Regulation, Institutions, and Commitment in Telecommunications
A Comparative Analysis of Five Country Studies

Brian Levy and Pablo T. Spiller

Within any system of utility regulation, there is a tension between the ability to commit to a stable set of rules and the ability to respond flexibly to changing circumstances. Countries differ in their institutional endowments and hence in the ways in which they can resolve this tension. A first group of countries can design regulatory systems that afford the regulator substantial formal discretion to respond to changing circumstances and can use process to restrain arbitrary action. A second group of countries can restrain arbitrary action only by calling on specific substantive rules and may have to sacrifice some flexibility to achieve credible commitment. A third group may lack the domestic institutions to put in place a credible and workable regulatory system of any kind.

In recent years a number of countries have undertaken far-reaching initiatives to reform and privatize their utilities, and many others are demonstrating substantial interest. One reason for the surge of interest in the privatization of telecommunications may be the rapid technological change in the sector and the associated opportunities for technological improvements (although the same cannot be said of other utilities that are being put on the block). A second reason may be widespread political change and a questioning of the appropriateness of

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public management of productive enterprises. Whatever the reason for the
trend, there is broad agreement that private participation should not be viewed
as an end in itself but as a means of improving performance.

This paper synthesizes the results of five case studies of the regulation of
private telecommunications utilities and explores the implications for policy
(Esfahani 1993; Galal 1993; Hill and Abdala 1993; Spiller and Sampson 1993;
Spiller and Vogelsang 1993). The studies build on an earlier World Bank-
supported analysis of the performance of twelve privatized firms, including four
telecommunications cases (Galal and others forthcoming). That analysis shows
that privatization led to improved performance in eleven of the twelve cases,
including all the telecommunications cases. It cautions, however, that the bene-
fits of privatization are not automatic but are dependent on the regulatory and
competitive environment in which the newly privatized firms operate. The pre-
sent research explores the relationship between regulation and private perfor-
ance in telecommunications.

While the number of cases examined is small (see table 1), and the results and
policy implications should be viewed as tentative, we have found it useful to
push to the limit the opportunities for generalization. The generalizations are
linked to an analytical framework based on the modern theory of institutions,
with its emphasis on informational, commitment, and transaction-cost consid-
erations in understanding the role of economic and political institutions.\(^1\)
Indeed, because of the generality of the framework, many of the results appear
applicable to other utilities, including power and water.

Utility regulation has two goals: to encourage investment and to support
efficiency in production and use. Regulation encourages investment by provid-
ing rules that are broadly perceived to be fair, that allow investors a profit, and
that inspire confidence in the stability of the business environment. Regulation
supports efficiency by encouraging competition and market-based pricing and
by requiring efficient pricing where competition alone is inadequate.

Realizing these goals can be difficult. In particular the goals of investment and
efficiency can be at odds. The case studies of the regulation of private telecom-
munications utilities in Argentina, Chile, Jamaica, the Philippines, and the
United Kingdom reveal that the best way to resolve these tensions varies from
country to country. Indeed, the crucial difference between the success and fail-
ure of private utilities in these countries was the goodness of the regulatory “fit”
with each country's political and judicial institutions.

Several general results emerge from the comparative analysis of these case
studies.

- A necessary condition for sustained and large-scale private investment in
  utilities is that administrative arbitrariness on the part of government be
  restrainable.
- For a regulatory system to encourage private investment, three complemen-
tary mechanisms must be available to restrain arbitrary administrative
action: substantive restraints on the discretion of the regulator, embedded in
the design of the regulatory system; formal or informal procedural con-
straints on changing the regulatory system; and institutions that enforce
these substantive and procedural constraints.

- A country's institutional endowment strongly affects whether it can put in
place a regulatory system with the capacity credibly to restrain arbitrary
administrative action. Existing institutions also influence the form that a
system may take.
- Some countries will be able to restrain arbitrary administrative action only
by establishing a regulatory framework that substantially limits regulatory
flexibility. Other countries will be able to do much better.
- Some relatively efficient regulatory rules (such as benchmark regulation or
an RPI – X formula based on the inflation rate minus an X factor for
technology change) require institutional foundations that are not likely to be
found in many low-income countries. Consequently, some countries may
have to settle for less efficient rules if the regulatory system as a whole is to
be workable.
- A country's institutional endowment may also limit opportunities for using
competition to support allocative and technical efficiency.
- Countries that lack the institutions needed for workable regulation may be
able to find substitute mechanisms that credibly restrain arbitrary adminis-
trative action and so still attract private investment. Substitute mechanisms
may be available that do not require the missing institutions as a founda-
tion, such as certain forms of broadly based private ownership or interna-
tional guarantees against noncommercial risk, underwritten by the
government.

Analytical Framework

Stated in the most general terms, a utility's performance can be evaluated
according to its ability to meet efficiently the demand for its services. This
general performance objective has three components. The first is an adequate
level of investment. As Galal and others (forthcoming) clearly show, many of the
benefits of privatization result from the relaxation of investment constraints on
public enterprises. The second component is allocative efficiency, which is par-
ticularly important in the telecommunications industry in balancing the provi-
sion (and pricing) of local, long-distance, and international services. The third
component is technical efficiency. Since telecommunications technology is
changing rapidly, technical efficiency has a crucial dynamic component.

In a market economy, competitive markets and property rights are ordinarily
sufficient to ensure that the goals of investment and allocative and technical
efficiency are met. The prices that emerge from competitive markets ordinarily
reflect the economic value of inputs and outputs. Thus market competition
promotes both allocative efficiency (with profits inducing firms to enter and to
supply items for which the economic value exceeds the cost of production) and technical efficiency (with competition continually pressuring firms to improve their productivity and reduce their costs). Finally, property rights are usually adequate to induce firms to invest and so take advantage of opportunities for profit. For utilities, however, a series of "contracting problems" get in the way of the market and undercut property rights mechanisms that ordinarily ensure the smooth functioning of a market economy. These contracting problems provide the rationale for regulation—and for the link between regulation and performance that is the subject of this study (see, among others, Goldberg 1976; Williamson 1988; Barzel 1989; North 1990).

The Regulatory Problem in Utilities

Three special features of telecommunications and other utilities provide a starting point for the analysis of regulation. First, some telecommunication services are characterized by important economies of scale and scope. Second, the provision of local service, in particular, involves a high ratio of sunk costs to avoidable costs. Third, telecommunications services typically have a broad range of users, and consequently their provision and pricing tend to be politically sensitive. Viewed through the lens of the new institutional economics, each of these characteristics creates contracting problems that undercut the ability of ordinary market mechanisms to achieve efficient outcomes—and thereby creates a rationale for regulation.

Contracting problems between firms and consumers. Contracting problems between firms and consumers are closely related to the familiar "market failure" rationale for regulation. Where there are economies of scale and non-trivial sunk investments, incumbent firms tend to develop a first-mover advantage, providing them with some degree of market power. As a consequence, their pricing and investment decisions will not be socially optimal. In principle, firms and consumers could adopt complex pricing schemes and long-term contracts that would induce utilities to invest and price in socially optimal ways (for example, nonlinear marginal cost pricing). In practice, the ability to write such contracts is constrained. Much of the work on applied welfare economics of the past thirty years has addressed the design of regulatory mechanisms and ways to minimize the resulting deadweight losses and ensure efficient levels of investment. Attacking the problems from the other end are critics of regulation who point to capture of the regulatory system by firms as one of the main reasons for regulatory failure. The broader contracting framework adopted here suggests that these allocative concerns are only one (and probably not the most important) of a series of rationales for, and potential critiques of, regulation.

Contracting problems between firms and government. Establishing a telecommunications network involves large sunk investments because the assets
have very low alternative, or salvage, value. Consequently, utilities are particularly vulnerable to administrative expropriation, with regulators setting prices below long-run replacement costs so as to capture the quasi-rents (returns above the opportunity cost when a good is temporarily in short supply) associated with the operation of those assets. (See Goldberg 1976 for one of the first treatments of this problem, as well as Williamson 1976.) Faced with this risk, private utilities might be expected to make disproportionately low investments in services such as local networks where sunk costs are especially high, investing less than the optimal amount in order to reduce their exposure to administrative expropriation.

There are a number of ways to close the gap between apparent investment incentives and actual returns. One possibility is an acceleration of technological change: if private utilities control innovations and their diffusion, the net benefits of administrative expropriation would decline because it would reduce a country's access to innovation. Similarly, where rapid economic growth requires sustained investments in telecommunications over a long period of time, the government's incentives to behave opportunistically are reduced, thereby providing assurances to private investors in utilities about proper government behavior. Of more direct relevance here is the role of regulation: regulatory rules and institutions might be used to provide assurances to private utilities that their investments will not be administratively expropriated (Goldberg 1976). If these assurances are viewed as credible, private utilities would have no reason not to invest at socially efficient levels. As we shall see, the extent to which regulatory institutions demonstrate a credible verification of a commitment against administrative expropriation is a crucial determinant of the performance of private utilities in the countries under study.2

Contracting problems between governments and interest groups. Conflicts among interest groups over the distribution of income and wealth are a central part of the political life of all nations. In principle, governments could contract to make cash transfers among contending groups in ways that resolve the distributive struggle with no losses of efficiency. In most circumstances, however, it is difficult to implement distributive transfers in economically efficient ways. Instead, distributive politics spills over into a broad range of economic issues. Utility pricing is a prime candidate for involvement in distributive politics. Not only is there a broad range of users, but the whiff of monopoly offers a plausible arena for outrage, and the availability of quasi-rents provides ample scope for redistribution, at least in the short term.

As we shall see, distributional demands have strongly influenced telecommunications regulation in a number of the case studies—and in ways that make the efficient resolution of the other two contracting problems more difficult. In several countries (most notably Jamaica and the United Kingdom) the political power of local users has constrained the ability of regulators to implement allocatively efficient pricing schemes that would resolve the firm-consumer con-
tracting problem. Furthermore, the likelihood of opposition by politically influential groups constrains regulators in making credible commitments to refrain from administratively expropriating quasi-rents.

**Contracting Problems and Flexibility.** One reason these contracting problems arise in telecommunications is the difficulty of adjusting to changing circumstances (Goldberg 1976; Williamson 1976). An arrangement that works in some circumstances may not work in others, yet it is too costly to specify in advance how arrangements should change across the full spectrum of potential future changes. Consequently, there is a need for institutions that reduce the potential for opportunistic behavior and thereby enable transactions (and thus investment) to take place but that do not impose undue constraints on flexibility and so prevent some potentially beneficial adaptations.

In telecommunications, with its rapid and unpredictable technological change (in equipment, products, and services), regulatory flexibility that allows for adaptation to new technologies has a much higher value than in sectors in which technological change is more stable, such as water and sewerage services. Too much regulatory flexibility, however, leaves inordinate scope for administrative expropriation, reducing the willingness to invest. Thus, understanding the tradeoff between regulatory flexibility and regulatory commitment is key to the success of any regulatory reform.

A central result of the comparative empirical analysis is that countries differ in their abilities to fashion regulatory systems that can restrain opportunism while retaining flexibility. Some countries will be able to restrain opportunism only by establishing institutions with very limited regulatory flexibility. Other countries will be able to do much better.

**Resolution of the Regulatory Problem: A Framework for Empirical Analysis**

The contracting problems outlined above occur everywhere, but not all countries experience them with the same severity or have the same set of options for resolving them. This section lays out a general framework for empirical, country-specific analysis of how these regulatory problems have been resolved, why the solutions took the forms they did, and what the relation is between these regulatory outcomes and the performance of private utilities.

In trying to understand a country's ability to commit to particular regulatory processes and institutions, it is useful to look at regulation as a two-level design problem: basic design and detail design. The basic design of a regulatory system involves the mechanisms that impose substantive or procedural constraints on regulatory discretion and that serve to resolve conflicts affecting these constraints. Detail design comprises the rules governing utility pricing, cross- or direct subsidies, market entry, interconnection, and the like. Detail design has been the preoccupation of virtually all policy work on regulation. One implica-
tion of this study is that this emphasis is inadequate. Detail design clearly affects performance, but its impact (positive or negative) comes to the fore only if a country first gets the basic design right.

Both basic and detail design are choice variables in the hands of policymakers. The choices are constrained, however, both directly and indirectly, by the specific institutional endowment of the nation through the impact of the institutions on the nature and form of the contracting problems described above. Moreover, the choice of the basic design features of the regulatory system will have an independent effect on the type of detail design that is viable in a particular country.

