Journal of Applied Economics, Vol. IV, No. 2 (Nov 2001), 217-254

INSTITUTIONS, CONTRACTS AND REGULATION OF INFRASTRUCTURE IN ARGENTINA

MANUEL A. ABDALA *
LECG, LLC.

Massive privatization in the Argentine infrastructure and public service sectors gave an opportunity to explore why we observe notorious differences in regulatory design choices and performance outcomes across sectors, under the umbrella of similar nation-specific institutional characteristics -same federal government producing reform during a short period of time (1990-95)-. Following the Levy and Spiller (1996) conceptual framework, we propose that some institutional characteristics (namely the nature of conflicts among groups affected by reform and administrative capabilities) determined a wide variety of government choices for regulatory incentives, producing different outcomes across sectors. Despite the will of the executive power to respect stable "rules of the game", episodes of government opportunism appeared in most sectors. Poor regulatory incentive design and weak agencies, on the other hand, prompted ex-post opportunistic behavior from regulated firms, which renegotiated contractual conditions to their favor.

JEL classification codes: L5, K2
Key words: regulation, institutional economics, post-privatization, infrastructure, utilities

I. Introduction

In a cross-country study on the telecommunications industry, Levy and Spiller (1996) found that the institutional endowments of each country

* mabdala@lecg.com. This article is a result of a more extensive work financed by CEDI (Centro de Estudios para el Desarrollo Institucional). I am grateful to comments from Guillermo Molinelli, Pablo Spiller, Mariano Tommasi, Matías Iaryczower, Victoria Murillo, and two anonymous referees.

constrained government's choices on regulatory governance and incentives, therefore being important determinants of regulatory effectiveness and credibility, as well as sector performance. We use this conceptual framework to examine why performance and regulatory design could vary across sectors within a same country. In this context, although most elements of institutional endowments are common to all sectors, (namely, legislative and executive institutions, nature of the judicial system, informal norms) we observe differences in the contests among groups with divergent interests. We also observe differences in administrative capabilities within government agencies. These two factors seem to help explain some of the variances found across sectors.

In particular, we make the following propositions that we explore throughout the regulatory experience in various infrastructure sectors:

a. **Mosaic of contract design was bolstered by decentralized decisions with different administrative capabilities:** Argentine public sector reform was managed in a highly decentralized fashion. Crucial reform and regulatory choices were taken within the orbit of secretariats and *ad-hoc* commissions within the Executive Power, which individually enjoyed a considerable degree of freedom on how to set up new regulatory institutions, and had little coordination among them. Different backgrounds and beliefs of decision-makers prompted a mosaic of contract design and eventually resulted in distinctive administrative capabilities, divergently affecting performance among sectors.

b. **Influence of interest groups limited regulatory design choices:** In some sectors regulatory design choices were substantially limited by the influence of interest groups. Decision-makers had to accept compromises to make reform happen. Finding these middle courses, however, typically resulted in poor regulatory incentives design, which in turn made contracts more vulnerable to opportunistic behavior from both firms and government.

c. **Unresolved conflicts among interest groups, put pressure for regulatory changes:** In some regulatory episodes, groups that were less influential at the time of reform, and therefore received little gains from privatization (or were even made worse off), are likely to put growing pressure for contractual changes in their favor. For example, these are the cases of urban poor who were asked to fully pay water access costs, or highway users facing tolls substantially above short run marginal costs.[1]

In this paper we explore regulatory design and contracts in the following sectors: telecommunications; electricity transmission and distribution; gas transportation and distribution, water and sanitation; interurban and urban highways and roads; waterways, and freight and passenger railways transportation (urban and interurban).

From the analysis of cases we also found some collateral institutional outcomes related to the cross-sector comparison of regulatory design and practice. These are the cases of important issues such as how did conflict resolution mechanisms work in each sector, the degree of autonomy and transparency of regulatory agencies, the role of Congress, and means of participation from consumer groups.

II. Institutions and Contracts in Argentine Infrastructure Regulation

A. Conceptual Framework

A satisfactory behavior of infrastructure regulation requires a delicate balance between the political stability that made reform possible, and the

[1] In other regulatory episodes, the dynamic of the market could also play an important role in generating new conflicts among groups. Technological and commercial innovations that facilitate competition in areas which were previously uncontested (such as long-distance calls in telecommunications or retail access in gas and electricity) are good examples of how enhanced competition imposes contractual stress.

flexibility needed to adapt contracts to changing circumstances and technology. To be successful in attracting private capital, the reform had to be credible and sustainable to the eyes of investors. Credible in this context means that the risk of administrative expropriation should be restrained. If investors perceive that the expropriation risk is too high they will demand in return a very high risk premium for their investment, or they would not invest at all. Spiller (1998) suggests that most countries do not have a system with constitutional protection against expropriation and that, to make things even worse, there is a lack of effective mechanisms to resolve these conflicts.

