their utility bill, or indirectly, where the levy is paid by regulated firms who then pass the costs on to consumers in the form of higher prices.

Levying consumers directly remains relatively unusual, with examples including the regulator responsible for overseeing the private water concession in Buenos Aires and the cable regulator in the District of Columbia in the U.S.[2] This approach has the benefit of improving the transparency of the costs of regulation, but may also increase the complexity (and cost) of administering the scheme.

Levying regulated firms tends to be the most important alternative to funding from the general budget. In the U.K. such levies are called "license fees"; in the U.S. they are usually called "regulatory assessments". Whatever the name, they can be distinguished from user fees by the fact that there is no necessary correlation between the level of benefits received and the impost. Levies on regulated firms are used to fund most regulators in the U.S. and Argentina, for telecommunications regulators in Canada and for the regulators in the U.K., Venezuela, Peru and Colombia.

The manner in which an industry levy is passed on to consumers will depend in part on the form of price regulation.[3] Under traditional rate of return regulation, this cost will often be treated as an element of operating costs and hence passed on to consumers automatically through the tariff schedule approved by the regulator. Under price cap regulation, accounting for

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[2] In Buenos Aires, the water regulator applies a levy of 2.67% on consumers' bills. In the District of Columbia, a regulatory fee of $0.03 per month is paid by residential cable subscribers

[3] For a discussion of alternative price regulation methodologies, see Schmalansee (1993).

individual cost items is less important, and changes in a firm's cost structure do not automatically flow on to tariff increases. As price cap schemes are nevertheless intended to allow efficient firms to make a reasonable rate of return, the overall result may not be that different from under rate of return regulation. However, the risks implicit in price cap regulation fall on the regulated firm, rather than consumers, which may make a firm operating under price cap regulation more sensitive to the level of the industry levy.

Where the levy is imposed directly on consumers, or is imposed on firms but tariff regulation directs the incidence of the regulatory fee component of the firms' costs, questions arise as to the design of the most appropriate structure of levies. For example, if the regulatory fee is significant, distributional objectives might be pursued by exempting some categories of users from the regulatory fee. More generally, efficiency objectives will generally be advanced by imposing the fee on tariff components with least elastic demand, such as a connection fee, rather than a demand fee. The costs and benefits of adopting more elaborate schemes of this kind need to be weighed carefully in the context of particular environments.

Levies As Safeguards Against Political Interference. Levies on consumers or firms are often viewed as one of the safeguards against political interference. While this is appealing in principle, several implementation problems arise.

(a) Total Funding: The Size of The Levy

To provide real protection from political interference, the size of the levy would need to be established in law and not be subject to political discretion. In practice, however, it is notoriously difficult to establish a levy that will provide a "reasonable" level of funding without regular adjustment. While it is possible to write formulas linking funding to a fixed percentage of industry turnover or other indicators, problems arise if such formulas are applied rigidly over a sustained period.

There is no necessary correlation between the reasonable income needs of an efficient agency and industry turnover, the number of subscribers or any other objective standard. Rigid formulas are destined to lead to under- or over-shooting of requirements. For example, tying funding to industry turnover in an industry expected to grow rapidly after privatization will often lead to the levy generating excessive income, as costs of efficient regulation rarely grow in exact proportion to the size of the industry. As well as the costs of excessive staffing noted above, this approach will dull incentives for the agency to perform efficiently.

Some jurisdictions use such formulas to establish a *maximum* level of levy. In Peru, laws provide that the maximum levy on telecommunications and water firms shall be 0.5% and 2.0% respectively of each industries' gross revenues. In Colombia, the electricity law provides that levies on regulated firms cannot exceed 1.0% of components of the firms' costs. In the U.S., levies funding the Colorado PUC are subject to a maximum of 0.2% of firms' gross operating revenues from intra-state business.

Specifying maximum levies avoids some of the problems associated with rigidly defined formulas, and provides a cap on the size of agencies. However, it does not provide agencies with protection from political interference in funding matters. Where concerns over interference of this kind loom large, several approaches might be considered:

- The amount of agency expenditures in any one year might be set by the Legislature, rather than the Executive.

- Budget needs could be evaluated through a transparent process, such as the regulator making a public submission to a committee of the Legislature.

Box 2: Funding Colorado's Public Utilities Commission

Colorado's Public Utilities Commission (PUC) was established in 1913. It has responsibility for electricity, gas, telecommunications, water, intra-state aviation and some motor carriers in a State with a population of around 3.5 million.

The PUC has three Commissioners and a staff of around 95. Its expenditures in the fiscal year ending June 1993 totaled $6.1 million, all of which was obtained from levies on regulated firms. The PUC's annual funding process includes the following features:

- The PUC's total expenditures for the present year are determined by the State Legislature, and are subject to a maximum based on a levy of 0.2% of firms' gross operating revenues from intra-state business in the previous year.
- Assessments are calculated by the Department of Revenue to meet the income approved by the Legislature. The percentage contribution is uniform across regulated sectors.
- Firms pay the levy to the Treasurer in quarterly installments.
- Levies received by the Treasurer are placed in a dedicated Fund. Surplus income at the end of the year is used to reduce levies in the next period.

- Actual levies might be set for two or three years at a time, to reduce opportunities for political interference.

