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Overview of regulatory issues

1.1 Introduction

This book focuses on public utilities, telecommunications, electricity, gas, water, transportation (roads, railways, buses, ports, airports, . . .) and the postal service which are sometimes referred to as "economic infrastructures." It does not concern itself with the so-called "social infrastructures" such as education and health, or with financial infrastructures. This chapter will discuss the specific questions surrounding the regulation and liberalization of public utilities in developing countries.[1] We first review the characteristics of developing countries that have a bearing on the analysis of regulation and competition policy.

An essential concept is the marginal cost of public funds – that is, the social cost of raising 1 unit of funds. This cost includes in particular a deadweight loss[2] because governments raise revenues by means of distortionary taxes. It is estimated that this deadweight loss amounts to around 0.3 in developed countries, meaning that it costs citizens 1.3 units of account every time the government raises 1 unit. The inefficiency of tax systems in developing countries, coupled with the corruption that is sometimes also present, makes

[1] See chapter 3 for a discussion of privatization in developing countries.
[2] The deadweight loss depends on the type of tax used, because the tax systems are not usually optimized.

it extremely difficult for governments to invest in infrastructures and affects the cost of all types of public interventions, in particular, regulation and competition policy. According to World Bank data, the deadweight loss in developing countries is well beyond 1.0. It has been estimated at 1.2 in Malaysia and 2.5 in the Philippines, while in Thailand it ranges between 1.2 and 1.5 (Jones, Tandon, and Vogelsang, 1990). In developing our analysis we take the high cost of public funds as a given because, although tax reforms are necessary in many developing countries, it is unlikely that they will be in place quickly owing to the many financial, human and political constraints involved.

An essential instrument of regulatory and competition agencies is the ability to audit costs. Yet, developing countries are hampered by the absence of well-developed accounting and auditing systems (Trebilcock, 1996; Campos, Estache, and Trujillo, 2003). This is due to the lack of proper training programs; to the political and social difficulties that hamper the payment of incentive salaries to auditors to reward effort and discourage corruption; to the lack of up-to-date technology such as computerized systems (which makes it harder to discover cost padding and evaluate real costs); and to the inability to impose high penalties in cases of documented wrongdoing (because of the strong limited liability constraints of most economic agents).

Many developing countries also suffer from widespread corruption due, in particular, to the low internal costs of side transfers. When two parties (such as a firm and an auditor or a bidder and the auction organizer) arrange a private deal, they must take into account the costs of being discovered and the need to use indirect compensation (which is less efficient than direct compensation). The cost of these side-transfers is expected to be lower than in developed countries because they are more difficult to identify and, in addition, social norms may place a positive value on some types of side transfers (for example, when they take place within families,

villages, or ethnic groups). Accordingly, it is more difficult to fight corruption (Tirole, 1992).

Inefficient credit markets and the sheer lack of wealth make limited liability constraints more binding in developing countries. It is important to stress this point because many of the problems in regulation and competition policy result from difficulties in borrowing and attracting foreign capital. It is also worth highlighting the complementarity of general competition policy and good banking sector regulation. When the banking sector is inefficient and makes borrowing costly or impossible, an effective competition policy may destroy the rents that allow firms to invest, or may create instability.[3]

Other characteristics that hamper public utility regulation concern the government. In particular, two characteristics of developed countries that are often missing in developing countries are constitutional control of the government and some degree of ability to enter into long-term contracts. The lack of the checks and balances typical of well-functioning democracies (supreme courts, government auditing bodies, separation of powers, independent media[4]) makes the government an easier prey to interest groups and patronage. The lack of democracy and well-functioning political institutions increases the uncertainty of future regulations and makes it difficult for the government and the regulatory institutions to make credible commitments to long-run policies. Consequently, the economic policies of developing countries are even more sensitive to ratchet effects and renegotiations.

Another shortcoming of developing economies is the weakness of the rule of law. Poor enforcement of laws and contracts

[3] Mishkin (1997) concludes that "developing countries may need to move slowly in financial liberalization in order to keep a lending boom from getting out of hand."

[4] See Besley and Burgess (2001) for an empirical study of government responsiveness to media activity.

biases contracting towards self-enforcing contracts or leads to costly renegotiations.

Finally, it is essential to stress that the liberalization and deregulation of public infrastructures in developing countries often fails to attract the level of foreign capital that is necessary.

These features will be kept in mind throughout the discussion that follows, and when necessary specific advice for dealing with these difficulties in regulating and promoting competition in public utilities will be presented.

Section 1.2 discusses the structuring of regulatory agencies that favor competition, and the trade-offs involved in choosing whether or not to engage in the vertical disintegration of incumbent monopolies between the competitive segments and the natural monopoly ones. Section 1.3 presents the regulatory rules required by the monopoly segments in developing countries. The crucial issue of the management of the interface between the monopoly segments and the competitive segments is addressed in section 1.4 where access-pricing rules adapted to developing countries are discussed in greater detail. Section 1.5 is devoted to competition policy *per se* for the segments opened to competition. Universal service obligations are discussed in section 1.6. Concluding comments are offered in section 1.7.