For reform to be sustainable, in turn, regulatory institutions have to be very strong to balance the demands of the different groups directly involved and, at the same time, to be able to adapt to changing circumstances. Weakness of existing regulatory institutions is a main concern in most Latin American countries. This institutional weakness could cause imbalances that allow government opportunism, facilitating decisions that favor short-run interests (of different kinds) at the expense of the interest of society (most likely, to the detriment of current and future infrastructure users). Opportunistic moves that seemingly benefit current consumers (i.e. decisions to keep prices low) may well have a very short-lived effect since private investment and product quality are likely to be reduced, ultimately hitting back on consumers.

As Spiller (1998) points out, privatization success does not depend on how the bid is organized but on how risks of administrative expropriation are managed *ex-post*. The functioning of regulatory institutions is therefore the key element to judge privatization success and whether reform will be sustainable through time. In sectors where ex-post expropriation risk is lower incentives for allocative, dynamic and cost efficiency will work properly. A collateral effect is that fiscal consequences will also be favorable, through higher net taxes and fees paid to government.

Following Levy and Spiller (1996) we can look at regulation as a design problem with two principal components: *regulatory governance*[2] and

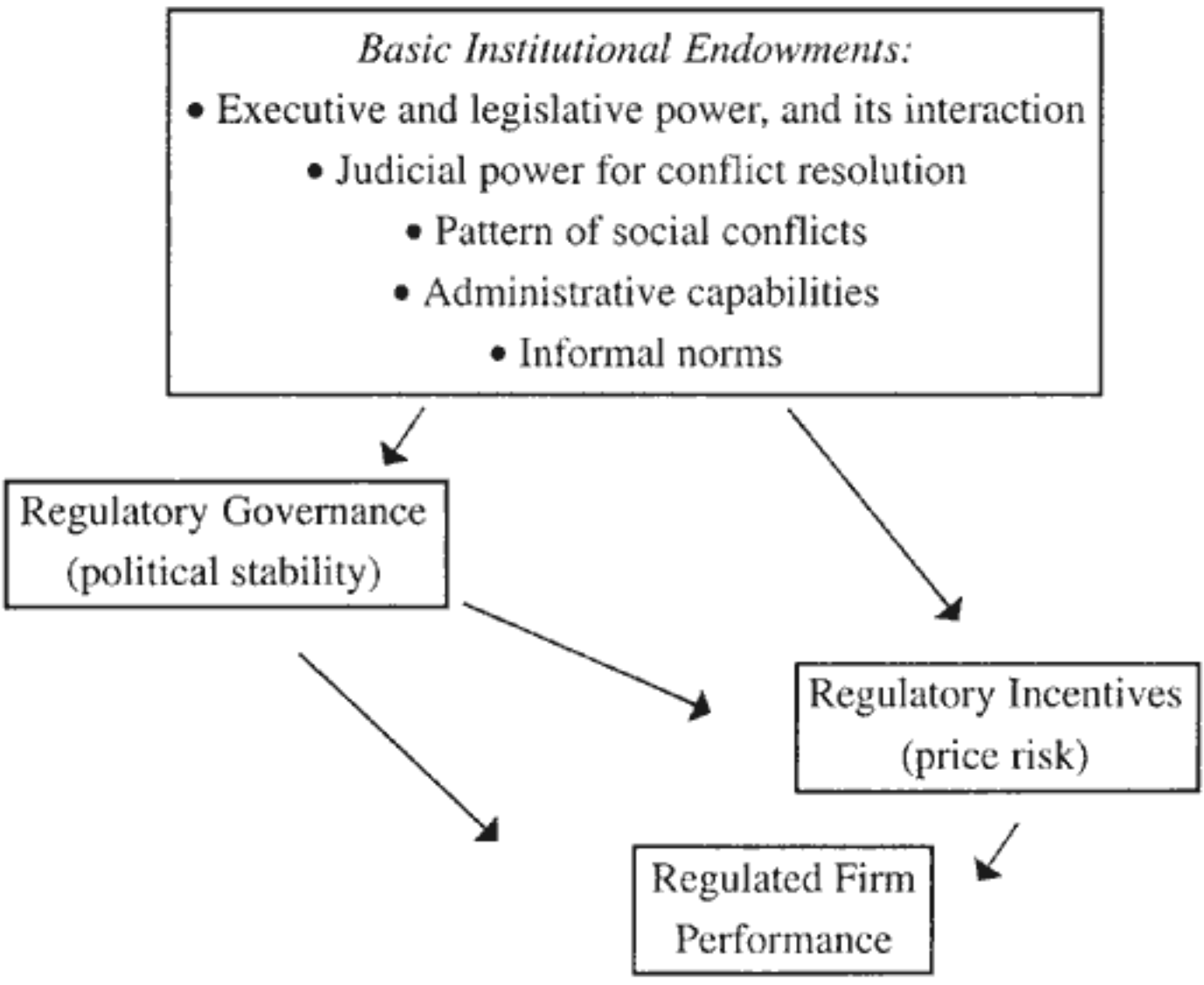
[2] Williamson (1985) called this element "contractual governance institutions."

regulatory incentives. The former refers to all the mechanisms that a society uses to restrain government discretionary moves and to solve conflicts between firms and regulators. In a more generic way Heller and McCubbins (1997) called this issue *political stability*, defined as a situation with minimum risk that government would introduce substantial changes to the way it treats investment.