Following North (1981, 1990) and others, a country’s institutional endowment is defined to include five elements:

- Its legislative and executive institutions—the formal mechanisms for appointing legislators and decisionmakers, for making and implementing laws and regulations, and for determining the relations between these two institutions
- Its judicial institutions—the formal mechanisms for appointing judges and determining the internal structure of the judiciary and for impartially resolving disputes among private parties or between private parties and the state
- Its administrative capabilities
- Custom and other informal but broadly accepted norms that tacitly constrain the actions of individuals or institutions
- The character of the contending social interests within a society and the balance between them, including the role of ideology.

Each of these elements can change over time—and the determinants of such change are a subject of study in their own right. This analysis, however, treats each of these elements as given, as the institutional endowment of a particular nation at a particular time.

A country’s institutional endowment shapes its regulatory commitment problems in two ways: it determines the form and severity of the government-firm and government-interest group contracting problems, and it shapes the range of basic design options available for resolving these problems.

INSTITUTIONAL ENDOWMENT AND REGULATORY CONTRACTING PROBLEMS. Consider, first, how institutional endowment determines the form and severity of the contracting problems. Three of the five institutional elements are relevant here:

- The pattern of conflict between contending social groups
- The nature and structure of legislative and executive institutions
- Informal norms.

The pattern of social conflict has a direct influence on a country’s regulatory contracting problems, particularly on the government-firm contracting prob-
The demands of political interest groups, undergirded by the ideological constructs of the time, may force the expropriation of quasi-rents through administrative decisions. Countering these demands may be other powerful groups which find it in their interest to have well-functioning utilities in place. When the main telecommunications utility is itself an important interest group, another danger arises because the potential for regulatory capture is strong.

The nature of a country’s legislative and executive institutions and the types of constraints they impose on government action also influence contracting problems between the government and firms. The less institutions constrain government action, the greater the risk that agreements made between utilities and governments today will be repudiated tomorrow. In other words, the government-firm contracting problem is likely to be less severe and utility regulation far more stable in countries with a political system that constrains government discretion. Note, however, that stability may imply inflexibility. The same mechanisms that make it difficult to change the rules arbitrarily may make it difficult to enact sensible rules in the first place or to adapt them to sustain allocative or technical efficiency as circumstances change. In countries with mechanisms that are either too weak or too inflexible, the introduction of reforms may have to await some drastic shock to the political system.

Finally, the absence of informal norms also exacerbates the government-firm contracting problem. The threat of administrative expropriation is greater in societies that have developed no informal restraints against imposing penalties on adversaries. Informal norms arise from stable, long-term relations among groups. Nations in which domestic political relations are fraught with instability tend not to develop norms of behavior that support formal institutions in restraining arbitrary governmental action.

**Institutional Endowment and Regulatory Basic Design.** The relation between the basic design options for resolving regulatory contracting problems and the nation’s institutional endowment involves three elements of the institutional endowment:

- The structure, organization, and tradition of independence of the judiciary
- The nature and structure of legislative and executive institutions
- Informal norms.

A strong and independent judiciary can broaden the range of basic design options by serving as a mechanism for limiting administrative discretion. For example, having in place a solid body of administrative law opens the basic design option of using administrative procedures to constrain discretionary behavior. A tradition of timely and efficient upholding of contracts and property rights makes it possible to restrain administrative discretion through the use of formal regulatory contracts or licenses. And a tradition of judicial independence and efficiency opens the basic design option of using administrative tribunals to resolve conflicts between the government and the firm within...
the bounds of the existing regulatory system. Finally, an independent judiciary protects specific legislative or constitutional commitments that underpin the regulatory system.

The form of legislative and executive institutions can also constrain the basic design options for the regulatory system in many ways. Consider, for example, legislative and executive institutions that grant the executive substantial control over legislative agendas and outcomes. Since control of the executive thus implies control of the legislature, executive turnover may have much stronger policy implications than in countries in which the executive has very little legislative authority. While parliamentary systems grant legislative powers to the executive in principle, whether they do so in practice depends on the nature of the political party system. Parliamentary systems with fragmented legislatures provide the executive with little scope for legislative initiative because the power of the executive usually rests on a fragile coalition built on a narrow set of specific common interests. By contrast, two-party parliamentary systems and some other kinds of nonparliamentary political institutions grant the executive broad legislative powers. In the weakest case for basic regulatory design options, when legislative powers alternate between political parties with substantially different interests, specific legislation would not constitute a viable safeguard against administrative discretion, since changes in the law could be expected to follow directly from a change in government.

Informal norms may play an important role as a substitute for legislative flexibility in the choice of basic design options. Thus nations that have developed a strong set of norms limiting what is considered acceptable legislative behavior may bring legislation back as a feasible basic design tool (see Calvert 1992).

Despite the clear empirical evidence of the relation between institutional endowments and the basic regulatory design outcomes in specific settings, it is important to emphasize that these outcomes are not wholly determined by the existing institutional endowment. Policymakers have an important range of choices. Indeed, utility performance turns out to be best when there is a good fit between a country’s institutions and the basic regulatory design and worst where basic design has proceeded without attention to institutional realities.

INSTITUTIONAL ENDOWMENTS AND REGULATORY DETAIL DESIGN. Proper regulatory detail design should facilitate investment, allocatively efficient pricing, and the spread of new services and technologies. The challenge of meeting all three goals is especially complex because of the telecommunications sector’s rapid technological change and the heterogeneity of its market segments, some of which are competitive and some not. A well-functioning system of regulation needs to regulate prices efficiently in the noncompetitive segments, to use competition as a spur to innovation and productivity in the competitive segments, and to respond flexibly to technologically driven changes in underlying competitiveness. At least three factors affect the potential for successful regulatory detail design:

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- The institutional endowment
- The extent of regulatory contracting problems
- The nature of the basic regulatory design.

A nation's institutional endowment may impose limitations on the options available for regulatory detail design. Administrative capabilities are particularly important, especially the ability of the nation's professionals to handle complex regulatory concepts and processes without triggering excessive disputes and litigation. Regulatory systems in nations where administrative capabilities are weak will fail if the detail design calls for very complex implementation.

Regulatory contracting problems, particularly distributive politics, can affect the extent of allocative efficiency that can be achieved by detail design. Perhaps the most serious potential constraint concerns the interaction between detail design and basic design issues. Institutional realities in some countries may result in a basic regulatory design that limits the range of detail design options to third-best (or even fourth-best) choices. In some countries the only way to control administrative arbitrariness may be to do away almost entirely with administrative discretion. This step would confine the range of workable detail designs to mechanisms that would also severely limit the scope for flexibility. In a sector with rapid technological change, this loss of regulatory flexibility comes at a high cost, but the cost of failing adequately to restrain discretion is also high.

Even with all these constraints, the individual country studies suggest that in most cases a menu of choices is available to countries. The quality of the detail design emerges as an independent influence on performance in the country studies.

Country Endowments

The case studies on which this synthesis is based review in detail the histories of private participation and regulation in Argentina, Chile, Jamaica, the Philippines, and the United Kingdom. The studies identify three distinct regulatory episodes for Chile and Jamaica but only one for each of the remaining three countries—in Argentina and the United Kingdom because the cases focus primarily on the recent episodes associated with privatization and in the Philippines because the regulatory system has been more or less stable since the country obtained independence in 1946 (table 1).

The institutional endowments of the five countries in the case studies were quite different and so, therefore, was the interplay between these endowments and the regulatory system. Both formal institutional endowments (the role and nature of the legislative, executive, and judicial branches) and informal elements (patterns of social conflict and informal norms) were important in the case study countries. Although no explicit attention is given to cross-country variations in administrative capabilities, casual comparison suggests that Chile and the
Table 1. Private Ownership, Regulation, and Performance of Telecommunications Utilities in Five Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Ownership</th>
<th>Private regulatory history</th>
<th>Private performance</th>
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<tbody>
<tr>
<td>Argentina</td>
<td>• Nationalized in 1946; privatized in 1990</td>
<td>• 1989–92: repeated changes in regulation</td>
<td>• Highly profitable, but too soon to assess impact on service quality and national welfare</td>
</tr>
<tr>
<td>Chile</td>
<td>• 1930–58; controlled by multinational company (rvt)</td>
<td>• Regulatory law quite open-ended; no independent regulator</td>
<td>• Initial relatively rapid network expansion, then slowdown</td>
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<td></td>
<td>• 1958 to late 1960s: controlled by rvt; partial government takeover in 1967; government intervention in 1971; nationalization in 1974</td>
<td>• Regulatory subagreements in 1958 and 1967 that eliminated some vagueness; superseded by nationalization in 1974</td>
<td>• Network expansion accelerated to pre-slowdown levels prior to intervention and nationalization</td>
</tr>
<tr>
<td></td>
<td>• Privatization in 1988–90</td>
<td>• Highly detailed benchmark regulation supervised by regulatory agency with explicit arbitration process</td>
<td>• Unprecedented high rates of investment and network expansion subsequent to privatization; substantial increase in national welfare</td>
</tr>
<tr>
<td>Jamaica</td>
<td>• 1925–66: privately owned, with separate domestic and international companies</td>
<td>• Rate of return stipulated in license agreement; ad hoc temporary rate boards responsible for rate reviews</td>
<td>• Sustained network expansion in 1950–62, followed by stagnation; steady, moderate rate of return</td>
</tr>
<tr>
<td></td>
<td>• 1966–75: privately owned until nationalization of international company in 1971 and domestic company in 1975</td>
<td>• Regulation by permanent, independent commission; license specifying only maximum rate of return</td>
<td>• Initial network expansion, then slowdown; low profitability after 1970</td>
</tr>
<tr>
<td></td>
<td>• 1986– merger of domestic and international companies and subsequent privatization</td>
<td>• Rate of return specified in license agreement; no independent regulator</td>
<td>• Major investment in domestic network and increased national welfare; high profitability</td>
</tr>
<tr>
<td>Philippines</td>
<td>• Private since inception, with ownership shifting from U.S. to private Filipino parties in 1967</td>
<td>• Long-standing regulation by commission with vague mandate and modest power</td>
<td>• Alternation between stagnation and periods of moderate investment; very high unmet demand; profitability unknown</td>
</tr>
<tr>
<td>United</td>
<td>• Publicly owned from 1912 until privatization in 1984</td>
<td>• Price-cap regulation and complex mechanisms of conflict resolution specified by license</td>
<td>• Investment takeoff in 1983, with large gains in national welfare</td>
</tr>
<tr>
<td>Kingdom</td>
<td></td>
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</table>
United Kingdom are best endowed with the administrative resources required to manage a complex regulatory system, Argentina has a moderately good endowment, and Jamaica and the Philippines have a more limited endowment.

**Formal Institutional Endowments**

The range of formal institutional mechanisms for restraining government authority is broad. It includes the explicit separation of legislative, executive, and judicial powers; a written constitution that is enforced by the courts and limits legislative and executive power; two legislative houses elected under different voting rules; an electoral system designed to produce either a proliferation of minority parties or a smaller set of parties with limited ability to impose legislative discipline; and a federal structure of government with strong decentralization.

**Legislative and Executive Institutions.** In four of the five countries the structure of legislative and executive institutions imposed no systematic and long-term restraints on power during most of the period under study. The absence of constraint is clearest in Jamaica and the United Kingdom. Each country has a sovereign parliament and an executive composed of the leaders of the majority party in parliament. The rules for electing legislators have resulted in a two-party system in both countries, and party discipline is strong. Consequently, the party in power has an absolute majority and so does not need to work out a coalition with other groups to ensure passage of its legislative program (see Cox 1987; Shugart and Carey 1992).

On the surface, political institutions in Argentina and the Philippines appear to incorporate a complex system of checks and balances: both countries have modeled their political institutions on those of the United States, whose constitution incorporates a full panoply of effective checks and balances. Indeed, both countries experienced extended periods of constitutional rule during which executive authority was restrained. Yet as the country case studies reveal, the histories of both countries have been punctuated by periods in which government authority has been concentrated in the presidency, with essentially no constraints arising from the other formal institutions of government.

Argentina's 1853 constitutional separation of powers remained in place for almost a century, until 1949, when President Juan Perón introduced amendments that substantially expanded the powers of the president. The military overthrew Perón in 1955 and restored the earlier constitution, but two subsequent military governments ruled extraconstitutionally. During Argentina's periods of civilian rule, governments were frequently fragmented, making it difficult to enact sustained economic reforms, or they pursued policies that rewarded the supporters of those in power while polarizing society and undermining the economy. The administration of President Carlos Menem is an important exception to this pattern. Not only did his Peronist party win control
of both houses of Congress (as well as the executive) in the 1990 elections, but Congress, with the active support of the opposition party, ceded special powers to the newly elected president to deal with the economic crisis.

