

5. Regulatory institutions

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5.1 Introduction

As discussed in previous chapters, concession contracts with detailed regulatory rules reduce the need for regulatory discretion. Even with very specific rules, however, multiple regulatory tasks still must be performed: competing bids must be evaluated; pricing rules must be applied (the impact of inflation on prices must be calculated in accordance with indexation formulas, for example); firms' behavior must be monitored to ensure compliance with pricing, quality, and other obligations; and decisions must be made on the application of sanctions for noncompliance. Furthermore, rigid rules have costs and, in some cases, some flexibility will be desirable. The application of rules governing access to bottleneck facilities or anticompetitive behavior, for example, will often call for judgments. Also, over long periods, pricing rules will eventually have to be reviewed.

The character of the entity or entities in charge of performing these tasks will have an important impact on both the technical quality of the work done and the confidence in the integrity of the regulatory system as a whole. These factors, in turn, will determine whether private operators will be willing to provide infrastructure services and under which conditions.

Whatever the nature of the regulatory entity, two important issues arise. First, the regulator must be able to balance the interests of the operator, the users, and the government without succumbing to pressures by one or more of these parties. Second, some regulatory functions call for particularly sophisticated technical skills, and it is therefore especially important to endow the regulator with such capabilities. This chapter addresses the following questions:

- What can be done to help the regulator resist undue pressures?
- How can protection against undue pressures be combined with adequate accountability of the regulator?
- How can the regulator acquire necessary technical capabilities?
- Which functions should be performed by the regulator?
- How should the regulatory entity be structured, which procedures should it follow, and when should it start to operate?
- When the recommended solutions are politically unacceptable, what alternative strategies could be considered?

5.2 Establishing Independent Regulators

It is widely accepted that the regulator should maintain an arm's length relationship with regulated firms, consumers, and other private interests. The idea that the regulator should also maintain an arm's length relationship with political authorities, on the other hand, still remains an object of debate.

The rationale for giving the regulator independence in this second sense is strong, however. It stems from three related considerations. First, because consumers constitute a large proportion of voters and utility services are often perceived to be essential, governments face pressures to use regulation to advance short-term political objectives. There are numerous examples of justified price increases being withheld at the expense of investors, economic efficiency, and the longer-term interests of consumers.

Second, investors are aware of these pressures and of the vulnerability of their usually large, long-term, and immobile investments. Unless a government has made a credible commitment to rules that enable reasonable returns, private investment will not flow. Weaknesses in the credibility of that commitment will be reflected in higher costs of capital and, hence, higher tariffs.

Third, credible commitments are difficult to make because of the long-term nature of most investments. Highly specific rules can increase the comfort level of investors in some cases, but, as mentioned above, such rules might not be sustainable and are not appropriate in all cases.

In these conditions entrusting regulatory authority to government ministers presents serious drawbacks, as short-term political considerations are likely to weigh heavily on regulatory decision-making. The situation is worsened when the state remains the owner of utility enterprises, as there is then no arm's length relationship between the regulator and the firms.

In order to provide a satisfactory solution to this problem, a number of countries have established independent regulators with real autonomy from political authorities. Although generally a part of government, the regulator can be established so as to enjoy some protection against political pressures. Some of the concrete measures that can be adopted in that respect are:

- *Mandate.* An independent regulator will typically have its mandate clearly defined by law and will not be subject to direction by political authorities.
- *Appointments.* While the executive branch is usually responsible for making appointments, its discretion might be constrained by legislative provisions specifying particular qualifications (and disqualifications) for appointment, and sometimes also requiring the legislature to participate in the appointment process.
- *Terms of appointment.* Regulators are usually appointed for a fixed period, which may be subject to renewal. When a regulatory board or commission is made up of several individuals, their terms may be staggered to reduce the influence of any one government over the overall composition of the entity.
- *Security of tenure.* Appointees can be removed only in restrictively defined cases. Protection from arbitrary removal is essential for resistance to improper political pressures.
- *Agency funding.* Regulators can be given access to independent sources of funds, such as user fees or levies on the regulated industry. In order to prevent levies from growing too burdensome, the law establishing the agency often sets a cap on levies, usually defined by reference to industry turnover.¹ The cap sets the maximum levy, and actual levies are set annually to cover a budget approved by the legislature. When an agency is responsible for more than one industry, levies usually differ among industries, so that each industry covers the costs of its own regulation and contributes to costs shared across industries (see Smith and Shin 1995b).