The structure of regulatory incentives, on the other hand, involves the specific norms related to price regime, subsidies, competition policy, barriers of entry, interconnection rules, etc. Heller and McCubbins (1997) synthesizes this issue under the denomination of *price risk*.

Regulatory governance and incentives are choice variables for governments undertaking public sector reforms. This choice, however, is limited by the institutional endowments of the country. Figure 1 presents a scheme of this design problem of regulation.

Figure 1: Regulatory Design Choices



In general, we could argue that the basic institutional characteristics severely limited *regulatory governance* choices of Argentine decision-makers. Several authors coincide that the Menem administration was much more focused on how to make public enterprises look attractive for privatization than on how these firms were to be regulated and the new specific institutions that ought to be created for that purpose.[3] And within regulatory choices, the attention was centered on questions related to regulatory incentives rather than on the set up of the institutions that were needed to make reform sustainable. Hill and Abdala (1993), for instance, point out that in the telecommunications sector there was a conscious government decision to give priority to a speedy sale process over the creation of the regulatory body CNT (Comisión Nacional de Telecomunicaciones) and the writing of detailed and more specific norms that were needed to regulate the sector.[4] Something similar happened in electricity, where ENRE (Ente Nacional Regulador de la Electricidad) started to operate several months after the privatization of the first generation and distributions firms that emerged from the public enterprise SEGBA. A more recent example is found in airports, where the winning consortium had to delay the take over of its new activities until ORSNA (Organismo Regulador del Sistema Nacional de Aeropuertos) started its operations. In railway transportation, on the other hand, there were several agencies with jurisdiction over different railway services, which eventually were merged into CNRT (Comisión Nacional de Regulación del Transporte). Lastly, in the waterways concession for the lower Paraná river, the regulatory agency that was supposed to be in charge of regulating the sector (according to what was set through a Presidential decree) was never organized.

---

[3] See among others, Spiller and Levy (1993), Hill and Abdala (1993), Shaikh et. al. (1995), Rausch (1995), Baylac (1996), and Heller and McCubbins (1997).

[4] The CNT later turned into CNC (Comisión Nacional de Comunicaciones).

B. Basic Institutional Characteristics

Interaction between the Executive and Legislative Power

The main restraints to the exercise of discretionary power comes from the constitutional provision that establishes the principle of division of powers, the representation of legislative chambers, and the decentralization that emerges from a federal organization.

Spiller (1998) comments that Latin American countries have strong presidential systems where laws passed by the legislative power normally have to be "regulated" by a presidential decree. In the United States, on the contrary, administrative agencies directly implement the law, while Congress watchdogs that its spirit and interpretation is not altered. As a consequence in the United States utility regulation laws are very detailed whereas in Latin America (with some exception in Chile) laws are more generic and its detailed regulation is entrusted to the Executive. Discretionary moves by the Executive are then more likely, since it has powers to alter the regulatory incentives faced by firms, and therefore determines the success or failure of privatization programs. In a few sectors the Argentine Congress have passed specific legislation to set regulatory frameworks for privatized utilities (gas, electricity, oil, ports, and nuclear assets). But even in these cases some powers were granted to the Executive to retain control in key aspects such as tariffs, competition policy and barriers of entry. This high degree of discretion in the hands the Executive makes short-run interests to prime and this also had an adverse consequence on the autonomy of regulatory agencies, as it will be seen below, in section C.

The relationship between the executive and legislative was nurtured by the special political conditions prevalent in 1989, when Menem took office. As part of a broader political agreement with the opposition, Congress passed two laws that were key to the privatization program: a State Reform Act and an Economic Emergency Act. The first one gave the Executive phenomenal powers to reorganize and privatize public enterprises, while the latter

suspended subsidies and lifted barriers to foreign investment. This delegation of broad powers to the Executive is an exception to the *beggar-thy-neighbor* policy that normally prevails in Argentine politics, where the only beneficiaries are the short-term interests of the party in power, to the expense of the economy and giving rise to a polarized society.[5]

The influence of the Argentine Congress in regulation was therefore limited, and centered on generic bounds given to the Executive, rather than on the specifics of how to privatize and how to regulate. Currently, Congress participates through a special commission that follows up privatized utilities and, through one of its agencies, the national auditing body (*Auditoría General de la Nación*) which controls the performance of regulatory bodies. This is not a static status quo, however, since Congress has progressively been trying to obtain a larger role in the matter.