1.2 Structural issues

The structure of regulatory agencies

A first consideration in structuring the government entity that will have responsibility for regulation and competition policy is whether these functions should be allocated to one integrated agency or separate ones.[5] In this regard, recent experiences in Australia and New Zealand are enlightening.

[5] Useful readings on the design and structure of industries include Abdala (2001) on Argentina, Bhatiani (2002) on India, and Mueller (2001) on Brazil.

New Zealand developed a very novel approach to regulation, relying only on general competition laws enforced by the courts and by an industry-wide competition authority. This approach was first used to regulate telecommunications and then electric power. The notion of self-regulation by industry was also introduced. In this case, industry participants form councils to negotiate the main rules and access conditions.

Although the New Zealand experiment was not an immediate failure, the government recognized, after some years, that there was still a need for regulatory control of industries that are not competitive enough. Indeed, this proved necessary even in telecommunications, which is the most competitive industry of the ones we are considering here. The concern is that light control of the industry is not sufficient to contain abuse of dominant position. The number of cases brought before the courts shows that rapid technological change and the technology-intensive nature of the industry make it difficult to find a firm guilty of abuse of dominant position. Moreover, the procedures involved make for very long delays. As a result, relying solely on competition laws has proved inefficient even when these laws are well developed and enforced. On the basis of this experience, therefore, we can conclude that eschewing regulation is not the right option.

Integrating general competition policy and regulation into a single agency is possible only if the regulatory agency is a multi-industry one, as in Australia. Australian regulation is organized around a federal multisectoral agency (the Australian Competition and Consumer Commission, ACCC), specialized agencies, and regional regulation. The ACCC is composed of sectoral and functional bureau and coordination entities. The Commission deals with product safety, consumer protection, access, mergers, and restrictive trade practices in all the sectors under study in this report.

The ACCC was created in 1995 following the recommendations of the Himler Report. It has taken over a significant part of the duties of specialized regulators by acquiring

responsibility for promoting competition in a larger sense. For example, the regulatory body responsible for telecommunications was closed after the creation of the ACCC. The Utility Regulators Forum, created in 1997, is responsible for coordinating regulatory activities within the ACCC. The Australian case involves integration at the federal level of regulation and competition, even if regional agencies are also used. This system can be contrasted with the one prevailing in the United States, where multisectoral ruling takes place at the state level, specialized regulation is the rule at the federal level, and competition policy is dealt with separately.

The integration of regulatory agencies is an attractive option for developing countries because they face an extreme shortage of adequately trained personnel. This is especially the case for the telecommunications, electricity, and gas industries. While there are substantial economies of scope between the regulatory institutions of those industries, they seem much less important between regulation and competition policy. To avoid creating too powerful an institution, we would generally favor a separate competition agency and, except for very large countries, integrated regulatory agencies at the federal level. The only exception might be water, which could remain at the local level. In general, technological intensity requires federal regulation to reduce costs, but accountability requires more decentralized institutions.

Good advice on this structural issue must take into account political constraints, initial conditions, and industry specificities. The variety of solutions implemented in developed countries and the experience of the different Latin American countries (Argentina, Chile, Peru, Brazil, Bolivia . . .) suggest that the trade-offs are complex (see box 1.1). They involve balancing differentiation versus coordination; creative versus destructive competition between regulators; better enforcement by local authorities versus better control by the government; local corruption versus federal corruption; industry-specific expertise versus sharing resources; and

diversifying the risks of institutional failures versus coordination (Aubert and Laffont, 2001; Smith, 2000).

Box 1.1 Structure of regulatory agencies

Specialization in Argentina

In Argentina,[1] each sectoral restructuring was accompanied by the creation of a sector-specific regulatory agency. But the specific approach adopted by each sector was quite different. While the creation and staffing of the electricity and gas regulatory agencies followed the international best practice and they had no major problems in fulfilling their obligations, the experience of the other regulatory agencies or authorities has been much poorer. The most problematic were the telecoms and water regulators, where there were not only staffing problems but also concerns with the lack of transparency of the decision making process. As for transport regulators, who have recently been merged into a single regulatory agency, the main issue has been the lack of independence from the political power.

A compromise between coordination and specialization: Bolivia

Bolivia's regulatory system constitutes a balanced compromise between a multisectoral agency and specialized regulators. It is composed of sector-specific branches operating under the supervision of a coordination entity. The structure is very similar to that of a multisectoral agency with specialized bureaus, yet it affords more independence to the branches. This, in turn, makes it more acceptable to the ministries, which might be reluctant to turn their regulatory power over to a multisectoral agency. Such an organization may help reduce the threat of capture of regulators by the industry but may fail to insulate the agency from political interference in view of its strategic importance.

The structure of regulatory agencies in China

Generally speaking, China has a mixed structure of regulatory agencies consisting of both industry-wide and sectoral agencies (ministries or departments) at both central and regional levels.