Independent regulators have a long history in the United States and are being adopted by several OECD countries, including Australia, Canada, and the United Kingdom. The trend toward infrastructure privatization and reform has seen this model emulated in a growing number of developing and emerging economies. Recent examples include Argentina, Bolivia, Hungary, Jamaica, Malaysia, Mexico, Peru, the Philippines, Russia, and Venezuela. Even countries without independent infrastructure regulators have often adopted this model for other regulators with technically demanding and politically sensitive roles, such as antitrust regulators.

Proposals to establish such agencies, however, often remain controversial. In particular, there is often skepticism of independent regulation in countries with a long legacy of strong executive dominance and pervasive corruption. There are several possible answers to this concern. First, independence is not achieved overnight in any society. With time, as the regulator builds a constituency among consumers and investors, it can be expected to develop greater resistance to political pressures. Second, independence is a relative, not an absolute, concept, and progress must be measured at the margin. Any departure from direct political control can be expected to somewhat reduce the concerns of investors and, therefore, the costs of capital.

5.3 Reconciling Independence with Accountability

Independence must be reconciled with measures to ensure that the regulator is accountable for its actions. Checks and balances are required to ensure that the regulator does not stray from its

mandate, engage in corrupt practices, or become grossly inefficient. Striking the proper balance between independence and accountability is notoriously difficult. A number of measures can be adopted to help achieve these objectives:

- *Mandate and review.* Decisions of the regulator should be subjected to an appeal process (this topic is further discussed in section 5.6.3).
- *Removal for misbehavior.* While security of tenure is an essential safeguard of independence, that protection should not extend to cases in which there is evidence of incompetence or misbehavior. To reduce concerns over removal provisions being misused for political purposes, causes for removal will have to be carefully defined. In addition, the legislature could be involved in the decision, with supervision by the courts.
- *Transparent decisionmaking.* This will typically include mechanisms for interested parties to make submissions on matters under consideration and for the regulator to publish decisions and the reasons for those decisions.
- *Review of budgets.* Agency budgets should be subject to scrutiny by the legislature and executive as part of the budget process.
- *Annual report.* The regulator is typically required to publish an annual report on its activities.
- *Other scrutiny arrangements.* The regulator's actions may be subject to scrutiny by other arms of government, including legislative committees and specialized audit or oversight institutions. In some countries, for example, an independent

audit office or controller-general may have jurisdiction to review the conduct and performance of regulatory agencies.

5.4 Dealing with Constrained Regulatory Capacity

In order to ensure that the regulator has the requisite capacity to carry out its tasks, measures might be adopted to facilitate the recruitment of qualified personnel. Regulators should, for example, meet strict professional qualification requirements. Making sure that the regulatory entity has access to sufficient financial resources is also important if the entity is to attract qualified personnel. Such positions should, in addition, be exempted from civil service salary rules if such rules make it difficult to recruit and retain highly trained and experienced professionals.

Training regulators is also crucial. Training usually must cover relevant concepts from traditional disciplines in economics, law, and finance, but should also include broader training in negotiation analysis, media relations, and so on. No less important, newly appointed regulators can benefit considerably from contacts and exchanges with more experienced regulators from other countries. In some cases this is done through bilateral "twinning" arrangements between the nascent regulator and a more experienced foreign regulator. These arrangements may provide a basis for exchanging staff and materials or for providing other forms of support and advice. There has also been a recent trend toward the creation of networks among regulators. Recent examples include the Hemispheric Energy Regulators Conference being developed in the Americas and the International Forum for Utility Regulation supported by the World Bank.