In the Philippines in the first quarter century of its independence from the United States, the U.S.-style legislative and executive institutions were reasonably effective in constraining arbitrary government authority, although the Philippine constitution tilts the balance of power more sharply toward the executive than does the U.S. model. In 1972, however, Ferdinand Marcos declared martial law and, despite some modest reforms after 1978, effectively concentrated all power in the executive. Since the overthrow of Marcos in 1986, the Philippines has reverted to a somewhat modified version of its earlier political institutions.

Paralleling events in Argentina and the Philippines, Chile also went through a period of largely extraconstitutional military rule under General Augusto Pinochet during 1973–89. Unlike the case in Argentina and the Philippines, in Chile this period stands out as a fifteen-year aberration in more than a century of civilian rule. Virtually throughout the period, Chile was governed by a constitution that embodied the principles of separation of powers, orderly transfer of authority, and regular elections—although between 1958 and 1973 a series of constitutional reforms shifted the balance of authority in favor of the presidency and elevated national, rather than regional, politics and parties to center stage. For extended periods, votes were divided among multiple parties, with none strong enough to legislate except by coalition. Thus, while Chile was not entirely resistant to extreme pressure, it alone among the five countries studied may be judged to have a long-standing set of legislative and executive institutions that could provide credible safeguards against arbitrary changes in the regulatory regime.

Judicial Institutions. Three of the five countries studied—the United Kingdom, Jamaica, and Chile—have strong judiciaries. The United Kingdom has led the world in the development of a judiciary with an unimpeachable reputation for probity. Furthermore, British common law cedes to the judiciary “lawmaking” responsibilities in all areas not covered by statute. Note, however, the implications for the judiciary of a political system based on a sovereign parliament with no written constitution. Such a system frees parliament to act as it pleases; so long as parliament follows generally accepted procedures, the courts have no formal restraining authority.

Jamaica’s judicial institutions parallel those of the United Kingdom, with two modifications. First, as a former colony Jamaica has retained the right of final appeal of its judicial decisions to the Privy Council in the United Kingdom; this right is an unusually strong source of credibility for Jamaica’s judiciary. Second, Jamaica has both a sovereign parliament and a written constitution. Thus, in the mid-1920s the courts blocked Prime Minister Michael Manley’s attempt to expropriate landholdings by requiring the government to pay fair compensation,
as required by the constitution. Chile, too, has a long tradition of judicial independence that has restrained government discretion in areas of property rights and contracts. Indeed, President Salvador Allende's 1970–73 left-wing government repeatedly clashed with the courts over issues of expropriation and compensation, and the courts refused to back down.

The judiciary is a weaker institution in Argentina and the Philippines. In Argentina members of the judiciary are appointed for life by the president and confirmed by the Senate, giving them, in principle, substantial independence. In practice, turnover within the judiciary has typically accompanied changes in government (whether constitutional or not). In 1990 the new Menem government packed the Supreme Court by increasing the number of justices from seven to fifteen and naming all the new justices, with the approval of Congress. In the Philippines a written constitution calls for an independent judiciary, but lower-court judges have often seemed to become embroiled in patronage politics. Prior to the proclamation of martial law in 1972, the judiciary was reasonably independent. Under martial law, however, President Marcos effectively had the power to remove judges. Since 1986 the judiciary has regained some of its independence and influence.

Informal Institutional Endowments

The informal elements of a nation's institutional endowment are exceedingly broad, encompassing the full range of its history, politics, and culture. Much narrower are patterns of social conflict (contests between competing social groups and between competing ideologies) and informal constraints on the actions of public authorities.

Patterns of Social Conflict. Patterns of social conflict involve both contests among groups with divergent interests and contests among competing ideologies (defined, following North 1990, as subjective perceptions people use to explain the world around them).

One issue of concern is the extent to which users of local telecommunications services represent a politically influential interest group. Such groups would be expected to generate pressures for holding down the costs of local services; when they succeed, long-distance services are often priced correspondingly higher to cross-subsidize local services. Pressures for cross-subsidization have been substantial in Jamaica and the United Kingdom—the two countries in the sample with strong two-party systems in which the middle classes are the swing voters. Cross-subsidization is also substantial in Argentina.

Utility policies can also be influenced by broader national trends in interests and ideologies. The case studies uncovered three episodes in which changes in interests and ideologies created pressure for administrative expropriation of telecommunications operators. The clearest case is that of Chile. From the 1940s to 1973 Chile was guided by a dirigiste state that sought to industrialize 228
under a strategy of import substitution, price control, and direct state ownership. In the second episode, Jamaica’s independence in 1962 gave rise to forces favoring administrative expropriation, even though the balance among interest groups was remarkably stable throughout the period under study. Initially these efforts at expropriation took the form of expanding Jamaican ownership of some major sectors of the economy that were under foreign control. After 1974 a more aggressive socialist ideology was adopted by Prime Minister Manley. The third, more ambiguous, episode concerns the Philippines in the 1960s and early 1970s. Throughout the 1960s there was pressure to “Philippinize” foreign companies. During that period there was also considerable growth in industry, accompanied by the rising political influence of a large industrial urban working class and a burgeoning middle class with an interest in well-functioning public utilities. Their participation in Philippine politics and their challenge to the rule of the old political elite was effectively suppressed, however, by the declaration of martial law in 1972.

In the 1980s in Argentina, Chile, Jamaica, and the United Kingdom changes in interests and ideologies created new pressures for the development of private telecommunications carriers with access to the resources needed to upgrade the networks. In Chile three changes during the military regime of General Pinochet contributed to the release of these pressures: the regime’s uncompromising free-market, pro-private-sector ideology; the suppression of the forces in society committed to extensive state intervention in the economy; and the transformation of the private sector by the early 1980s into an increasingly dynamic and entrepreneurial force dependent on a well-functioning telecommunications sector to ease the way into the international marketplace.

In the United Kingdom the free-market, pro-private-sector policies of the Conservative Party under Margaret Thatcher may have been facilitated by the declining power of organized labor, but ideological commitments clearly played a central role. Similarly, the patterns of interest group influence in Jamaica have been essentially unchanged since independence. Moves toward privatization in Jamaica appear to have their roots in a combination of ideological shifts, efforts to open the economy, pressure from international organizations, and gains in the profitability of the telecommunications system as a whole, which made privatization plausible. Argentina’s ambitious program of privatization also cannot be traced to any sharp underlying shifts in the power of interest groups—the privatization program has been pursued by a president who won power as the leader of the populist Peronist Party. The key proximate cause of the change in policy seems to have been an unexpected initiative by President Menem in 1990, immediately after the election, when he was given extraordinary powers to undertake his own economic program.

**Informal Norms as a Restraining Influence on Public Authorities.** It is difficult to pin down the impact of informal norms on a regulatory system. In the Philippines there appears to be an informal understanding that the govern-
ment will not appropriate the property of members of the elite. Consequently, even though the country’s formal political institutions impose only limited restraints on administrative discretion, and even though the extraction of rents by those in power from other elite groups and other segments of society has been common, by and large the elite have remained confident that ownership of their assets is not threatened.

In the United Kingdom informal restraints function at two levels. At the level of policy implementation, informal understandings define the prerogatives and responsibilities of politicians and bureaucrats. Both groups are careful not to overstep mutually recognized boundaries of authority, even when their power is not explicitly constrained. At the level of the legislature, notwithstanding the fact of a sovereign parliament able to write and repeal any law it wishes, there is an implicit and binding understanding that Parliament cannot overturn without compensation explicit legislated commitments made to private parties (such as licenses based on specific laws).

A Comparative Analysis of Basic Regulatory Design

This examination of institutional endorsements provides a foundation for evaluating the regulatory decisions of the five countries, from the basic design foundations to a unified approach that encompasses decisions about both basic and detail design.

The basic design of utility regulation comprises the mechanisms through which societies create substantive or procedural constraints on regulatory discretion, reducing the vulnerability of utilities to administrative expropriation and increasing their willingness to invest. Three mechanisms have been used by the five countries to restrain arbitrary administrative action:

- Substantive restraints on the discretion of the regulator, which are written into the design of the regulatory system
- Restraints on changing the regulatory system
- Institutions for enforcing both of these restraints.

A key finding of the case studies is that private utilities were willing to make sustained investments only when all three components of restraint worked adequately. A country’s institutional endowments influence the ability to put in place a workable basic design for a regulatory system and the specific form of that design. Countries that lack the institutions needed for a credible domestic regulatory system will have to seek alternative approaches for securing private participation and investment.

Institutional Endowments and Regulatory Commitment Mechanisms

Examination of the relation between institutional endowments and the three mechanisms for restraining arbitrary administrative action shows that private
**Table 2. Restraints on Regulatory Arbitrariness in Five Countries over Time**

<table>
<thead>
<tr>
<th>Country and period</th>
<th>Substantive restraints within system</th>
<th>Restraints on system changes</th>
<th>Enforcement of restraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chile</td>
<td>Limited; strengthened somewhat in 1958. Stipulated in legislation</td>
<td>Separation of powers and divided legislature (especially before 1958)</td>
<td>Strong judiciary</td>
</tr>
<tr>
<td>1987 to present</td>
<td>Very explicit, precise price regulation based on rate of return of efficient firm, plus explicit process for defining noncompetitive activities subject to price regulation; both stipulated in law</td>
<td>Separation of powers and divided legislature</td>
<td>Explicit conflict resolution with strong judiciary as final arbiter</td>
</tr>
<tr>
<td>Jamaica</td>
<td>Monopoly rights plus precise rate of return for long period; written into license</td>
<td>License not to be altered without consent of company</td>
<td>Strong judiciary</td>
</tr>
<tr>
<td>Before 1962 and after 1987</td>
<td>None, given generality of license</td>
<td>None, given generality of license</td>
<td>Strong judiciary</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Main regulatory issues, including ( r_p - x ) with a specific ( x ) written into license</td>
<td>License alterable only with consent of company or through a precise process requiring the approval of three separate bodies. Informal restraints on abuse of power by sovereign</td>
<td>Strong judiciary, plus custom</td>
</tr>
<tr>
<td>Argentina</td>
<td>Explicit price adjustment formula</td>
<td>Appeal to executive</td>
<td>No judicial appeal</td>
</tr>
<tr>
<td>Philippines</td>
<td>None</td>
<td>None</td>
<td>Weak judiciary</td>
</tr>
</tbody>
</table>

utilities were aggressive investors in the four episodes in which the restraining mechanisms were in place (table 2). By contrast, only one of the remaining four cases, Argentina, shows any significant private investment by telecommunications utilities (although only two years have elapsed since privatization and the evidence remains limited).

**Substantive Restraints within the Regulatory System.** The regulatory system imposed solid substantive restraints on regulatory discretion in four of the eight regulatory episodes examined—Chile since 1987, Jamaica prior to 1962 and again since 1988, and the United Kingdom since 1984 (see table 2). Both Chile and Jamaica also went through episodes during which only limited
restraints were imposed on the range of regulatory decisions. The Philippines has never had a system that imposed substantive restraints on regulatory discretion. Argentina has repeatedly announced regulatory rules that incorporate some restraints but cannot be said to have a well-defined system, since no system has yet remained in place for more than a year or so without some revision.

Substantive restraints differed sharply in their specific content. Jamaica and Chile incorporated substantive restraints into the detail design of their regulatory systems. Jamaica’s system guaranteed that the utility’s rate of return would remain within a narrow band—preset in 1988 for twenty-five years. Chile’s regulatory system sharply constrains the regulator, both by delineating a precise process for deciding which telecommunications activities are “noncompetitive” and so subject to price regulation and by basing regulated prices on a predetermined formula.

The U.K. regulatory system constrains the regulator primarily through the regulatory process rather than through the substance of the rules. All telecommunications companies require a license that stipulates the regulatory regime under which they operate. For example, the innovative price-cap regime is stipulated in the license of the main network operator (British Telecom) but not in that of the other network operator (Mercury). The company has to agree to any change in the license, or else a specific license amendment process comes into play that requires consent to the regulator’s decision by the Monopolies and Mergers Commission and the secretary of state of trade and industry. Thus, while in principle the retail price index minus X (RPI – x) price-cap formula gives the regulator broad discretionary power—in setting X, in defining sub-baskets of services, in setting the specific RPI – x formula for each subbasket, and even in changing the various RPI – x formulas at any time—in practice the license amendment process has restrained the regulator. What constrains the regulator is that decisions made without the agreement of the regulated firm must be approved by three independent authorities. These three authorities can be expected to differ in their regulatory views, and two of them enjoy considerable independence from the government of the day. Even with these procedural constraints, however, the U.K. regulatory authority has substantially more discretion than the Chilean or Jamaican authorities.

**Restraints on changing the regulatory system.** Since a regulator facing binding substantive restraints may seek reforms that offer broader discretion, restraints built into a regulatory system are meaningful only to the extent that the system cannot easily be changed.