According to the law, the State Development and Planning Commission (SDPC) is the government body in charge of price regulation of public utilities. Another major SDPC responsibility is to regulate market entry and investments in public utilities. In addition to the SDPC, there are also some sectoral-specific ministries that complement the SDPC, including the Ministry of Information Industry (the regulatory agency for telecommunications) and the Ministry of Railways, etc. The latter are generally the implementation bodies.

Another structural feature of the Chinese regulatory agencies is the hierarchical structure between the central and local regulatory bodies. First, there are regional SDPCs in each layer of administrative governments. Similarly, there are some implementation bodies, either industry-wide or sectoral, at each local government level, that complement regional SDPCs. The separation of powers between the SDPC and local SDPCs is that the former is usually in charge of the control of entry and investments for big projects and the approval of price adjustment proposals submitted by local SDPCs while local SDPCs take care of smaller projects and make price adjustment proposals.

The general trend in the reform of regulatory structure is to delegate more and more of the regulatory power to regional governments. For instance, to provide incentives for the regions to make investments in electric power, the central government has given to local governments the authority to approve entry and investments in generation. It also allows the local governments to make price-purchase arrangements with independent power producers, subject to the approval of the SDPC. As a result of decentralization of regulatory power, installed generation capacity has increased rapidly and substantially so that since 1998 China has solved the shortage of energy, a problem which had plagued the economy. It is also the case in telecommunications (where, except for basic telecoms services including fixed-line and mobile phone services, not only has extensive deregulation taken place nationally, but also, when regulations remain), local regulatory agencies have gained much more discretion in terms of approval of market entry and investments and price regulations. Similar delegation has also happened in the gas and transport sectors.

With respect to the structural choice between industry-wide and sectoral regulators at the central government level, the trend is not clear, since until recently the reform of regulatory agencies has focused on separating management from regulatory and policy making functions and the attempts to set up independent regulatory agencies have only recently begun. Indeed, the government has announced that an electricity regulatory agency will be created, the first of its kind in China, at least judging by its name and status. But this event has arisen within a specific institutional setting, because unlike telecoms, railways, and transport, etc., there is now no specific regulatory body in charge of electricity regulation in China.[2] In other words there is a vacuum of power in electricity regulation. So it is really difficult to judge at present whether it will be another old-style implementation agency just bridging this power gap or is going to be a real institutional innovation, signaling that the government is determined to take a sector-specific agency approach which would eventually take the regulatory power of electricity away from the SDPC.

[1] This discussion of the case of Argentina (as in chapter 7) was valid until the crisis of January 6, 2002, which has essentially frozen the effective functioning of all Argentina's regulatory institutions.
[2] The Ministry of Water Resources and Electricity was restructured and disappeared in 1998 and the regulatory functions were taken over by the State Economic and Trade Commission, another government agency which mainly takes care of the management of state-owned enterprises (SOEs).

The structure of the industry

The industries under consideration were formerly public or regulated private monopolies providing services such as telecommunications, electricity, gas, or transportation. Segments of these industries are now viewed as potentially competitive. Some examples are long-distance telecommunications services and electricity generation. These are, therefore, the segments open to competition. Other segments continue to be considered natural monopolies. These include, for example, the electricity transmission grid, railway tracks,

and to some extent so far, the local loop in telecommunications. These industry segments remain regulated and may eventually face new forms of regulation (see section 1.3).

Three types of market structures can be envisaged for these industries: (1) vertical disintegration, (2) vertical integration, and (3) competition in infrastructures. Under vertical disintegration, the firm controlling the "bottleneck" (the natural monopoly segment) is not allowed to compete in the services using the bottleneck as an input. For example, the local telephone company owning the local loop is not allowed to compete in long-distance service using the local loop to access consumers. In the case of vertical integration, the firm controlling the bottleneck becomes one competitor among many service providers using the bottleneck as an input. Finally, in the case of competition in infrastructures, competition then takes place between vertically integrated firms, each of which controls restricted access points and provides services.

The comparison between cases (1) and (2) contrasts the economies of scope that vertical integration makes possible and the problems of favoritism it raises. The bias in developing countries should be towards vertical disintegration because the economies of scope are likely to be independent of the characteristics of these countries (at least for given technologies), while favoritism is more difficult to counter.[6] The choice between cases (2) and (3) rests on a comparison of the fixed costs associated with competition in the provision of the bottleneck (like local telephony) and the gains one may expect from this competition (Auriol and Laffont, 1992). The comparison is difficult for developing countries where the high cost of public funds makes both the duplication of fixed

[6] This should be balanced with another consideration, which is the importance of *transaction costs*, which will be higher in case (1) due to the lack of enforceability of contracts and the lack of commitment which produces constant renegotiations. (See also Ordover, Pittman, and Clyde, 1994.) Another consideration in small countries, and some industries such as electricity, is that only a vertical structure may provide a critical level of business attracting the interest of foreign investors.