Finally, when in-house capacity is in short supply, one option is to contract out some regulatory responsibilities to an independent group or consulting firm. This might prove to be a very efficient way to overcome capacity constraints. For example, Chile contracts out the technical monitoring of water standards. Another task that could be undertaken by outside experts is the auditing of regulated firms' financial accounts.

There may be some limits to this approach, however. First, contracting out regulatory functions must be seen as legitimate; contracting out an entire system (including decisionmaking responsibilities) will usually be politically unacceptable. Specific regulatory tasks or functions may be more amenable to contracting out (examples were mentioned in the previous paragraph). Independent consultants can be given responsibility for conducting bidding processes, and dispute settlement is regularly handled by external arbitral bodies. Providing for the transfer of know-how from outside experts to in-house staff might also minimize resistance to the idea of contracting out some regulatory functions.

Second, to the extent that outside experts are entrusted with regulatory responsibility, it is essential to make sure that they are protected from undue pressures. Third, such outside experts must be kept accountable for their work. This means, for example, that it might be difficult, if profits or prices are controlled by reference to a very complex model (such as in the Chilean electricity sector), to contract out analytical work while retaining a sufficient base of information in-house to allow the consultants' findings to be checked on an informed basis.

One should note, in addition, that enhancing the expertise

of the regulatory entity is not only a way of resolving technical capacity constraints but also of fostering the independence of the regulator. Highly qualified and well paid staff may be less likely to give in to political pressures or succumb to bribes or other inducements from industry (in Argentina, for example, regulators are more highly paid than the president).

5.5 Determining the Functions of Utility Regulators

5.5.1 Main Principles

There is a wide range of regulatory tasks that can be assigned to utility regulators. These include:

- Award of licenses or concessions.
- Administration of rules included in licenses or concessions (for example on tariff matters).
- Settlement of disputes between government and operators, between consumers and operators, and between different operators (on access matters, for example).
- Monitoring of firms' compliance with regulatory norms.
- Prosecution of firms for noncompliance, including the imposition of penalties.

Several factors will determine whether, and to what extent, any of the above tasks should be conferred on a utility regulator:

- Whether the activities in question are considered to be political or technical matters. Judgments of this kind vary among systems and over time. For example, political

control over tariffs was once considered the norm. But there is now growing recognition that once the general policy principles are determined, society's interests will be better served by delegating responsibility for tariff administration to an independent agency. Tax and other distributional issues, in contrast, are still widely regarded as the exclusive province of elected bodies.

- Whether locating particular functions within a single agency has the potential to create significant conflicts of interest or dilute the agency's focus. For instance, giving a regulatory agency responsibility for actively promoting investment in a sector will often conflict with its role as an impartial arbitrator of investor and consumer interests.
- Whether, by contrast, locating particular functions within one agency has the potential to foster the development of expertise, coherent policies, and economies of scale. Especially in countries where there is a shortage of appropriate skills, there are benefits to limiting the number of different agencies and assigning related tasks to the same body.
- Whether the regulator enjoys the confidence of users and political authorities. New agencies may have their role limited initially and be given greater responsibility once they have proved their competence and reliability.

5.5.2 Utility Regulators' Roles with Respect to Ministers

There is a general consensus that ministers should retain responsibility for broad sector policy, including public investment, privatization, sector restructuring, taxation,

subsidies, intergovernmental relations, and maintenance of the legislative framework. Even in these areas, however, agencies may be given formal or informal advisory roles. And gray areas remain. For example, many agencies are responsible for defining tariff structures, including those that include some degree of cross-subsidization between different classes of users. When subsidies are made more explicit, however, judgments on these questions will usually be seen as more appropriately made by elected bodies.