- Where judicial review arrangements are effective, a law could specify that funds allocated to the agency be "no less than required for a reasonably efficient agency to fulfill its statutory functions", or language to similar effect.

(b) Scrutiny of Agency Spending Plans

Accountability requirements in most systems will require the composition, and not just the size, of an agency's budget to be approved. This responsibility usually falls to the Legislature, although in some cases the Executive plays a role.

Where concerns over political interference loom large, it may be possible to direct that the Executive has no discretion to modify budget proposals presented by the regulator to the Legislature.

3. Conclusions

Funding regulatory agencies from industry levies and user charges offers a number of potential advantages over funding from general taxation. While OECD countries have generally focused on cost-recovery goals, in Latin America this strategy has also been seen as part of the protective mantle given to independent regulators.

When these arrangements are motivated by concerns over political interference in the exercise of regulatory discretion, it must be remembered that financial autonomy is only a relatively small part of the total picture. Other safeguards will usually be far more important.

Moreover, autonomous funding arrangements raise new implementation challenges, including those flowing from the need to balance autonomy with accountability. Given the difficulties in establishing a firm correlation between the reasonable funding needs of an

efficient agency and any objective standard, some mechanism to adjust levies is required. The composition of proposed agency budgets will also require scrutiny. Although these requirements present opportunities for political manipulation, it is possible to design schemes that provide agencies with at least some degree of protection from political interference.

REGULATORY AGENCIES -- SELECTED OECD & LATIN AMERICAN COUNTRIES*

AGENCY	STAFF	BUDGET	FUNDING SOURCE
I - SELECTED OECD COUNTRIES			
Canada			
Federal:			
NEB (electricity & gas)	343 (1992)	$37.1 m (1992)	General taxation
RTC (telecom, cable, radio & broadcasting)	423 (1992)	$35.6 m (1992)	Levies on regulated firms
Provinces:			
Alberta PUB (electricity, gas & telecom)	31 (1993)	$3.1 m (1993)	33% general taxation, 66% levies on regulated firms
Nova Scotia URB (electricity, telecom & water)	31 (1993)	$1.3 m (1992)	64% general taxation, 36% levies on regulated firms
Quebec TB (telecom)	30 (1991)	$1.7 m (1992)	Levies on regulated firms
United Kingdom			
OFFER (electricity)	228 (1993)	$16.0 m (1994)	Levies on regulated firms
OFGAS (gas)	31 (1993)	$6.7 m	Levies on regulated firms
OFTEL (telecom)	151 (1993)	$12.7 m (1994)	Levies on regulated firms
OFWAT (water)	138 (1993)	$13.1 m (1994)	Levies on regulated firms

* All figures for 1995 unless otherwise specified.

REGULATORY AGENCIES -- SELECTED OECD & LATIN AMERICAN COUNTRIES*

AGENCY	STAFF	BUDGET	FUNDING SOURCE
United States			
Federal:			
FERC (electricity and gas)	1,472 (1993)	$140 m (1992)	General taxation; some fees recovered to the budget
FCC (telecom, cable, radio, satellite & broadcasting)	1,783 (1993)	$126.3 m (1992)	General taxation; some fees recovered to the budget
States:			
California PUC (electricity, gas, telecom, transport, water & wastewater)	1,029 (1992)	$83.9 m (1992)	92% from levies on regulated firms, 4% from general taxation, and 4% from specific transaction and investigation fees
Colorado PUC (electricity, gas, telecom, transport & water)	95 (1993)	$6.1 m (1993)	100% from levies of up to 0.2% of industry gross revenues
Florida PSC (electricity, gas, telecom, water & wastewater)	391 (1992)	$20.5 m (1992)	100% from levies on industry gross revenues Electricity: Up to 0.5% (0.375% actual) Gas: Up to 0.125% (0.0833% actual) Telecom: Up to 0.25% (0.15% actual) Water/Wastewater: up to 4.5% (4.5% actual)
New York PSC (electricity, gas, telecom & water)	686 (1992)	$55.9 m (1992)	99% from levies on regulated firms

II - SELECTED LATIN AMERICAN COUNTRIES

Argentina			
ENRE (electricity)	85	$15.6 m	Levies on regulated firms
ENERGAS (gas)	86	$22.6 m	Levies on regulated firms
CNTF (rail)	74	$9.4 m	Portion of concession fees paid by regulated firms
CNT (telecom)	400	$22.1 m	0.5% of industry revenues, plus radiospectrum fee
ETOSS (water in B.A.)	72	$15.7 m	2.67% of consumers' water-sewage bills

* All figures for 1995 unless otherwise specified.

REGULATORY AGENCIES -- SELECTED OECD & LATIN AMERICAN COUNTRIES*

AGENCY	STAFF	BUDGET	FUNDING SOURCE
Colombia			
CREG (electricity & gas)	35	$3.9 m	Up to 1% of industry's functioning expenses, excluding operating expenses and energy purchases
Peru			
OSIPTEL (telecom)	65	$6 m	0.5% of industry gross revenues
SNSS (water)	45	$2.5 m	Up to 2% of industry gross revenues
Venezuela			
CONATEL (telecom)	80 (1993)	$2.9 m (1992)	0.5% of regulated firms' revenues

* All figures for 1995 unless otherwise specified.

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