Restraints on changing the regulatory system were in place in all three countries with systems that limited regulatory discretion (see table 2). The form these restraints took varied according to differences in the countries’ institutional endowments.

In Chile, with its separation of powers and fragmented legislature, laws are difficult to change. In such an environment the regulatory system—assuming that it can be legislated into existence in the first place—tends to be stable. In
Jamaica and the United Kingdom, with their sovereign parliamentary systems, the mere existence of a law governing regulation, however precise, provides little assurance that the regulatory system will not be modified when a new government takes power. In all but the 1966–75 episode of investment slowdown, Jamaica resolved its commitment problem by incorporating its regulatory system into a legal contract that all parties viewed as binding, thanks to the constraints imposed by the judiciary’s historical commitment to upholding property rights. The utility’s license to operate stipulated the precise rate of return to which it was entitled, the duration of the license, and the requirement that both utility and regulator agree to any changes in the license.

In the United Kingdom the reformers of the 1980s chose to follow a different path from regulation by license. While building important restraints into the license, they also provided enough flexibility to the regulator—and to future parliaments—to change regulatory rules within the contours of the system. Yet they also built on customary restraints on the abuse of sovereign power, specifically implicit understandings (potentially enforceable in court) that Parliament cannot overturn without compensation explicit legislated commitments made by previous parliaments to private parties. If a new government were determined to change the regulatory system without waiting until it could appoint its allies to all three authorizing agencies, it could pass an enabling law, but it would risk being required by the courts to pay damages and provoking a crisis of legitimacy. The reforms of the 1980s appear calibrated so that the costs of such an action would be higher than the costs of simply waiting until the desired regulatory changes could be made within the existing system.

Enforcement of Restraints. Neither substantive restraints built into a regulatory system nor restraints on changing that system carry any commitment force unless backed by an impartial judiciary with the power to resolve conflicts. All three countries whose regulatory systems have successfully constrained the discretionary power of regulators have independent and well-regarded judiciaries. And in all three countries the judiciaries have a record of hearing and impartially resolving regulatory disputes.

The Chilean case study describes how the judiciary became involved in a series of disputes surrounding telecommunications regulation. Jamaica’s judiciary heard cases frequently in the period before 1966, although no disputes over the terms of the 1988 license have yet been brought to court. The U.K. judiciary commonly heard cases on utility licenses before World War II. Although no cases involving the 1984 Telecommunications Act have found their way into court, the case study provides evidence that the threat of legal action has restrained regulators in the United Kingdom.

Commitment Problems

In four of the eight regulatory episodes, countries possessed institutions capable of restraining arbitrary administrative action, used these institutions to put in
place regulatory systems to restrain arbitrary administrative action, and suc-
cceeded in attracting private investment. The remaining four episodes—Chile
from the late 1940s until 1973, Jamaica between 1962 and 1975, the Philip-
pines, and Argentina—are more of a mixed bag.

The episodes in Chile and Jamaica appear to be cases of missed oppor-
tunities. Both countries are endowed with institutions capable of restraining
arbitrary action and therefore encouraging private investment. Yet in both
episodes there was a failure to build substantive restraints on the regulator into
the system. Chile's 1930 law imposed a ceiling (but, until amended in 1958, no
floor) on the rate of return and gave the government the right to intervene in
the company's operations under vaguely defined circumstances. Jamaica's reg-
ulatory system between 1966 and 1975 was modeled on the U.S. system and
promoted participation in an open-ended regulatory process by a wide range
of interest groups—but without the judicial safeguards that protect utilities in
the United States. Consequently, in both episodes private utilities eventually
failed to invest, and the resulting conflicts with the government culminated in
nationalizations.

The Philippine case is one in which domestic institutions appear to have
provided an inadequate foundation. Although the telecommunications sector
has always been privately owned, there were virtually no restraining influences
on the ability of the elite that gained control of the executive to channel
resources to itself and its clients. The Philippine constitution gave the executive
the upper hand over the legislature during civilian rule (a dominance that was
even more extreme during the Marcos dictatorship), and the judiciary lacked
independence from the other political institutions. In such an environment there
was neither the incentive nor the ability to put in place a regulatory system
capable of restraining administrative discretion and supporting the development
of a dynamically efficient telecommunications sector. Rather, the rhythms of
investment were attuned to the ebb and flow of political actors friendly to
private telecommunications companies. Investments appear to have responded
to incentives for rent extraction rather than to any sustained effort to develop an
efficient local telecommunications industry.

A key question for the Philippines is whether this perverse pattern could have
been prevented by a regulatory process that curtailed the discretionary options
of the regulator. It is unclear, however, how such a system could be enforced
against the will of the executive, given judicial weaknesses and broad skepticism
in society about the importance of the rule of law.

In Argentina privatization occurred against a background of endemic political
instability and without a clear regulatory structure in place. Both during priva-
tization and subsequently there were repeated changes in the organization of the
regulatory agency and in price regulations. Perhaps it was as a consequence of
these uncertainties about long-term stability that the two operating consortiums
bid an amount equivalent to about two years of cash flow for 60 percent of the
two telecommunications companies.
Why, in the face of this instability, have the newly privatized firms in Argentina been investing at substantial levels? In the short term, the confidence to invest appears to have come from the momentum of an ambitious economywide reform program and an associated economic recovery. However, unless credible basic design features are put in place, the risks of administrative expropriation may grow over time, and investment may lag. Despite past weaknesses, Argentina's political institutions may provide a basis for making credible commitments as long as the judiciary has some independent enforcement capability. If democracy becomes firmly entrenched, power is likely to be more fragmented across the executive and the legislature and within the legislature. That would make it difficult to change regulatory reforms that limit administrative discretion through specific licenses or legislation, thereby providing safeguards for future investments. Argentina's nascent regulatory system has not yet been embodied in law, and the opportunity is there to move beyond a reliance on momentum and presidential decrees and build commitment on the basis of the country's institutions.

Broadening the Menu of Commitment Mechanisms

The case studies suggest that countries such as the Philippines that lack crucial institutions will be unable to construct a regulatory system which can credibly restrain arbitrary action. The studies also suggest that the threat of arbitrariness will deter private investment in utilities. In principle, when adequate restraints are missing, public ownership and investment can substitute for private investors. However, in most countries the record of public ownership is dismal. So, over the long term countries that seek private participation and investment in utilities as an alternative to dysfunctional public utilities but that lack the requisite core institutions have no alternative but to reshape their institutional base. A strong judiciary is crucial, but other approaches will be needed in the interim. These approaches fall into two broad categories: those that do not require the missing institutions as a foundation, and those that use international substitutes for the missing national foundations.

One way to establish a restraining mechanism that bypasses the missing institutions is through a privatization program designed to limit opportunities and incentives for government to renege on its commitments. Distributing ownership among as broad a share of the population as possible introduces a stake in the performance of the privatized company. Building a broad base of shareholders was important in the privatization of telecommunications in the United Kingdom and played a modest role in Argentina, Chile, and Jamaica. However, attempts at widespread ownership depend on the prior development of security regulations, which may not be up to standards, as was the case in the Philippines. Similarly, widespread ownership may require the development of private institutional investors (for instance, pension funds and insurance companies) that provide a low-cost conduit for widespread and diversified stock ownership.

Levy and Spiller
Chile, the United Kingdom, and, to some extent, Jamaica have developed this type of institution, thus facilitating the further development of investment safeguards.

Another option is to privatize enterprises sequentially or to sell shares in individual enterprises through sequential offerings. Since the success of a sequenced program depends on the government’s abiding by the agreements it made in the early steps, the costs to the government of reneging on its agreements can be high. Argentina provides the clearest example of this approach. Its privatization of telecommunications was the first, dramatic step in a sweeping program to privatize public enterprises. The potential impact of the government’s actions on the success of the remainder of the program inspired confidence in the private buyers of the telecommunications utility that the government would refrain from administrative expropriation.

As for international substitutes for missing national foundations, among the countries studied, Jamaica and the Philippines in the 1950s come closest to using this mechanism. Jamaica’s judicial system continues to recognize the Privy Council in London as the final arbiter, conferring continued credibility on its own regulatory system. The Philippines was granted independence from the United States in 1946, but for the next fifteen years the continuity of its preindependence institutions, the strong influence of the United States, and specific agreements protecting U.S. investors provided a predictable and safe environment that facilitated investment by both Philippine and U.S. investors. Although the specific agreements with the United States have lapsed, the Philippine Long Distance Telephone Company remains subject to some extranational controls as a company with shares traded on the New York Stock Exchange.

The potential exists to go even further in using international institutions as substitutes for domestic weaknesses in commitment capability. One innovation that has begun to receive attention is for the World Bank to provide private investors (and lenders) with guarantees against noncommercial risk, including the risk of administrative expropriation. These guarantees are provided at the request of the host country, which becomes liable for repaying the World Bank in the event that private investors call in the guarantee. A failure to repay would provoke a costly rupture of the country’s relationship with an important international institution. Through such guarantees, the country’s good standing in the international community and its continuing commitment to regulatory restraint are held hostage to each another—providing a credible commitment against administrative expropriation.

The Robustness of Commitment Mechanisms

A nation’s institutional endowment incorporates not only formal and informal institutions but also patterns of social conflict that may influence the country’s regulatory system.

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At one extreme, the Philippine and Chilean case studies suggest that the absence of restraints on regulatory discretion may not always constrain investment. Notwithstanding the vagueness of the Philippine regulatory system, a repeated pattern appears of substantial private investment in telecommunications immediately after a government comes to power that is aligned with the group controlling the telecommunications utility. Investment trails off, however, in the later years of the regime and in periods when relations between the utility and the group in power are more distant. Similarly, Chile's 1930 law governing telecommunications offered little explicit protection against administrative expropriation. At the time, however, Chilean social and political structures were viewed as exceedingly stable and supportive of private investment, so the absence of specific restraints did not deter participation and investment by the private owner of the telecommunications system. Within twenty years social forces had arisen that were hostile to profitable private participation in utilities. Consequently, by the late 1940s private investment began to lag, and demand emerged for specifying more precisely the commitments of both the government and the utility through regulation.

At the other extreme is the possibility that powerful social forces may come to favor regulatory action inconsistent with regulatory designs that constrain administrative discretion. This synthesis has attempted to present lessons from the experience of five countries on the kinds of basic regulatory designs that might successfully withstand such pressures. This confrontation, however, has not been fully tested in any of the episodes analyzed. In none of the episodes has there been present both a regulatory system with a robust basic design and powerful social forces opposed to the restraints built into that regulatory design. In the countries studied here, this acid test of our policy suggestions must await some future turn in the political tide.

**Regulation and Efficiency**

Successful regulatory policy rests on the development of a basic regulatory design that constrains arbitrary administrative action and so induces private investment. Focusing only on basic design, however, is not enough. Guidance is also needed on the specific content of substantive regulatory rules. A unified approach to regulatory policy incorporates detail design (rules on pricing, entry, and interconnection) into the analysis and considers the impact of regulatory rules on the efficiency of private utilities.

The literature on the relation between detail design and utility efficiency is vast. The focus here is on how the requirements of basic regulatory design can determine which detail designs are workable in individual country settings. To examine this relationship, it helps to look first at the efficiency properties of some approaches to detail design adopted by the case study countries, ignoring for the moment the limitations imposed by institutional endowments and the requirements of basic regulatory design. Issues of competition and pricing form...
the framework for this analysis. The next section reintroduces these constraints, helping to clarify why Chile, Jamaica, and the United Kingdom made the detail design choices they did, and explores whether they could have chosen more efficient alternatives. An analysis that incorporates the full range of constraints on the design of regulatory systems reveals that some countries will have to settle for second-best (or even third- or fourth-best) solutions when it comes to regulatory rules if their regulatory system as a whole is to be workable.

Competition

Competition can be a powerful spur to innovation and technical efficiency. When a country’s major telecommunications company has failed to develop an adequate nationwide telecommunications network, the normative case is strong for opening up the sector to competition. Yet this normative argument must respond to the long-standing view that there are elements of a natural monopoly in utilities, including telecommunications.

There is a heated, ongoing debate among telecommunications specialists about which services are subject to diminishing marginal costs over the range of service provision and therefore have elements of monopoly power. And tomorrow’s answer may be different from today’s. Nonetheless, there appears to be some agreement that economies of scale still exist in the operation of a fixed-link network in a particular locality but that there is ample scope for competition in value added and long-distance services and in complementary networks (such as fiber optics and cellular networks).