On the other hand, most independent regulators will be responsible for administering rules, settling disputes, and monitoring firms, although in some cases regulators might have only advisory functions with respect to the administration of certain rules.

There is less agreement over responsibility for granting licenses or concessions. In the United States regulators grant Certificates of Public Convenience and Necessity, which are functionally equivalent to licenses or concessions. In the United Kingdom the power to grant licenses is formally vested with the relevant minister, who can, however, delegate this task to regulators. In Jamaica the regulator must make recommendations on the award of licenses, but the minister makes the final decision. And in Argentina and Peru concessions are granted by ministers without involvement by the regulators. There is no general answer as to which approach is best. While ministerial control might expose the process to short-term political influences, some countries are concerned about delegating this sensitive task to a regulator. The Jamaican approach might represent a reasonable

compromise in that respect. In any case the identity of the decisionmaker will matter less when detailed criteria for the award of a license or concession are specified and the decision is subject to effective review.

The agency's role in imposing sanctions on utilities for noncompliance with norms also varies among systems. In some legal systems the power to impose sanctions is reserved for the courts. In Colombia enforcement powers in the energy sector are not conferred on the regulator but on a separate Public Services Commission. In most cases, however, the regulator has the power to impose sanctions, although major sanctions—such as the cancellation of licenses or concessions—may require ministerial decisions.

5.5.3 Utility Regulators' Roles with Respect to Other Regulators

Utility regulators' main focus is on the control of firms with monopoly power. But utilities, like other firms, are subject to regulation on a variety of matters, including environmental and safety standards and restrictions on anticompetitive practices. In some cases existing agencies may exercise regulatory responsibilities of this kind. In the United Kingdom, for example, responsibility for regulating the water sector is divided between the Director General of Water Supply (economic regulation, including prices) and the Department of Environment (pollution and, hence, quality standards). Then, the issue of coordinating the actions of the utility regulator and the other involved agencies becomes crucial.

Quality standards have a direct impact on utilities' costs and, hence, on prices and the affordability of services. They

should therefore be coordinated with economic regulation. If the utility regulator is not responsible for regulating quality parameters, it can, for example, advise the agency responsible for setting standards. Tariff rules can be designed in such a way as to permit certain cost increases to be passed on automatically, or to allow tariffs to be reviewed if there are significant changes in quality standards.

In many countries a specialist agency with economywide jurisdiction is responsible for antitrust regulation. Once again, it is important to clearly distinguish between the responsibilities and roles of the antitrust agency and utility regulators. Antitrust regulation and utility regulation may overlap in several areas. For instance, industry-specific regimes governing access to networks may overlap with general rules governing the misuse of market power, and some arrangements endorsed by the utility regulator may involve at least prima facie communication of antitrust rules. It will usually be appropriate to give priority to industry-specific rules. In the United States and Canada the question of jurisdiction was left largely for the courts to resolve, leading to many decades of uncertainty and much costly litigation. The preferable approach is to establish clear rules governing the interaction of the two regimes from the outset.

On the other hand, both antitrust agencies and agencies in charge of regulating infrastructure services can usually contribute expertise to utility regulation—and this complementarity should expand as competition comes to play a greater role in utility industries. For this reason both agencies may be involved in reviewing proposed mergers, restrictive agreements, or anticompetitive conduct within utility industries. In some cases a

member of the antitrust agency is made a member of the utility agency (as in Australia), or one agency makes formal submissions to proceedings conducted by the other. Antitrust agencies may also be given special roles in utility regulation, such as determining whether the conditions of effective competition are sufficiently absent to warrant price regulation (as in Mexico) or acting as an appeal body from the utility regulator (as in the United Kingdom).