Judicial Institutions

When laws and administrative procedures are not enough to restrain discretionary moves from government, a competent and honest judiciary provides an alternative road to avoid administrative expropriation.

In Argentina, judges are in general not seen as either truthful or skilled to perform this task. A recent Pan-American poll conducted by RAC & Mori International made in February 1998 revealed that only 15% of Argentines have a positive view on their judicial institutions. In the United States, the same question had a 59% acceptance, whereas the average for Latin America was 25%. Other polls show similar results.[6]

The new Constitution enacted in 1994 modifies the way judges are appointed and eventually removed. It creates a special forum (*Consejo de la Magistratura*) that promotes competition and requires qualifications for the

[5] See Levy and Spiller (1993).

[6] See for example the Gallup, and Fundación CEDEAL results cited in Abdala (1998).

appointment of judges. It also provides a procedure for removal that is more independent from political parties. But these changes were implemented very recently, during 1998.

Spiller (1998) interprets that the judicial power in Latin America, unlike its American counterpart, does not have enough experience in supervising the way that the Executive "regulates" the laws. It rather concentrates on determining whether a regulation is against the Constitution or not.

Since the judicial system offers little guarantees as a mechanism to solve conflicts between firms and regulators, foreign investors sought additional protection from international agreements. If countries are members of trading blocks the possibilities of introducing subsidies to electricity or gas tariffs, for instance, are limited, and these are sources of additional preservation against opportunism. The more open the economy the more vulnerable the country to suffer retaliation if it violates settled trading practices. There are also bilateral agreements that refer to the way countries should treat foreign investment. Finally, conditions imposed by multilateral credit organizations which helped finance reforms also constitute an additional safeguard for investors.

Administrative Capabilities

This element refers to the skills and ability of government human resources to handle complex regulatory concepts and processes in an effective way, minimizing conflicts and unwanted legal contests.

It is not simple to evaluate this characteristic within the Argentine context since there are scarce elements to evaluate it objectively. Our main proposition is that the different backgrounds and beliefs of decision-makers that were in charge of implementing reforms prompted a mosaic of contract design and resulted in distinctive administrative capabilities of regulators across sectors. Let us turn to the group of decision-makers first.

The Argentine public sector reform was managed in a highly decentralized fashion. In a study undertaken by the General Accounting Office (1996) about

how different countries had privatized public utilities it was noted that one of the main peculiarities of Argentina was that the process of decision making was less centralized and much more flexible than other countries such as Mexico, France, UK, New Zealand, and Canada. This decentralized feature was explicitly embodied in the State Reform Act, which allowed reform and regulatory choices to be taken within the orbit of secretariats and *ad-hoc* commissions within the Executive Power. These secretariats and commissions had little coordination among them, sometimes even null. If any economies of scope existed in the design of reform across sectors, these were apparently lost. Decision-makers did not have to follow any rigid procedures on how to privatize, and even less on how to set up regulatory institutions. The GAO report also points out that the flexibility and speed with which Argentina privatized its main public services could help explain why regulatory administrative capabilities were not best developed, since government may have not been able to set up adequate regulatory environments while it was undertaking the privatization effort.

Decentralization meant that reform decision-makers had different background, beliefs and also administrative capabilities.[7] This, in turn, helps explain the variety of contract design and therefore performance found among sectors. Table 1 summarizes some of these differences.

As for the administrative capabilities of regulators, we looked backward to the issue and found that Gerchunoff and Visintini (1990) stated that political and macroeconomic instability had inhibited the creation of a bureaucracy with enough capacity to regulate private utilities. The authors argued that since the rate of return demanded by investors included such a high-risk premium, regulators were keen to protect firms in those sectors where sunk investment had been made. Therefore, in their opinion, Argentina was missing a class of skilled regulators capable of confronting strong demands from regulated private firms.

[7] According to Rausch (1995) "Each privatization was designed according to the peculiarities, interests and available technical capabilities of each sector."

Table 1. Regulatory Design across Key Infrastructure Sectors

Sector	Year of Reform	Type of Contract	Contract Duration	Incentives	Revisions
Telecommu-nications	1990	2 exclusivity licenses nationwide.	7 years + option to 3.	RPI-X on basket of services. Quantity and quality targets.	Regulated prices revised at license end.
Electricity distribution	1992	2 concessions in Buenos Aires 1 concession in La Plata.	99 years subject to competition every 10 years.	Automatic pass-through on administrated wholesale prices. Price cap on individual services Penalties on quality.	Price cap revision every 10 years, no methodology specified.
Electricity transmission	1993	1 concession for nationwide high-voltage, 5 concession for regional transmission.	99 years subject to competition every 10 years.	Revenue cap. Penalties + bonuses on quality.	New revenue cap based on energy losses, every 5 years in public hearing.
Gas distribution and transportation	1992	10 Licenses, permits or concessions nationwide.	35 years, renewable to 10 additional years.	RPI-X+K Regulated pass-through on wholesale contractual prices.	X and K factors revised every 5 years in public hearing.