In the discussion here, local economies of scale are assumed to be sufficient to require some regulation of utility pricing in segments where firms are assumed to enjoy substantial monopoly power. Beyond this limited domain, the presumption should be in favor of competition and deregulation. Opportunities for competition in segments in which monopoly power is not inevitable, however, can be realized only if ready interconnection among various telecommunications services is guaranteed. In settings where dominant providers have the potential to wield monopoly power over access to the network, the rules governing interconnection may need to be explicitly spelled out and aggressively enforced.

Three aspects of competition in telecommunications are important here: the range of activities for which licensees are granted exclusive monopoly rights; the restrictiveness of entry (including the rules and practices governing interconnection) into areas not formally designated as exclusive; and the transparency and clarity of the line drawn between activities subject to price and other regulation and those that are not. Even if entry and interconnection pose no problem, firms entering into unregulated activities run the risk of administrative expropriation through later arbitrary regulation when the line between regulated and unregulated activities is not clearly drawn.

There is substantial variation in the extent to which the regulatory regimes in the countries studied facilitate competition (table 3). Jamaica clearly has the
Table 3. Current Regulation of Telecommunications Competition in Five Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Restrictive licensing practices</th>
<th>Rules governing interconnection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Two licensee companies given exclusive licenses to supply basic services in separate regions for up to sixteen years, plus one exclusive license for international and long-distance services for limited period</td>
<td>Operators required to provide interconnection; regulatory agency has right to intervene</td>
</tr>
<tr>
<td>Chile</td>
<td>No exclusive licenses, but price regulation in noncompetitive sectors</td>
<td>Obligatory interconnection according to prespecified terms; enforcement adjudicated by regulator, antitrust commissions, and courts</td>
</tr>
<tr>
<td>Jamaica</td>
<td>Single, exclusive monopoly over all telecommunications services for twenty-five years</td>
<td>None</td>
</tr>
<tr>
<td>Philippines</td>
<td>No exclusive licenses, but entrants require separate permissions from regulator and Congress</td>
<td>Vague rules and weak enforcement</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Entry into fixed-link services restricted to duopoly, 1983-90; subsequently opened, but all licenses provided at discretion of regulator and Department of Trade and Industry (on parliamentary authority)</td>
<td>Obligatory interconnection, subject to payment to fixed-link provider negotiated by parties, with regulator as arbiter</td>
</tr>
</tbody>
</table>

most restrictive policies. A single firm has received an exclusive license to provide all telecommunications services for twenty-five years. The Philippines and Argentina are intermediate cases. In the Philippines licenses are not exclusive, but firms seeking to enter the telecommunications industry require separate approvals from the executive branch (through its tame regulatory agency) and the legislative branch of the government. Getting those approvals is a highly discretionary and politicized process. In addition, enforcing interconnection has proved difficult without the cooperation of the dominant company. Argentina granted region-specific licenses to two firms to provide all local and long-distance voice telephone services (including international but not value added services). However, this exclusivity was granted for a maximum of ten years, and some specific service areas were opened to competition from the start of privatization. It is too soon to tell whether rules requiring interconnection will be enforced.

Regulatory regimes in the United Kingdom and Chile are the most liberal with respect to entry. In the United Kingdom entry restrictions into fixed-link services that were in place between 1983 and 1990 have been lifted, and regulators have been liberal in approving requests for entry across the range of telecommunications services. After some initial conflicts, interconnection has proceeded smoothly. Chile also has liberal licensing policies, as well as interconnection.
rules and enforcement mechanisms ensuring that firms granted licenses are able to operate. An interesting feature of the Chilean system is its specification of a transparent, impartial process for defining which activities are "noncompetitive" and thus subject to price regulation and which activities remain unregulated.

Overall, only Chile and the United Kingdom come close to having regulatory systems that facilitate competition. Yet it is premature to conclude that competition policies adopted in the other countries were wrong. A central implication of this study is that the detail design of a regulatory system cannot be adequately assessed without consideration of the country's institutional endowment. In some countries the institutions and basic regulatory design foundations will be inadequate to support a regulatory system that takes advantage of the full range of opportunities for competition which might be opened up by technological change.

**Price Regulation**

Chile, Jamaica, and the United Kingdom adopted different approaches to price regulation. (Argentina's system of price regulation is too new to evaluate, and the Philippine system is too vague.) Of these three, only Jamaica pursued a straightforward rate of return method. While the shortcomings of this regulatory approach are legion and will not be recapitulated here, three features are especially relevant. First, a regulatory system that gives a utility the right to a prespecified rate of return is inconsistent with free entry, since competing entrants will drive the rate of return below the specified level; as noted, Jamaica granted monopoly power across the entire telecommunications system. Second, under rate-of-return regulation, firms are in principle free to set their own prices, subject to the overall return constraint, so prices for different services could reflect the differential costs of service provision. In practice, however, Jamaica has imposed restrictions on the pricing of local calls, with important consequences for allocative efficiency. Third, rate-of-return regulation requires the regulator to monitor carefully the utility's revenues, costs, and capital stock to ensure that the utility remains within the imposed rate-of-return ceiling.

Chile has also adopted rate-of-return regulation for noncompetitive telecommunications activities, but of a radically different form than Jamaica's. The relevant rate of return is for a benchmark best-practices firm and is not prespecified but is calculated according to a formula based on a capital-asset pricing model that approximates the risk-adjusted earnings of a competitive firm. With this calculation in hand, Chile's regulators use another formula, which takes the long-run marginal cost of each service as the point of departure, to produce a detailed, efficient maximum price schedule consistent with the target rate of return. These are the maximum prices that prevail in the regulated segments of the telecommunications market. Note, though, that Chile permits entry into even these regulated segments. (Chile imposes benchmark regulation only in market segments deemed not to be contestable and has an explicit procedure of public hearings for determining whether contestability exists in individual segments.)
Properly implemented, benchmark regulation has some powerful efficiency properties. Its prices are allocatively efficient. Utilities are not locked into a specific rate of return, so they have substantial incentives to pursue static technical efficiency and to control costs. And as long as the price schedule of the notionally efficient firm is recalibrated relatively frequently (Chile recalibrates every five years), operating utilities are prompted to keep up with international best practices.

The RPI - x regulatory system adopted in the United Kingdom shares many of the efficiency virtues of benchmark regulation. In principle, the regulator's task is simply to impose a ceiling on overall increases for a bundle of prices and to ensure that the regulated utility does not stray above the ceiling. In practice, the regulator has also imposed some individual restrictions on price increases. Since in principle individual prices need not be controlled, the departures from an allocatively efficient optimum need not be egregious. Furthermore, since RPI - x targets a bundle of prices and not rate of return, the utility has an incentive to pursue both static and dynamic gains in technical efficiency that is absent in traditional rate-of-return regulation. And, unlike in the traditional rate-of-return approach, free entry is not inconsistent with RPI - x regulation. As a consequence, regulated firms are under market pressure to improve static and dynamic technical efficiency in segments that are potentially contestable. Should competitive pressure be limited, the regulator can encourage innovation and upgrading by increasing the stringency of the RPI - x formula.

A Unified View of Regulatory Choice

When government–interest group and government-firm contracting problems are excluded from the analysis, the primacy of regulatory policies that take full advantage of opportunities for competition is clear. And among segments of the industry in which significant elements of monopoly persist and some form of price regulation might be called for, both benchmark and RPI - x regulation appear clearly superior to rate-of-return regulation. Furthermore, both appear to have sound efficiency properties. Viewed from a broader perspective, however, these conclusions become questionable.

An implicit assumption of analyses that attempt to rank alternative approaches to regulatory detail design according to their efficiency is that detail designs are readily transferable—that any scheme can be used in any country. The broader perspective adopted here implies the need for a reasonable match between detail design and the basic design foundation on which it rests if the detail design is to yield the expected outcome. It also implies that the basic design of the regulatory system needs to take its shape from the country's specific institutional endowment; again, if the fit is poor, private investors will have little confidence that regulatory discretion will be restrained. Together, these propositions imply that the notion that the first-best solution to the problem of the design of regulatory rules is readily transferable across countries is mistaken.
Institutional Endowments and Basic Regulatory Design

Although there seems to be no one-to-one relation between institutional endowment and basic regulatory design, the case studies suggest that not all approaches to basic design will work in all countries. In some institutional settings regulatory restraints need to be specified with great precision, whereas in others more flexibility in regulatory design is possible. In general, the potential for flexibility will be highest in countries (such as the United States) in which informal norms restrain the arbitrary use of government power even when explicit legal restraints are absent and in countries in which an institutionalized process of argumentation and consensus formation sets de facto limits on the allowable extent of administrative expropriation.

Of the five countries studied, the three that have established successful regulatory systems are also the three that have the institutional endowments necessary to lend credibility to precise regulatory restraints. Of these, however, only Chile and the United Kingdom have institutional settings that allow relatively flexible regulatory structures to be credible. The U.K. system is designed to respond flexibly in the short term as well as the medium term. Chile's system is built on a very specific law with both substantive and procedural implications that permit flexibility only over the longer term: the law incorporates specific provisions for recalculating best-practices prices every five years in response to technological changes and for redefining competitive and noncompetitive sectors.

Regulatory Design and Price Regulation

Institutional endowments and the basic design features of the regulatory system constrain a country's choices with respect to price regulation. Both Chilean-type benchmark regulation and Jamaican-style rate-of-return regulation are built on very specific regulatory rules and consequently can be straightforwardly implemented in countries with the institutional capability to enforce such rules. Viewed from this perspective, the Chilean and Jamaican designs appear interchangeable, apart from a few technical legal differences. Jamaica could have incorporated Chile's price-setting rules into its license agreement, and Chile could have applied a simple rate-of-return regulatory formula and written its regulatory rules into a contractual agreement enforceable in court. Further, the United Kingdom could have chosen to do anything Jamaica was in a position to do—regulating by a license with a variety of alternative terms enforceable in court.

U.K.-style RPI $X$ regulation, however, is not readily transferable because it leaves substantial discretionary authority to the regulator. The regulator is constrained rather loosely by a specific process built around the integrity and independence of the various layers of authority required to approve amendments to RPI $X$ and by a range of informal norms which ensure that the process cannot easily be manipulated. This regulatory process could not readily be transferred
to, say, Jamaica, where the regulatory administration is highly politicized. Jamaica does not have a single regulatory agency with substantial visibility and a reputation for independence, let alone the multiple layers of independent authority necessary. Thus, if U.K.-style RPI - x regulation were implemented in Jamaica, private investors might reasonably expect the X factor to increase drastically at the first price-cap renewal.

Chile, on the other hand, could have adopted a system much like that of the United Kingdom. Its independent Resolutive Commission, with its composition designed to ensure neutrality, would have at least as much credibility as the Monopolies and Mergers Commission does in the United Kingdom. Furthermore, because laws are more difficult to change in Chile than in the United Kingdom, an RPI - x type of regulation would have greater commitment power.

RPI - x regulation need not, however, be implemented only in its U.K. variety. Its crucial innovation is to target regulation on output prices, not on the rate of return, and thereby to provide incentives for improving efficiency. One way to get around the open-ended character of the RPI - x approach while retaining its central innovation would be to write an explicit and unchangeable X factor into the regulatory system. That would enable an RPI - x approach to be implemented in institutional settings that require a basic regulatory design built around very specific regulatory restraints. However, a fixed X may be more suitable in a relatively stable sector, such as water or ports, than in a sector such as telecommunications in which technological change is so unpredictable that a fixed X may be lead to undershooting or overshooting of profits. The resulting social pressures for change would be likely to induce renegotiation of the regulatory arrangements, making a fixed RPI - x regulatory system unsustainable in the long run and therefore unlikely to foster investor confidence.

The U.K. and, to a lesser extent, the Argentine case studies highlight the problem. U.K. regulators closely monitor the profitability of the regulated utility and use that information when deciding how and when to adjust the X factor. As the utility learns that its efforts to improve technical efficiency translate relatively rapidly into more stringent price regulation, its incentive to improve efficiency will be undercut. Argentina initially intended to adopt a variant of RPI - x with a set X, but the rules governing price regulation have undergone several changes, creating some continuing uncertainty. Unsustainably high levels of profit in the telecommunications utilities may have prompted some of these changes.

Thus an RPI - x formula with a fixed X may not give private investors as much confidence in the regulatory system’s ability to prevent arbitrary action as a variant of rate-of-return regulation.

Regulatory Design and Competition

Institutional endowments and the choice of the basic regulatory design limit the role that competition can play in telecommunications in several ways. Procom-
petition policies can come into conflict with institutional realities in countries
where political pressures for price cross-subsidization between long-distance and
local services are high. Jamaica, for example, moved forward with privatization
in the expectation that the newly privatized utility would invest to improve the
local network. To fund those improvements, the government expected the utility
to make and use profits from long-distance and other specialized telecommunications services rather than increase the cost of local services (or receive subsidies from the government to cover the investment). As a consequence, entry into virtually all telecommunications services was barred, since competition in long-distance and international services would have eliminated the cross-subsidy of the local network. Thus, except for local services, prices are set at inefficiently high levels and, with no competition, little pressure is put on the utility to pursue static and dynamic technical efficiency.