5.5.4 The Breadth of Regulators' Authority

The pros and cons of organizing governmental entities on a sector-specific or cross-sectoral basis and in a centralized or decentralized manner have already been discussed in chapter 2. This section will therefore highlight only a few points that are of particular relevance in the regulatory context.

5.5.4.1 Sectoral coverage

There are three basic models around the world. Regulatory institutions can be:

- Industry-specific: separate agencies are established for electricity, gas, telecommunications, and so on (such as in Argentina and the United Kingdom).
- Sector-specific: separate agencies are established for energy, transport, and communications (such as energy regulators in Colombia and Hungary).
- Multisectoral: a single agency is established for all or most utilities (such as state-level agencies in the United States, Canada, and Australia, and national agencies in Jamaica, Costa Rica, and Panama).

Multisectoral agencies present some particularly important advantages. They generally report to a central ministry or directly to the head of state, which tends to enhance their independence with respect to specific sectoral ministries. They also foster the development of technical capacity by concentrating available resources in one agency and by enabling staff to learn across sectors. Finally, they make it easier for the regulator to deal with blurring industry boundaries, a particularly important point in the utility sector, where technological evolution drastically changes how some services are provided (witness the new telecommunications law enacted in February 1996 in the United States, which removes the regulatory barriers that separated the telephone, cable, and broadcasting industries).

On the other hand, political resistance often has to be overcome in order to set up an independent regulatory agency. Such resistance might be more virulent when the agency is to be entrusted with cross-sectoral competencies, as several line ministries might jointly protest against a decision perceived as depriving them of some of their responsibilities. Another concern is that a cross-sectoral agency might be unable to develop sufficient sector-specific expertise. Usually, though, this issue can be adequately dealt with through the creation of sector-specific departments within the institution (figure 5.1).

5.5.4.2 Degree of centralization

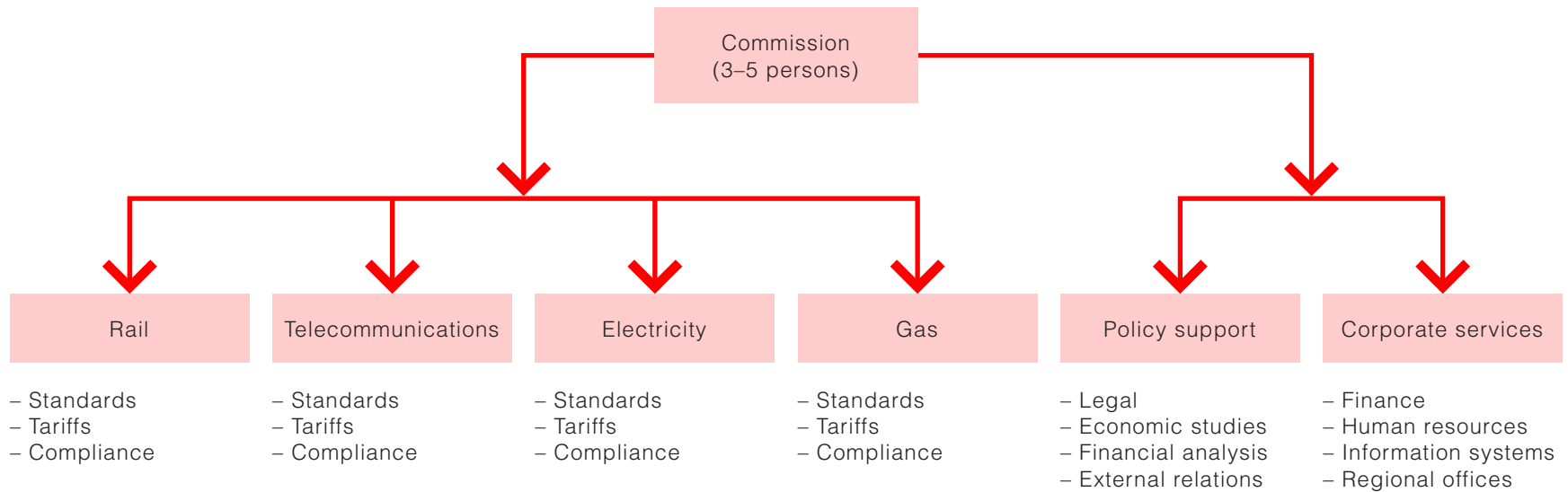
Some countries have established countrywide regulators (for example, the United Kingdom). Others have set up regulatory entities at the state, provincial, or municipal level. In France and Canada, for example, primary responsibility