Table 1. (Continue) Regulatory Design across Key Infrastructure Sectors

Sector	Year of Reform	Type of Contract	Contract Duration	Incentives	Revisions
Buenos Aires Water and Sanitation	1993	1 concession in Buenos Aires.	30 years.	Hybrid price cap + cost-plus. Detailed investment programs. Coverage targets. Quality controls.	Investment plan to be adjusted every 5 years.
Interurban toll roads	1990	20 concessions nationwide.	12 years.	Fixed toll price adjusted by LIBOR. Cannon to government (later turned into subsidy). Detailed investment programs.	Case by case basis.
Buenos Aires urban toll highways	1993	3 concessions in Buenos Aires.	22 years + 8 months, renewable to 1 additional year.	Price cap on tolls. Pass-through of expropriation costs. Investment programs w/penalty.	Case by case basis.
Railways freight	1991 to 1997	6 exclusivity concessions nationwide.	30 years, renewable to 10 additional years.	Investment, maintenance + employment targets. Cannon to government. Cap on access charges.	Case by case basis.

Table 1. (Continue) Regulatory Design across Key Infrastructure Sectors

Sector	Year of Reform	Type of Contract	Contract Duration	Incentives	Revisions
Railways Interurban passengers	1991 to 1997	Transferred to provinces or added to freight/urban concessions.	-----	Government subsidies. Cross subsidies.	Case by case basis.
Railways Buenos Aires passengers	1992	7 concessions.	10 years, renewable. Subways = 22 years.	Fixed price subject to costs pass-through. Government subsidy. Penalties + bonuses on quality.	Case by case basis.
Paraná river waterways	1995	1 exclusivity concession.	10 years.	Fixed toll price. Government subsidy.	-----

Notes: RPI - X or RPI - X + K refer to the tariff adjustment formula of a price cap regime. RPI stands for Retail Price Index, X is an offset or productivity factor, and K is a factor related to special investment projects.

If we agree that capable human resources were not available at the end of the 1980s, then what did change, if anything, with respect to the stock of human capital that the government had in the early 1990s? The newly created regulatory agencies had some extra support at least in their initial phases. In most agencies external consultants were hired to help organize their activities and to erect their administrative capabilities. However, the culture of a "modern regulator" is likely to be still missing. As the World Bank (1993) pointed out, autonomous regulatory agencies administering key legislation on public services are unfamiliar institutions to the recent Argentine history, so one must expect that it will take several years to develop proper administrative capabilities.

The most evident differences in administrative capabilities related to decentralization can be found since the inception of each regulatory agency. Whereas in electricity, gas, telecommunications and water a new agency was set up, in other sectors such as interurban road transportation the transition to a more specialized regulatory body was slower, and the administrative capabilities of regulators suffered with such organizational delays. It took the Secretariat of Public Works (SPW) two years to delegate regulatory power to Dirección Nacional de Vialidad (DNV) which had an internal group paralleling SPW's *de-facto* regulatory functions. Eventually, DNV created an internal branch called OCCV (Organismo de Control de Concesiones Viales) to regulate road concessions. A similar situation applied to railway regulators, a sector which needed more than three years (from September 1993 to November 1996) to sort out a more stable institutional setup. In waterways, the start-up situation was even worse, as the regulatory agency that ought to be created was never put in place (the Undersecretary of Waterways taking its role).[8]

Needless to say, decentralization also meant that the scope, degree of

[8] For more evidence on the organizational differences among agencies and its various degrees of real power and autonomy, see Abdala (1998), Artana et. al (1999), FIEL (1999), Urbiztondo et. al (1997) and Vispo (1999).

autonomy and internal organization of regulatory agencies differed across sectors. Not all agencies have been organized with sufficient technical and professional staff needed to handle complex regulatory issues. In ETOSS (Ente Tripartito de Obras y Servicios Sanitarios), the staff is not highly qualified compared to other regulatory bodies. The staff skills may not be the best for a regulator whose most important responsibility is tariff setting; ETOSS had only four economists and four accountants versus 20 engineers in 1995. On the contrary, the professional composition of ENARGAS (Ente Nacional Regulador del Gas) by 1994 shows 30% of engineers, 19% from economic sciences and 13% lawyers. ENARGAS, as well as ENRE, has also developed specific methodologies and internal procedures for resolving cases, that are far more advanced than those observed in other agencies.

The composition of the board of directors is another indicator that speaks about the sources of differences in administrative capabilities. In ETOSS, given its multi-jurisdictional scope, directors have been appointed politically, without open competition. The same occurred in CNC, albeit for different reasons (successive interventions). Political appointees are less keen to develop a well-endowed professional task force of regulators.