A broader perspective, however, suggests that Jamaica’s regulatory decisions
may not be as wrong-headed as they seem when viewed solely on efficiency
grounds. Jamaica has a two-party parliamentary system in which the middle
class, who are heavy users of local telecommunication services, are swing voters.
Given the political sensitivities this pattern generates and the pressures for subsidizing local utility services, it is empty rhetoric to argue that designers of the
regulatory system should proceed as though such social pressures can be
ignored. Moreover, for all the inefficiencies of the regulatory system, investment
has been heavy, and welfare has improved as a result of ownership and regulatory reforms. No readily available alternative regulatory scheme would have
been both more efficient and politically viable (although, with the benefit of
hindsight, the case study suggests some modifications that might have allowed
for more competition in some areas of the telecommunications market). Yet the
fact remains that price rebalancing could substantially boost national welfare,
and so it is reasonable to expect that the company and regulators will take
advantage of any opportunity for rebalancing that might arise.

Another way in which institutional realities can lead to restrictions on entry is
evident in settings such as Argentina, where high rents might be needed up front
to attract private investors. Given Argentina’s turbulent history, private invest-
tors were likely to discount heavily any returns that might be earned over the
longer term—hence Argentina’s decision to offer seven-to-ten-year exclusive
licenses to two firms and to apply price regulation arrangements that were not
very stringent. The United Kingdom also adopted a seven-year duopoly provi-
sion (although with rather more stringent regulation) as a way of providing
British Telecom and the new private entrant a period for investment during
which their returns would be reasonably secure.

Another institutional restraint on competition could come from the combina-
tion of a weak regulatory authority and a large and influential telecommunications firm, leading to “capture” of the regulatory authority by the firm. Regula-
tory capture along these lines could manifest itself either in explicit restrictions
on the provision of licenses or in a failure to require or enforce interconnection.
The Philippine case provides a clear example of such a pattern and suggests that under such circumstances there is little point in trying to write procompetition regulations or to strengthen the regulatory agency. In the absence of a more fundamental shift in political power, such efforts are doomed to fail. In these circumstances reformers face the difficult choice of trying to achieve limited change at the margin or of waiting for a politically opportune moment to introduce more fundamental reform.

Even in settings where political realities do not constrain competition, other institutional weaknesses may limit a country's ability to take advantage of opportunities for competition that arise as technology changes. The dilemma is that the regulatory regime governing noncompetitive activities typically will be very different from that governing competitive activities. For private firms to invest in either type of activity, they need to feel confident that regulatory regimes will not be changed arbitrarily later on. Yet as technologies change, so do the opportunities for competition in individual activities, creating situations in which formerly closed activities ought to be opened to competition.

Chile and the United Kingdom appear to have devised basic regulatory designs that credibly limit opportunism and provide for flexibility in determining whether activities are competitive. Chile’s system of price regulation applies only to market segments regarded as noncompetitive. Although a segment that is unregulated today could be deemed noncompetitive and subject to regulation in the future (and vice versa), such changes require the agreement of an independent commission. To bring a previously competitive segment under regulation, the regulator has to follow a precise pricing rule and method, diminishing the potential for opportunistic regulation. In the United Kingdom whether a firm is subject to price regulation is stipulated in its operating license. Although a procedure is specified for modifying the operating license should the underlying competitiveness of an activity change, the procedure affords some protection against arbitrary administrative action.

The opportunities for redefining competitive and noncompetitive activities without undermining the credibility of the regulatory system appear more limited in countries that lack the institutional endowments needed to ensure credible restraints on arbitrary action within a flexible regulatory system. Credible regulation in such settings requires specific and inflexible rules, including rules that lock in explicit decisions about which sectors are competitive and which are not. Even when technological changes render formerly noncompetitive sectors competitive, countries with weak institutional endowments may have no alternative but to live with these rules, since by changing them they risk undermining the credibility of the regulatory system.

Regulation Design and the Independence of the Regulatory Agency

Regulatory agencies cannot be designed without reference to the tasks they are supposed to accomplish. Consider the case of Jamaica, where the current basic...
regulatory design limits the choices available for detail design. As a consequence, the regulator has little to do but to see that the company's accounts are properly set and that minimum quality standards are satisfied. It is not surprising that Jamaica has no independent regulatory agency and that the public utilities unit of the Ministry of Transport and Communications performs the required regulatory functions. A strong regulatory agency would be likely to view these tasks as inadequate to its powers. Conflict would thus arise that would have to be dealt with by cutting the regulatory agency down to size or by accepting an endless stream of referrals to the courts.

The Philippine case provides an obvious counterargument to the presumption that independent agencies will not be subject to political interference. The purpose of regulatory discretion there has been to ensure that the regulator does what the executive wants done. Considering the country's institutional endowment, there is little prospect that discretion (that is, the absence of formal restraints on action) will translate into genuine independence. Even Jamaica's public utility commission of the late 1960s and early 1970s, which was a truly independent agency, demonstrated that the substantial scope for regulatory discretion could turn out to be a liability rather than an asset.

The case studies show that regulatory independence from politics may be better ensured by limitations on the regulator than by the agency's particular placement in the government hierarchy. Even in the United States regulatory agencies have relatively little discretion when Congress is united on a particular issue, and the courts have a substantial say in regulatory policy, whether the agency is part of the executive branch (for instance, the Environmental Protection Agency) or is a truly independent agency, such as the Federal Communications Commission (Weingast and Moran 1983; Spiller and Gely 1990). In both Chile and the United Kingdom the regulatory agency is part of the executive branch. The board of directors of Chile's regulatory commission includes many senior cabinet ministers, while the U.K. regulatory agency is part of the Department of Trade and Industry. Argentina's regulatory commission is part of the Ministry of Finance, and the regulatory agency of the Philippines is quasi-judicial, its decisions appealable only to the courts. This placement has not ensured independence for either the Argentine or the Philippine regulator. While the Argentine regulator's lack of independence may be related to the fluidity of current politics, the lack of independence of the Philippine regulator stems from the fact that the head of the agency has no fixed tenure and can be dismissed at will by the president.

The case studies similarly note the flaws in the notion that self-financing promotes independence. The U.K. regulatory agency imposes fees on the telecommunications companies to fund its activities, yet Parliament has to approve each agency's budget every year. So far budgets have matched receipts from user fees, but it is conceivable that budgets could be reduced or expanded. Argentina also imposes a tax on telecommunications providers to fund its regulatory agency, yet during its first two years of operation the agency has not had control...
over these supposedly earmarked resources. As Chile’s experience shows, a lack of formal financial independence need not mean that agencies are starved for cash.

As for regulatory capture, although the revolving door is as much a fact of life in many of the five countries examined as it is in the United States, it was not singled out in any of the cases as a major determinant of regulatory policy. For example, the three engineers who designed Chile’s regulatory system for electricity came from the country’s main electric power company, and several former electric power regulators are today senior executives of electricity companies in Chile. Nevertheless, Chile’s electric power regulatory system minimizes the potential for capture (Spiller and Viana 1992). Capture is a stronger possibility in countries where the regulatory system confers large discretionary powers on the regulator. In such cases, it may be useful to design safeguards against capture by, for example, creating opportunities for participation in the regulatory process by all interested parties.

In sum, an important lesson from the case studies is that the independence of the regulatory agency has been oversold as a regulatory issue. The goal of regulatory design is to establish a flexible and efficient set of rules built into a system that credibly restrains arbitrary administrative action and thereby helps to attract private investment. It is true that if all parties viewed regulators as professional and above reproach, these goals could be achieved simply by granting regulators independence and the discretion to make wise decisions. That is rarely the case, but there are other ways of achieving confidence in the credibility of the regulatory system over the long term. It certainly did not matter in Chile that the regulatory commission was not politically independent, or in the United Kingdom that OFTEL is part of the Department of Trade and Industry. Jamaica’s Public Utility Commission of the 1960s and 1970s was an independent agency, yet the lack of administrative restraints resulted in miserable performance.

Administrative Requirements of Regulation

A final criterion for distinguishing among alternative regulatory schemes is the intensity of the administrative demands they impose on regulators. Administrative intensity is a slippery notion, but here two specific dimensions are relevant: how cumbersome, time-consuming, and controversial are the tasks imposed on a regulatory agency, and how difficult to understand, and thus to implement properly, is the regulatory scheme? A country’s ability to handle both dimensions of administrative intensity is likely to depend on the quality and technical skills of its human capital.

By either dimension of administrative intensity, RPI - X emerges as a simple regulatory scheme. Its underlying logic is straightforward, and it imposes only limited tasks on the regulators. Viewed solely from an administrative perspective, it is the hands-down winner.
By contrast, both traditional and benchmark rate-of-return regulatory schemes can be administratively cumbersome and technically demanding. Benchmark regulation requires the regulators to simulate the costs of the best-practices firm; to adapt this simulation periodically to changes in best-practices technology; to estimate the allowable, risk-adjusted competitive rate of return; and to calculate a detailed set of prices. Chilean regulators have apparently struggled to implement this system adequately, relying on international consultants to prepare the necessary technical material. But the complex technical work of benchmark regulation needs to be undertaken only infrequently (every five years in Chile). By contrast, a traditional rate-of-return approach requires regulators to monitor the utility's revenues, costs, and capital stock annually to ensure that the utility remains within the imposed rate-of-return ceiling. Inevitably, traditional rate-of-return regulation gets bogged down in controversies about what should be included in the capital base against which a utility's rate of return is computed—a problem that is bypassed by benchmark regulation, which simulates the prices charged by a theoretically efficient firm.

Benchmark regulation falls short, however, in the second dimension of administrative capability: it requires sophisticated regulatory training to understand and to judge whether the prices calculated according to its rules are indeed reasonable approximations of the behavior of the putatively efficient firm. In Chile an explicit process is laid out for resolving disputes between the regulator and the utility over the appropriate regulated prices. The success of this process, however, seems to depend on the ability of the major actors to evaluate competing proposals on their empirical merits. Chile and a number of other Latin American and East Asian countries are well endowed with professionals capable of performing such evaluations.

Where that is not the case, the risk of wildly unstable regulatory outcomes is likely to be high. Consequently, where commitment problems make RPI - X regulation unworkable, the requisite technical capability is absent or in short supply, and experience with regulation is weak, traditional rate-of-return regulation is probably preferable to Chilean-style benchmark regulation. The Jamaican solution of a total monopoly over the telecommunications sector is not the only way. Traditional or Jamaican-style rate-of-return regulation could be applied to the local fixed-link network, with competition allowed in the remaining sectors. Clearly preferable, however, would be a simplified form of benchmark regulation that avoids the inefficiencies of traditional rate-of-return regulation but that can be evaluated in a relatively straightforward way.

Regulatory Choice: A Summing Up

Private participation and investment can be powerful instruments for improving the performance of telecommunications services in developing countries. Yet success depends on the regulatory and competitive environment in which private firms operate. The choice of an appropriate regulatory scheme is complex.
Efficiency matters, and some regulatory systems are more efficient than others. There is no single regulatory system that is best for all countries.

Three questions in the decision tree depicted in figure 1 show how the design of a regulatory system might vary with a country’s institutional endowment. The first question distinguishes countries that have domestic institutions capable of providing a credible commitment to refrain from arbitrary administrative action from those that do not. Among the countries studied, the Philippines and perhaps Argentina appear to fall in the second category. Countries that do not have such institutions will be unable in the short term to develop a domestic regulatory system capable of sustaining long-term private participation and investment. Nothing is to be gained by devoting scarce resources directly to such an effort. Plausible alternatives include using sequenced domestic reform or international guarantees as a substitute source of commitment, working to alter the institutions—including informal norms of behavior—that constrain regulatory development, or simply waiting until circumstances change.

Within the group of countries that have domestic institutions capable of providing credible commitment, the second question distinguishes countries that require very specific, substantive rules to achieve credibility from those for which process regulation is sufficient. Among the countries studied, Jamaica falls in the first category and the United Kingdom in the second; Chile is an intermediate case. As the U.K. case illustrates, process regulation can provide the flexibility needed to adapt to continuing technological change. The United Kingdom uses a combination of \( RPI - x \) price regulation and firm-specific licenses that incorporate provisions for amendment without the agreement of the firm. The institutional requirements of this approach are demanding, however. Process regulation requires credible restraints on arbitrary changes in the regulatory process and credible conflict-resolution mechanisms. It also requires an organizational structure with multiple centers of decisionmaking to provide checks and balances. Such structure cannot be created by fiat but must build on a foundation of long-standing constitutional arrangements and informal norms.