for regulating water utilities falls to municipal authorities. Other countries have adopted a multi-tier structure. In Germany, for example, the granting of concessions in the electricity sector is the responsibility of the municipalities, while the Lander (or states) determine rates. In the United States some national agencies are responsible for interstate regulatory issues, while commissions established at the state level deal with other regulatory matters.

A centralized approach, like a cross-sectoral one, may be an appropriate response to shortages of technical capacity, since such shortages tend to be more acute at lower levels of government. In addition, some infrastructure activities exhibit significant scale economies. Decentralized regulatory institutions might therefore have jurisdictions that are smaller than the minimum efficient size for particular activities. In such cases several regulatory entities may need to collaborate in elaborating and administering a common regulatory framework, which may increase costs and weaken the credibility and effectiveness of the regulatory regime.²

On the other hand, decentralization can reduce the information asymmetry between regulators and firms by bringing the regulatory authority closer to the regulated enterprise. In addition, it can foster experimentation with innovative approaches to regulatory problems. According to some commentators, such regulatory competition creates incentives for governments to improve the quality of their regulation and to emulate the most successful approaches (see, for example, Siebert and Koop 1993: 15-30).

Figure 5.1 Possible structure of a regulatory commission



Source: Bauer (1996) and World Bank staff.

5.6 Decisionmaking Structure, Procedural Considerations, and Implementation

Some countries entrust decisionmaking authority to a single individual (for example, the United Kingdom and Malaysia), while others use a commission or board (such as Argentina, Chile, the Philippines, and the United States). A commission will often be preferable, especially when there are concerns about improper influences on the regulator from industry or government (table 5.1).

5.6.1 Individual Decisionmaker or Commission

If a commission is chosen, decisionmaking will be facilitated by establishing an odd number of members and by limiting the total number of members.

As a rule, the more commissioners there are, the slower the decisionmaking process and the weaker the direct accountability of individual members. Commissions with three members are found in Italy and the Indian state of Orissa; Argentina and Mexico have established commissions with five members; in the United States, regulatory commissions are typically made up of three or five individuals.

5.6.2 Opportunities for Participation by Regulated Firms, Users, and Other Interest Groups

For the regulatory agency to make well-informed decisions and for its decisions to be accepted as fair and legitimate, it is important that affected interests have the opportunity to present their views. It is sometimes suggested that such interests should be represented on the regulatory commission itself. This

approach may offer a number of benefits. For example, it might improve the credibility of the government's arm's length relationship with investors, reduce the risk of capture by any one interest, and ensure that decisions reflect multiple perspectives.

Such an approach is not without risks, however. Great care is required in designing the body to ensure that representation is balanced and thus minimize the risk that decisionmaking will be captured by a particular interest group. Wide representation might also mean large numbers, thereby reducing individual accountability for decisions and often leading to longer delays in regulatory decisionmaking. Compromise decisions in a body with shifting alliances may make regulatory decisionmaking more difficult to predict, increasing uncertainty for investors. Compromise decisions may also lack vigor and clarity, to the detriment of the community's long-term interests.