Public opinions about the perception of the performance of regulators seem to reflect this disparity on technical qualifications. ETOSS (water and sanitation), CNRT (transport), CNC (telecommunications) and ORSNA (airports) are among the most controversial and are perceived as low performers. On the other hand, ENRE (electricity) and ENARGAS (gas distribution and transportation) enjoyed a good reputation.[9]

Pattern of Social Conflicts

We distinguish two basic components for patterns of social conflicts: the

[9] ENRE's reputation was severely damaged during the prolonged blackout suffered by Edesur users in February 1999. A recent poll showed that 66% of interviewed people thought that electricity distribution was poorly regulated.

contests among influence groups with divergent interests and conflicts attributed to ideological causes. We discard the latter in the Argentine context and concentrate in the nature of conflicts among interest groups.

During the reform process, interest groups had influence over decision-makers both at the legislative and executive levels. In some sectors decision-makers had to accept compromises to make reform happen, as regulatory design choices were limited by the influence of interest groups. This settlement typically resulted in poor regulatory incentives design, which in turn made contracts more vulnerable to opportunistic behavior from both firms and government.

After reform, many of the contending interests did not disappear. In some sectors these conflicts (and their divergent views about the effects of regulation) were more severe than others. For instance, the impact of high toll fees on current road users was higher and more visible than the unaffordable access charges originally established for new water and sewerage users.

In utilities and public services where users coincide with a massive urban population (such as residential users of water, telecommunications, gas, electricity, urban railways transport and urban highways), government is more keen to be receptive to their demands since these consumers typically form a big part of its voters. In these sectors users (or subgroups of users) are more visible and politically influential and hence there is a growing pressure to keep prices low and to alter conditions in favor of users. Government has been tempted to behave opportunistically, altering contracts to benefit its supporters. However, it is also true that in certain circumstances government interests may coincide with those of the regulated enterprise (for instance, when government retains a stake in the firm, when subsidies are at stake, or when government makes specific requests for new or accelerated investment). Under these particular conditions the influence of users as a group of interest could become more diffuse, depending also on the proximity of election dates.[10]

[10] For example, during 1991/92, the government was interested in selling its shares from Telecom and Telefónica. In a move that increased enterprise value, government extended

The government would in principle be less receptive to less massive (and therefore less visible and less influential) users such as those consuming interurban railways passenger and freight transportation, airport services, waterways, electricity small-businesses, long distance telecommunications, interurban toll roads, and population who is yet to receive water and sanitation services. Some of these groups of users may try to exercise influence through organized associations like industry chambers and associations (i.e. freight transportation). In other cases they may seek political representation and influence through the opposition party (like the urban poor who were yet to be connected to water and sanitation services) or through provincial governments (long distance telecommunication users, waterways, interurban railways transportation, interurban roads). We must notice that this is an unstable situation since groups that were less influential at the time of reform, and therefore received little gains from privatization (or were even made worse off), are likely to put growing pressure for contractual changes in their favor.

This instability has clearly been the case of the water and sanitation sector, where the population who was yet to be connected to the municipal service faced exorbitant access charges. Such situation was hard to sustain both on historic and present equity grounds. When the water service was in the hands of the former public enterprise OSN (Obras Sanitarias de la Nación), access charges were negligible, and the wealthiest population was the recipient of these subsidies, which were financed basically through taxpayers money. The population that OSN was unable to serve (at the time of privatization, 1993, unsatisfied demand accounted to 30% in water and 48% in sewerage) claimed that they should also be connected without having to pay high access charges. Considering water connection externalities and taking into account

exclusivity licenses to five provinces originally served by other operators (CAT and CET), who had been recently taken over by Telecom and Telefónica. It also granted free entry to the second band of cellular services nationwide. Both actions precluded the possibility of increased competition for the market, which could have benefited consumers.

that the main beneficiaries are the poor, there are strong reasons why government should allow some forms of direct and/or cross subsidies in water and sanitation access.

Unfavorable macroeconomic conditions (deficit of current account, recession, high unemployment, etc.) together with lack of progress on structural development conditions (such as income distribution, education, health and others) will also put pressure for changes in the way utilities are regulated. Both the executive and legislative power may be tempted to enforce redistributive measures through the way tariffs are determined or through other means. New competitive forces (a technological or commercial innovation) will likely put stress on outdated contractual arrangements. This has been the case of sectors like telecommunications, gas and electricity.

We must point out that despite the unresolved conflicts of interest among contending groups presented here, in all sectors there are substantial improvements in the performance of private utilities, especially when compared with their past public counterparts. The sectors where investment flourished the most (hence performance is better in relative terms) were telecommunications, electricity and gas. In water and sanitation, railways, toll roads, and waterways, private investment was of a lower absolute magnitude though nevertheless there were improvements at quantity and quality levels. In all transportation sectors government subsidies were high before reform. Subsidies were reduced with reform (although they did not disappear), and recently there has been a tendency to gradually eliminate them within the current renegotiation wave.