Within the group of countries that require specific, substantive rules to achieve credibility, the third question distinguishes countries that have strong administrative capabilities from those that do not. Among the countries studied, Chile and perhaps Argentina fall in the first category and Jamaica falls in the second. However, Chile’s regulatory system is also based on procedural requirements, while Argentina’s is as yet unspecified. Chile’s experience illustrates that specific rules of price regulation can achieve flexibility as well as efficiency by incorporating rules for adjusting regulated prices. The administrative demands of such a system are substantial. If, as perhaps in Jamaica, administrative capabilities are limited, a workable regulatory system may need to be based on relatively simple rules, implying substantially less regulatory flexibility and efficiency.

In sum, the success of a regulatory system depends on how well it fits into a country’s institutional setting. If a country sets up a regulatory system that is incompatible with its institutional endowment, privatization may bring disap-
1. Are domestic institutions capable of providing credible commitment?

- No
- Yes

   **Regulatory reform**
   *alone may fail.*

2. Do institutions require very specific substantive rules to be credible?

- No
- Yes

   **Process regulation**
   *may suffice.*

3. Is administrative capability strong?

- No
- Yes

   Only simple regulatory rules may be used.

   Complex regulatory rules may be used.

Appointment, recrimination, and a resurgence of demands for renationalization rather than increased investment and improved services.

**Notes**


2. The risk of administrative expropriation is not the only way in which investment incentives may be distorted. Others include using telecommunications tariffs, in particular on long-distance telecommunications, to finance development and demanding special procurement policies that favor high-cost, ineffective domestic equipment.
3. Actually, we are uncomfortable with the assumption that economies of scale provide sufficient rationale for regulation of local telecommunications services. The magnitude of the allocative inefficiency losses, as such, that result from local monopolies is relatively modest, whereas it is a certainty that the implementation of regulation will fall short of the ideal. So, in a world with no government-firm and government-interest group contracting problems, a plausible case could be made for relying extensively on market forces to promote efficiency, focusing government efforts only on ensuring access via interconnection, and otherwise learning to leave telecommunications entirely unregulated.

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COMMENT ON "REGULATION, INSTITUTIONS, AND COMMITMENT IN TELECOMMUNICATIONS," BY LEVY AND SPILLER

David E. M. Sappington

In this interesting paper, Levy and Spiller deliver an important message for the design of regulatory policy: there is no single "best" regulatory policy for all countries. The best policy for any country depends on the country's institutions and its standard methods of operation, both of which influence the credibility of the regulatory regime.

Stated differently, a country's institutions affect investors' expectations of the returns they will be permitted to earn on their investments. Promises of substantial returns will ring hollow if institutions (for example, a strong judicial system) are not in place to ensure that the promises are fulfilled, particularly if the regulators (or some other branch of government) have a history of expropriating large private returns. Similarly, the potential for earnings will be viewed as meager if regulators have significant leeway to determine the level of "fair" compensation and if they face considerable political pressure to ensure that the firm's profits are not excessive. Thus countries that wish to attract private investment and that lack the institutions to ensure the credibility of regulatory promises must find alternative ways of ensuring attractive financial returns to investors.

Although Levy and Spiller generally take regulatory commitment power to be exogenous, these powers are often endogenous to some extent. To illustrate this point, note that a country hoping to attract investment (a recipient country) can use the commitment power of investor countries abroad to increase the likelihood that foreign investors will receive the returns they are promised. To do so, the recipient country can solicit investment from a country that has the power—and will find it in its own interest—to retaliate strongly against expropriation (see Williamson 1983). From this perspective the ideal investor country may be one that purchases a large proportion of the recipient country's main export. Such a country is in a strong position to inflict damage in the event of expropria-
tion (by imposing tariffs or quotas, for example). To render the threat of retaliation particularly credible, it may be best to solicit investment from a broad coalition of investors in the selected investor country (and, if possible, to include the government as a partner in the project). It may even be in the interest of the recipient country to encourage the investor country to adopt laws that stipulate retaliatory measures if its citizens' investments are expropriated, thus substituting the strong commitment powers of the investor country for the more limited commitment powers of the recipient country.

Of course, it is the credible threat of meaningful retaliation that is crucial here, not the actual retaliation. Having specifically chosen an investor country that will retaliate if its investments are expropriated, the recipient country will choose not to expropriate investments, and no retaliation will, in fact, occur.

Next, consider how operating procedures and production technology in a regulated industry might be structured to limit expropriation. A variety of steps can be taken to ensure the credibility of threats by investors to reduce the services that flow from their investments. For instance, critical operating knowledge can be embodied in human, rather than physical, capital. If investors place foreign managers in key positions in the regulated firm, investors can always threaten to recall these managers if expropriation occurs. Assuming that these managers have essential knowledge about the regulated enterprise, the recipient government may hesitate to expropriate the investment.

Similarly, the recipient government might encourage the adoption of technologies that rely on mobile capital. If it is easy and inexpensive for investors to withdraw their physical investments, the recipient country will be less likely to attempt expropriation. To illustrate, suppose long-distance telecommunications services can be provided either by satellite or by fiber-optic cable. Even though cable may be more efficient, the recipient country might rationally encourage satellites because they can readily be deployed for use in other countries. In contrast, once fiber-optic cable is installed, the cost of removing it far outweighs its value in other uses. Therefore a threat by dissatisfied investors to remove “their” cable will not be credible, while the real possibility that a satellite can profitably be transferred will mitigate the incentive to renege on promises to investors.

Finally, consider how regulatory policy itself can be designed to make private investment less susceptible to expropriation. The temptation to expropriate property is often particularly pronounced when realized returns on investments are unexpectedly high. In order to justify expropriation, the recipient country may classify such returns as egregious and undeserved, and this policy may enjoy popular local support. To combat this tendency, it can be wise for investors to agree in advance to share a sizable portion of returns over a specified level with the recipient country. In return, investors might be permitted either a higher target return or some special considerations if returns fall below a certain level.

The profit distribution scheme is also important. It may be advantageous to distribute widely annual dividend checks based on the firm’s performance (per-
haps to all customers of the telephone company). This visible distribution can contribute to widespread domestic support for the successful—and even profitable—operation of the regulated enterprise (see Weisman 1993).

To further local understanding of and support for a reasonable means of compensating investors, the profits of the regulated enterprise may be linked explicitly to ratings of the firm’s performance. The share of profits awarded to the firm may decline if customers express concern over the quality of service. This link can lend credibility to a promised reward structure, since customers may be less inclined to support the imposition of financial penalties on a firm they think is performing well.

It can also be useful to plan in advance for exogenous changes that may alter perceptions of what constitutes a reasonable return for investors. For instance, suppose the operating costs of the regulated firm are determined largely by the firm’s cost of capital and that these costs, in turn, are linked to the government bond rate. In this case it can be advantageous to link the profit level of the regulated firm to the government bond rate. By carefully anticipating and controlling for the effects of important changes in the firm’s environment, the scope for expropriation in the form of subsequent modifications of compensation rules can be reduced.

Finally, it is important that compensation rules reduce the scope for regulatory interpretation when the regulator has limited commitment powers. For instance, it may be preferable to rely on a revenue-sharing rather than a profit-sharing structure (Sappington and Weisman 1993). Profit-sharing rules commonly require the regulated firm to share with its customers realized returns on “prudently incurred” investments. Phrases such as “prudently incurred” can provide the regulator with leeway to manipulate the base on which profits are calculated. By excluding substantial amounts of investment from the rate base on grounds that the investments were not prudently incurred, the regulator can expropriate the returns anticipated by investors. In contrast, revenue-sharing arrangements, which require the firm to share a fraction of its revenues above a threshold level, usually provide less scope for regulatory interpretation.

Conclusion

Carefully designed regulatory policies can reduce the detrimental effects of a country’s limited powers of commitment. By enhancing the probability and severity of retaliation should expropriation occur, a recipient country strengthens its promise not to expropriate investors’ returns. Additionally, the operating methods and technologies in the regulated industry can be structured to limit the incentive for expropriation.

I would like to raise two issues that warrant additional investigation. First, private investment may not always be the best way to fund projects in countries whose commitment abilities are limited. Levy and Spiller focus on private investment. Conceivably, though, if a country’s commitment abilities are sufficiently
limited, it may be better for that country to use its resources to develop a crucial
domestic industry. Levy and Spiller's perspective can help in determining when
projects should be undertaken directly by the domestic government and when
private resources should be sought (see Sappington and Stiglitz 1987; Shapiro
and Willig 1990; Willig, in this volume).

Second, there are other factors that influence the optimal design of regulatory
policy. Recent experience in the United States suggests that considerations other
than institutions and operating norms may affect telecommunications regula-
tions. Individual states have adopted different methods of regulating local car-
rriers, despite institutions and operating norms that, in many respects, seem quite
similar across states.² Regulatory plans range from standard rate-of-return regu-
lation to nearly complete deregulation. Institutions clearly matter, as the paper
argues, but other factors, such as consumer income and preference, objectives of
regulators, population density, and other determinants of the firm's cost struc-
ture affect optimal regulatory policy. A more detailed consideration of these
factors awaits further research.

Notes

1. It may also be in the interest of the recipient country to make it more difficult to measure realized
returns on investments. If investors can make their profits less visible, the recipient country is less likely to
usurp the profits. Accounting systems may be specially designed for this purpose, or vertical integration
by the regulated firm may be encouraged so that creative transfer prices can reduce measured profits in
the relevant industry (see Sappington 1986).

2. Smart (1993) traces regulatory policy in the United States to differences in regulatory and institu-
tional structures. Her insightful work might be viewed as additional support for Levy and Spiller's
hypothesis about the effects of institutions on optimal regulatory policy.

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COMMENT ON “REGULATION, INSTITUTIONS, AND COMMITMENT IN TELECOMMUNICATIONS,” BY LEVY AND SPILLER

Ashoka Mody

As the pendulum has swung toward the private sector, attention has focused on the importance of the government’s role as a regulator (see Foster 1992). Can regulation succeed in countries that have ineffective public bureaucracies and judicial systems? If regulation can succeed, what form should it take?

Levy and Spiller take a pessimistic view of these questions. For many countries, they argue, effective regulation may not be feasible; where feasible, it may have to be limited to a set of simple, unchanging rules.

I want to suggest two reasons for optimism: first, regulation may be less necessary than is believed, and, second, even where bureaucratic and judicial failures occur, it may be possible to learn to regulate through a setup that is lean and is detached from the general government apparatus.

General Observations

The paper’s title leads one to expect an analysis of regulatory experience. In fact, the paper contains only a limited discussion about the specifics of regulation; it puts greater emphasis on the prerequisites of effective regulation. Levy and Spiller argue that a country’s institutional endowments strongly condition its regulatory options. This proposition moves our concerns from the specifics of regulation to the context in which regulation is designed and implemented.

Levy and Spiller come close to concluding that in most developing countries regulation is unworkable. This may well be true. What the authors do not discuss is the extent to which regulation is needed. Where regulation is needed but cannot effectively function, we need to ask whether that condemns the country to a lack of infrastructure or whether there may be alternatives, including the public provision of infrastructure.
The paper offers almost no quantitative evidence. Nor do the authors consider the possibility that their evidence may be amenable to alternative interpretations. For example, they assess the performance of the telecommunications sector in the five countries studied without reference to their general economic performance.

Consider the contrast between the Philippines and the United Kingdom. The Philippines is seen as having the poorest prospects for installing a credible regulatory regime because of the lack of institutional strength. Given the authors' assumption of exogeneity, this is an unrelenting condition. In contrast, the United Kingdom is awarded high marks for the strength of its formal—and informal— institutions. As shown in table 1, however, there are other differences between the two countries. Not only does the Philippines have a much lower per capita income than the United Kingdom, but the 1980s was a decade of poor growth for the Philippines; the second half of the decade, in particular, was a period of acute economic decline. During this period the U.K. economy grew rapidly.

The United Kingdom does well, according to the authors, because it has a set of informal institutions that compensate for weaknesses in formal institutions and allow the government to undertake bold changes. Since informal institutions typically include all those that are not readily observable, such conclusions are relatively safe from scrutiny. In contrast, the weakness of both formal and informal institutions in many low-income countries is invoked to explain their poor performance.

All countries have a variety of successful informal institutions that are used for conducting business in what are often difficult circumstances. Indeed, it may well be the case that institutions and informal channels of information are stronger where legal and contractual systems are the weakest. African observers note that there is a web of informal links that support social and commercial transactions and that should not be dismissed lightly. Development economists need to ask how to expand these linkages to induce more rapid growth.