For these reasons it is generally preferable to adopt alternative participation models. At a minimum individuals or groups with a significant interest in a regulatory decision should be permitted to present their views to the agency before a decision is made. In the United States, the process for doing so usually involves formal hearings, which are often criticized for their legalistic nature, costs, and delays. Regulators in the United Kingdom initially adopted much more informal processes, although there is a trend toward greater formality. Some countries, including Argentina and Bolivia, are experimenting with ways of developing regulatory processes that more closely reflect local administrative traditions and resource constraints. In addition, representative bodies can be

Table 5.1 Individual Regulators Versus a Commission

Criteria	Individual	Commission
Speed of decisionmaking	+	-
Accountability for decisions	+	-
Vulnerability to individual preoccupations	-	+
Vulnerability to improper influences by industry	-	+
Potential to stagger the terms of commission members in order to weaken links with particular government	-	+
Potential to reflect multiple perspectives	-	+

Source: World Bank Staff.

given advisory, rather than decisionmaking, responsibilities. Such bodies may be created at the initiative of the interests themselves or with the encouragement and support of the regulatory agency or government. The creation of special consumer councils may be especially important in countries that lack economywide consumer rights organizations.

5.6.3 The Review Process

Irrespective of whether the primary decisionmaker is a government minister or an independent regulator, effective review procedures are necessary to ensure that decisions are made in accordance with the regulatory commitments expressed in the law. To be credible, the review must be undertaken by an entity that stands at arm's length from the original decisionmaker, the political authorities, and the regulated firms. As with the whole of the regulatory process, a high degree of transparency is essential.

In most countries appeals from the regulatory agency go straight to the courts. If the courts have a reputation for independence, they can play a critical role in supporting the credibility of regulatory commitment. But, if there are concerns over the independence of the judiciary, delays in the judicial system, or the capacity of the courts to make judgments on complex economic issues, it may be more appropriate for review functions to be given to another forum, at least as an intermediate step. In the United Kingdom, for example, the Monopolies and Mergers Commission acts as an appellate body with respect to license amendments. In Chile certain appeals are heard by an ad hoc tribunal led by a supreme

court judge and comprising a law school dean and the dean of an economics faculty. In Bolivia appeals from sectoral regulators go to a superintendent general, whose mandate includes promoting consistency cross-across sectors.

Grounds for appeal are usually limited to alleged errors of fact or of law, including failure to follow a required process. Appellate bodies are generally not permitted to reconsider the merits of the decision and substitute their own judgment. Some limited exceptions may be appropriate for appeals to specialist appellate bodies.

5.6.4 The Timing of Implementation

Infrastructure privatization in countries such as Chile and the United Kingdom involved establishing detailed regulatory arrangements prior to privatization. This mandate permits the regulator to supervise restructuring and pricing reform and offers consumers assurance that their interests will be protected, thus reducing possible resistance to privatization. It also allows investors an opportunity to develop a better sense of how the regulatory framework operates.

Argentina adopted an alternative approach. There, sales took place first, driven by the acute economic, financial, and political constraints the country was facing. In telecommunications, for example, privatization occurred in 1990, but the final structure of the telecommunications regulator has not yet been approved, and funding is lacking to enable the regulatory body to perform its duties. In this environment there has been some instability in the basic regulatory framework and concern that monitoring and enforcement are inadequate.

While Argentina's experience supports the view that creating a working regulatory framework and related institutions is not absolutely essential for privatization to proceed, there are clearly risks in this approach that may translate into higher costs of capital and a greater risk of consumer backlash. Other things being equal, there are persuasive grounds for establishing effective regulatory arrangements before or, at the latest, as part of the privatization process.

When the objective is to establish cross-sectoral institutions, an additional sequencing issue arises: should the regulatory institutions exhibit cross-sectoral features from the outset or should they first be organized on an industry or sector-specific basis? There are three broad options. First, a multisectoral entity can be established at the outset, with each industry brought within the regime at the time of or before privatization. This will often be the preferred approach. It has been adopted in Bolivia, for example. Second, when only some industries or sectors are being reformed, an agency could be set up with regulatory responsibility for only those industries or sectors. The competencies of the agency can then be expanded as new industries or sectors undergo reform. This approach is currently being considered in Uganda. Also, if an industry or sector-specific regulator already exists, new industries or sectors may be brought within its jurisdiction, thereby avoiding the creation of additional entities. Some states in the United States proceeded in that way. In general, the feasibility of progressively expanding the competencies of a regulatory agency will depend on how easily the structure and operation of the initial institution can be modified to meet a broader mandate.