C. Regulatory Governance

What actions did the Argentine government take to restrain itself from exercising ex-post opportunism in privatized infrastructure sectors? The answer is not uniform across sectors, although there are several common patterns, like the following:

a. **Government promoted credibility and commitment** to reform completion and to make it sustainable through time. It made clear that it would respect the basic rules of the game under which private investment took place. The elements used for credibility varied from informal contacts with business leaders to political pressure on regulatory agencies and other institutions in charge of solving conflicts. We could say that, in general, whenever there was a major potential conflict because of new circumstances or due to gray areas in the interpretation of contracts, the executive power (not necessarily the regulatory agencies) would give the benefit of the doubt to investors (sometimes at the expense of other goals such as promotion of competition, or consumer protection). This was a strong signal that the government was willing to show commitment to reform. But through time the need to show commitment and promote credibility was fading. And given the change in public opinion about the way privatized firms were regulated, the credibility element was certainly losing grounds, and the new administration that took office in 1999 is not committed in the same way as Menem's.

b. **Government created specific legislation** to protect investors, creating new regulatory frameworks for each of the infrastructure sectors. Where feasible, it promoted primary legislation (laws), such as in electricity, gas, oil, ports, and nuclear activities. Otherwise, presidential decrees were used. The executive power had a considerable amount of discretion to "regulate" primary legislation. It did so through enforcement of presidential decrees regulating or complementing the laws, and through the use of ministerial and secretariat resolutions. All of this secondary legislation is relatively easy to overturn.

c. **Government created new regulatory agencies** known as "*entes reguladores*" and transformed some of the existing ones (such as Dirección Nacional de Vialidad). In some cases efforts were made to turn these agencies into autonomous and capable institutions. But despite all what has been said about the subject, regulatory agencies enjoy a very low degree of autonomy

from the Executive power[11]. Despite all sort of formal efforts to grant some autonomy (budget independence, appointment and duration of directors, etc.) the truth is that whenever the Executive felt that regulators were taking decisions that could harm its short-term interest, no formal barriers to the removal of appointees seemed to be effective. To illustrate this point, it is noteworthy to find that in those agencies where formal barriers to discretionary exit were stricter (such as CNC where a previous indictment is required, or ETOSS where removal requires to overcome a heavy bureaucratic procedure within the public administration) removal has been more common and frequent than in other agencies (like ENARGAS and ENRE) where office removal only requires a justified decision by the Executive. For example, during its first eight years of existence, six different presidents have directed CNC, three of which were "*interventores"*. A clear example of how easy it is to alter attributions of newly regulatory agencies, including its board of directors, comes from the transportation sector. In railways, the government created in 1993 the CNTF (Comisión Nacional de Transporte Ferroviario) to handle regulatory issues related to freight and interurban passengers. Urban and metropolitan railways were handled directly by an existing agency within the Ministry of Economics. A special agency was also created to solve contractual conflicts, the CNRF (Comisión Nacional de Regulación Ferroviaria). This institutional set up did not last more than eight months. In April 1994 the government realized that there were overlapping functions between CNTF and CNRF, and limited the attributions of these agencies, transferring decision power to the Secretariat of Transport. In November 1996, there was a new institutional reshuffle, and all railway regulatory agencies were merged with an existing agency that regulated automobile transportation. In this process, existing directors were removed and new commissioners appointed. Government clearly failed to make these agencies less vulnerable to the short-run interests of the executive power. This is an important institutional weakness of the Argentine design to regulate

[11] For a recent work see, for instance, Urbiztondo et. al (1997).

privatized utilities. In addition, in many cases there are overlapping functions between the regulatory agency and the Ministry or the Secretariat which is the primary body in charge of solving the most relevant aspects of the contractual relationship between firms and government (such as tariffs, investments, duration of the concession, etc.). Other relevant decisions like barriers of entry or competition policy are within the domain of Secretariats and are not supervised by the antitrust agency (Comisión Nacional de Defensa de la Competencia). There are some gray areas of jurisdiction both at this level as well as with sectors that have provincial incumbencies.

d. **Government celebrated written contracts with privatized firms.** These contractual agreements normally took the form of concessions (electricity distribution and transmission, roads, railways, water), although there were other arrangements such as exclusivity licenses (telecommunications), and permits (gas, and at an early stage, telephone cooperatives). In more competitive sectors such as electricity generators, the general contractual conditions were established in the core bidding documents signed at the time of privatization. Contracts have a considerable amount of detailed regulation (investment requirements, tariff regime, quality and quantity targets, penalties, incentives and so on). They also include exit conditions and the specific mechanisms for conflict resolution. Since contracts can not foresee all future circumstances and technological changes, there was also a need to establish procedures on how to review and modify contractual terms under these contingencies. Uniformity across sectors is also absent here. In some sectors procedures are more specific and transparent (requiring mandatory public hearings, etc.) whereas in others there is poor design, which led to poor regulatory practice at the time of reviewing contracts, ultimately giving way to global contractual renegotiation.