Table 1. Per Capita GDP, GDP growth, and Secondary School Enrollment, Selected Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita income (1991 dollars)</th>
<th>GDP growth, 1980–91 (percent per year)</th>
<th>Secondary enrollment 1990 (percent)</th>
</tr>
</thead>
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<tr>
<td>United Kingdom</td>
<td>16,500</td>
<td>2.9</td>
<td>84</td>
</tr>
<tr>
<td>Argentina</td>
<td>2,767</td>
<td>-0.4</td>
<td>-</td>
</tr>
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<td>Chile</td>
<td>2,160</td>
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<td>Jamaica</td>
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</tr>
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</table>

— Not available.

There is a more general point here, which is especially relevant for practitioners. Within any country there exist certain groups or networks that are more growth oriented than others. Sometimes they exist in a latent form and need seeding. The use of such networks as leverage can have significant payoffs not only in terms of the immediate objective but also through demonstration effects.

Institutional Goals

In their general enthusiasm for broadly defined country "endowments," the authors have a tendency to dismiss more narrowly targeted institutional goals and achievements. An example is their contention that "the independence of the regulatory agency has been oversold as a regulatory issue." Both their facts and their analysis can be questioned.

Levy and Spiller imply that Britain's regulatory agency, OFTEL, is not truly independent because it is "part of" the Department of Trade and Industry. This is a seriously misleading statement. At some level every regulatory agency will be "part of" some organization or other. OFTEL has actively sought to encourage new entries, creating both the intellectual basis for competition (see Bell and Cave 1991) and the promotion of new carriers through interconnection requirements. The key in the OFTEL case is that the minister for trade and industry signs a contract with OFTEL defining the rights and obligations of the regulators. The term of the regulators does not coincide with the political cycle. Indeed, concerns have been raised that the regulator is not sufficiently accountable and that there may be a need to regulate the regulator (see Dixon 1993).

In contrast, the Philippines has not been able to establish an independent regulatory structure. Regulatory commissioners are political appointees chosen by key executive-branch officials. There is a strong basis for assuming that even a simple step, such as detaching the appointments of commissioners from the political cycle, could have a major effect on regulatory performance, while at the same time the court system continues to suffer from various limitations.

The independence of the regulator in the performance of the (politically) defined mandate is an important objective, despite the authors' assertions to the contrary. It is true that, in practice, such independence is difficult to achieve because of political interference. This is likely to be the case not only in specific countries but also within countries because the balance of power and opinion constantly shifts. Experience suggests that rules which minimize such swings can be implemented.

It could well be argued that because of depressed economic conditions, the poor performance of the institutional structure of the Philippines was as much a symptom as a cause of a general economic malaise and lack of confidence. Similarly, more buoyant conditions in the United Kingdom made regulatory reform more credible and sustainable. This observation raises the possibility that institutional mechanisms may be amenable to change and that prospects of
good growth, even at a subsectoral level, could create the conditions for local institutional reform.

Levy and Spiller assert that "Chile and a number of other Latin American and East Asian countries are well endowed with professionals capable of performing such [complex regulatory] evaluations." In contrast, it is maintained, Jamaica does not have the capacity to manage the details of complex regulation. All this may be true, but there is not a shred of evidence to support it. Moreover, it leaves open an interesting question: does the Philippines have such capability? According to most educational indicators, the Philippines does very well. For example, table 1, above, shows that secondary school enrollment rates in the Philippines are about the same as in Chile. Does that mean the Philippines can, in principle, support complex regulation? The answer is yes—the sophisticated regulatory response to the power crisis is an example.

Levy and Spiller assign an oddly insignificant role to the influence of technology. According to them, "Even when technological changes render formerly noncompetitive sectors competitive, countries with weak institutional endowments may have no alternative but to live with these [preexisting] rules, since by changing them they risk undermining the credibility of the regulatory system." Although this is just a passing remark, it is indeed a striking statement and reflects the general philosophy of the paper. Of all the infrastructure sectors, telecommunications is undergoing the most rapid and revolutionary change. Concepts such as natural monopoly that were being seriously proposed less than a decade ago have fallen by the wayside. No longer is long-distance service considered a natural monopoly; even local service is becoming competitive. Multiple providers of service, coexisting either in competitive or in complementary situations, are more the norm than the exception. In the next few years the landscape is likely to change in dramatic and unpredictable ways. The only thing that is clear is that the number of competitive providers in every segment of telecommunications in almost any country in the world will increase. Yet the authors conclude that maintaining an elusive "credibility" is more important than taking advantage of these revolutionary changes.

The authors' assertion that all outcomes flow from a fixed or exogenous set of institutional endowments limits the scope for creative action built on existing institutional strengths. While they explain the possibilities of institutional change, they also assume that institutions will remain unchanged, restricting the possibilities for progress.

It is important to allow for endogeneity of institutions. This is not just a matter of making the framework more general; it has a profound influence on the way one thinks about change. For example, in situations that seem hopeless to Levy and Spiller, it would be helpful to examine whether institutions can learn to regulate. Such a view also leads to serious practical considerations involving the identification of interest groups that can discipline or counteract the rent-seeking elements in the regulatory process.
In this context, Levy and Spiller quite rightly note the importance of informal institutions. Such institutions can limit dysfunctional behavior. Their treatment of informal institutions, however, verges on tautology. The authors go on to formulate a somewhat simplistic and unhelpful view of a country's institutional endowment. It is simplistic because it ignores the diversity of institutional strengths and weaknesses in a country, and it is unhelpful because it leads to an either-or prescription rather than the more nuanced and sequenced approach that would follow from a detailed institutional understanding. A narrower, more sector-specific view of institutional change would enable policymakers to identify strengths and weaknesses and to devise mechanisms for aligning opposing interests toward achieving the goal of sectoral reform.

References

Which institutions do we treat as exogenous and which as endogenous? Ashoka Mody (discussant) asked. Brian Levy made it clear that he and Pablo Spiller were describing neither the regulatory setup nor the nature of technology as exogenous. They were treating as exogenous such things as judiciary functions, constitutional arrangements between the legislature and the executive, and informal norms that shape and restrain political decisions in a particular country. Those things change, but only slowly, so for the purposes of analysis and policymaking it seems reasonable to think of them as exogenous. Spiller agreed that the idea of endogenous commitment did not get the attention it deserved. He thought that many of the examples David Sappington (discussant) had presented deserved more thought and elaboration, but they all called for simple answers and simple rules. Double retaliation against expropriation, for example, would have to be a relatively transparent rule.

In connection with the Philippines, Mody had suggested that the direction of causality as a sector grew went from slow growth to expanded demand on institutions. The Philippines study shows heavy investment in the early years of a government that is friendly to the telecommunications company and low investment both in the early years of an unfriendly government and in the final years of both types of government. One expects this behavior because of substantial uncertainty, he said, but what is fascinating is that the rate of investment is essentially independent of the rate of growth. That suggests fairly clearly that the exogenous variables have to do with institutions rather than with the growth rate. It didn't matter whether the Philippines had strong institutions, said Spiller, in response to Mody's defense of that country. What you have to look at is whether the institutions restrain discretion. Can the government reverse itself easily? During most of the period that was analyzed, the Philippine government—that is, the executive—could. If things have changed, said Spiller,
that would be an improvement. A bit of gridlock would be desirable in some countries. (The subject of the Philippines returned in the floor discussion of Leroy Jones's paper.)

In response to comments that Levy and Spiller had provided scant information on individual countries, Spiller said that this was the first paper in a book that would go into more detail on individual countries. Data are scarce, but the paper was based on figures that cover a four-year period for each country.

Spiller agreed with Sappington that the nature of investment was key. In Chile, for example, households pay for the installation of transmission lines from the main roads to their homes, to reduce the company's exposure. Large companies pay up front for transmission. Spiller agreed with many of Sappington's suggestions and said that they were in use in many countries.

A participant observed that privatizing telecommunications in Argentina—and it could happen in Chile and Uruguay too—has involved selling state-owned companies to state-owned firms in Europe. In the beginning phases the fact that there is no recent history of a regulatory process may give foreign enterprises a stronger self-imposed commitment, he said. For the Argentine authorities to appropriate a state airline, such as Iberia, would be quite different from their appropriating, say, People's Express. The nonguarantee commitment in the early stages of privatization may mean that we should be careful to find other options besides simply selling state assets to state enterprises abroad.

Henry Ergas (discussant in another session) wanted to know on what basis Levy and Spiller had concluded that rate-of-return regulation was preferable to $R_{pa} - x$ (rate-of-price-increase minus adjustment factor $X$). He pointed out that anyone who participated in the process knows that rate-of-return regulation is a complex, burdensome form of regulation that requires enormous expertise and is inevitably controversial. To view it as a simple alternative to $R_{pi} - x$ is inaccurate. Nor does experience suggest that it is less vulnerable to expropriation than $R_{pi} - x$. On the contrary, even in the United States, where the statutory protection of investors in regulated enterprises is great, there is strong evidence that rate-of-return regulation failed to respond to the inflation shock that hit the economy in the 1970s. Paul Macavoy has shown conclusively that toward the end of the 1970s and in the 1980s, as a result of rate-of-return regulation in that environment, earnings in regulated industries deteriorated and investment in those industries fell sharply, creating problems.

Levy responded that they had raised the issue because if regulatory rules provide for $R_{pi} - x$, with the $X$ to be readjusted, discretion is built into the system. He and Spiller were looking for mechanisms that did not build in discretion. Levy found interesting Sappington's suggestion of establishing $R_{pi} - x$ but with a set $X$ and a set of $X$ antirules as to how any profits above a certain level would be distributed.

Spiller explained that he and Levy distinguished between the Jamaican and the U.S.-style rate-of-return regulations. Jamaica's system is not open-ended; the regulator is subject to a number of restraints. In the United States it was possible
to discuss such matters as the necessary capital investment and a fair rate of return. There could be no such discussions in Jamaica. The modified rate of return that the Jamaicans use is not efficient, but it clearly provides substantially more commitment than the open-ended rate-of-return regulation in the United States or the open-ended RPI—x regulation in the United Kingdom.

Ergas said he found it difficult to understand why in a low-commitment environment it would be preferable to have a less independent agency. He hoped that he had simply misunderstood what Levy and Spiller were saying. As he understood it, the entire debate about whether regulatory authorities should be independent has been couched, at least since the 1950s, in terms of independence from ministerial control. That is, the primary goal has been to shelter regulatory decisions from the day-to-day interference of ministers—to limit ministerial discretion to issues of policy and to prevent the minister's intervention in particular cases. Spiller responded that he and Levy were not contending that low commitment made regulatory independence unnecessary. Their paper says that checks and balances are important; independence, by itself, is not checks and balances.

Ergas said he was startled by many aspects of the discussion of the United Kingdom. He, like Mody, questioned whether the situation in the United Kingdom had been fully considered. It struck him as odd that the text characterized the United Kingdom as having a strong judiciary that protected public utilities from regulatory expropriation. Ever since 1942 or 1943 the courts have refrained from reviewing regulatory decisions except where a decision was manifestly irrational (where it could not have been reached by a reasonable man acting with knowledge of the facts). Equally questionable, he thought, was the suggestion that there had been no instances of court litigation involving British Telecom (BT) and OFTEL. In fact, there have been appeals involving OFTEL, entirely on matters of process, and two such appeals were now before the British judiciary. Spiller explained that the U.K. judiciary restrains regulators through the use of a contract—called a license—between the utilities and the government. The license stipulates the regulatory process to be applied, and if the government deviates from that process, the courts step in. (The same is true in Jamaica.) If the U.K. director-general of telecommunications, for example, decides today that the price paid by Liverpool households has to be reduced 20 percent, BT does not have to follow that decision; it can go to court, unless Parliament passes an act that validates the lower price. In parliamentary systems the use of contracts to regulate is innovative because courts uphold contracts. But the courts do not restrain regulators in administrative decisions.

A participant said that although he found the paper interesting, it did not explain why regulation is necessary. Can we really attribute the lack of telecommunications services in China, India, Nigeria, and Russia to bad regulation? Surely we must regulate standards to ensure interconnection, but do we need to regulate price and entry? Spiller responded that unless a commitment can be made not to regulate in the future, there is a problem. Say, for instance, that a
host country allows investments—in fiber optics or cellular phones or whatever—and agrees that it will not regulate the sector. How long will it be before that commitment is reversed? Some countries can commit not to regulate, and others cannot. If investors fear that as soon as—or even before—their firm is profitable, it will be regulated, they will not find it in their interest to invest.