Third, regulators can be established initially on an industry-specific basis, but consolidated over time through mergers. This also happened in some U.S. states, and this solution is being envisaged for the United Kingdom (see Helm 1994: 17-39) and Chile (see Bitran and Serra 1994). This strategy has a number of weaknesses, however, including the likelihood that existing entities will resist merger and that the benefits of cross-sectoral regulation will not be available during the critical early phases of a new regulatory system.

5.7 Finding Alternative Strategies

As already mentioned, some of the measures proposed above are likely to meet substantial political resistance. Delegating regulatory responsibility to a fully independent agency, in particular, might prove very controversial, and some political authorities may refuse to take that step. Such refusal is likely to translate into higher costs of capital. It might also lead to the adoption of overly rigid, specific pricing and other rules in an attempt to reduce concerns that the regulatory process will be captured by some interests. There are nevertheless some solutions that may partly compensate for the lack of an independent regulator and that may constitute steps toward the ultimate adoption of such a model.

- *Independent agency with an advisory role.* This solution was adopted in the United States during the early phases of the development of its regulatory framework (U.S. regulators with advisory powers date from 1839 in Rhode Island, but it was not until the early 1870s that

commissions with mandatory rate-setting and other powers were established in Illinois, Iowa, Minnesota, and Wisconsin). A more recent example is that of Hungary's Energy Office. Where such agencies are established, their authority can be enhanced by requiring that their recommendations be published and that the final decisionmaker give reasons for deviating from the recommendations.

- *State holding companies with regulatory powers.* Some countries have conferred regulatory authority on commercial companies set up to manage the sector's assets. Such companies have usually been established in the context of lease arrangements. They are given responsibility for ownership, planning, and sometimes financing of infrastructure assets, as well as for regulating the lessee. Guinea and Senegal, for example, decided to establish such companies when lease contracts were concluded in the water sector. Although often fully owned by the state, those companies can be granted a certain degree of autonomy with respect to the responsible line ministry, and they can be exempted from civil service salary rules. They are not without drawbacks, however. For example, they tend to be staffed with ex-employees of the old public monopoly, who often have good operational skills but no expertise in regulatory matters, and who might be tempted to micromanage the private operator. State holding companies also tend to be organized on a sector-specific basis.
- *Dedicated unit within ministries.* While decisionmaking remains with the minister, bringing staff together in a

dedicated unit may facilitate the development of expertise and may contribute to the development of professional norms that could strengthen resistance to ministerial direction. If civil service salary rules make it difficult to attract highly qualified professionals, it is essential to provide adequate funding for the outside consultants.

- *Use of courts.* If a country has an independent judiciary, it may be possible to expand its role in regulatory decisionmaking. Limitations to this approach include the low level of technical expertise of most courts, the delays and expense usually associated with litigation, and limitations in the remedies that courts can order and effectively supervise.
- *Use of arbitration.* As mentioned in section 3.10, arbitration can be used to deal with a certain number of regulatory issues, but it has some limitations: it may be a slow process, supervision for the implementation of decisions is limited, and it might raise issues of legitimacy when broad discretion has to be exercised or when multiple interests should be given the opportunity to intervene.

Notes

1. Examples include 0.5 percent for telecommunications regulators in Argentina, Peru, and Venezuela, percent for the energy regulator in Colombia, and 2.0 percent for the water regulator in Peru.
2. On sectoral coverage and degree of centralization of regulatory institutions, see Smith and Shin (1995a).