e. **Government promoted conflict resolution mechanisms** through specific clauses contained in contracts and in some cases through attempts to grant administrative judicial powers to the newly born regulatory agencies. It

is noteworthy to see that regulators' decisions are first appealed to the Secretariat or the Ministry in charge. This reveals a low degree of autonomy and, mainly, that the government was never convinced of granting too much power to regulatory agencies.

D. Regulatory Incentives

The incentives and detailed regulation varied enormously across sectors. Therefore, in this section we try to summarize the nature of the main differences, although we also identify a few common patterns that are shared by some sectors.

Competition for the Market

The first type of regulation shared by all sectors is the presence of competition for the market. Typically the rules for this type of competition involved a first pre-qualification stage where potential entrants had to demonstrate that they met certain requirements regarding size, financial capabilities, and relevant experience in the sector. In a second stage, the bid was decided upon one of the following criteria: highest initial payment to government (electricity, gas, telecommunication), lowest subsidy (urban railways), highest annual fee to be paid to government (urban roads, freight railways), lowest initial tariff (water), and some combination of these elements plus investment and employment targets (interurban roads).

Regulation in the Market

As for regulation in the market, in all sectors we observe a conceptual departure from more traditional forms of regulation (i.e. rate of return regulation) to incentive regulation, although not in its pure form. It is common to recognize price cap regulation in many sectors, though usually combined with complementary clauses containing cost-plus elements (either because a

critical input is involved, as in electricity or gas, or because protection was granted towards increases in contingent cost elements like taxes, environmental norms, change in macroeconomic conditions, exchange rate and others). The results are some forms of hybrid type of regulation where incentives towards firm efficiency are mixed. In addition, quality targets for services and products were required in all sectors, as well as detailed investment programs in at least three sectors (water, roads, and railways). The latter created difficulties for regulators due to strong information asymmetries. Unsurprisingly, investment rates were higher in those sectors where specific and detailed targets were not imposed (electricity, telecommunication, and gas).

Tariff Revision Mechanisms

The mechanism for tariff revision also varied across sectors. In electricity distribution the first tariff revision is due in the year 2002, and the methodology for this revision has not been fully specified. In electricity transmission the first tariff review took place in 1998 and ENRE had to make additional interpretations to the existing methodology to produce a decision, which left main transmission users unhappy (mostly generators).

In telecommunications and interurban roads, extraordinary macroeconomic circumstances (the introduction of the Convertibility plan) forced a renegotiation to eliminate escalation clauses from the automatic review process. But in telecommunications the most publicized event related to tariffs was the issue of how to deal with cross subsidies. The licenses contained some provisions for rebalancing tariffs to gradually eliminate cross subsidies. After three years of several public hearings and changes of regulators, the Supreme Court sustained a government resolution that raised prices for local calls to compensate for lower international and national long distances rates.

In water, the norms foresaw that, after the first five years, tariffs could be adjusted according to the evolution of a simple indicator (income per client). However, changing circumstances regarding investment requirements and

collection problems with access charges resulted in a broad contract renegotiation that altered the basic parameters for the original tariff revision mechanism.

Contract Duration

The duration of the contractual arrangement has been a delicate issue that was treated quite differently across sectors. In telecommunications, exclusivity rights for main basic services (local and long distance calls) were extended and two new licenses were granted on highly discretionary grounds. The same discretion was observed in waterways, interurban roads, and railways where contracts have been renegotiated and the duration of concessions extended.

Unlike other sectors, the concessions for electricity distribution were granted for 99 years, but they can be contested every 10 years. This was designed so as to avoid the problems related to lack of investment at the end of the concession term. The incumbent, though, has some informational advantages, not meeting the requirement of a strict bidding parity condition.

In gas, licenses were granted for 35 years, renewable to 10 additional years. In Buenos Aires urban railways, since the main concern at the time of privatization was to improve and maintain existing assets, concession contracts were granted for only 10 years.[12] Growing traffic, combined with an increased demand for better quality conditions have triggered a need for further investment that were not foreseen at the time of privatization. Urban railway contracts are therefore being renegotiated on the basis of greater investment, in exchange for higher tariffs and extended duration. The latter is clearly limiting the chances to introduce further competition in the future. Something similar is happening with interurban road concessions.

[12] With the exception of the Urquiza line (sold together with the subway system) for which 22 years were granted.

Poor Regulatory Incentive Design Prompted Private Opportunism

The examples above indicate that poor regulatory incentive design increased the likelihood for ex-post opportunistic behavior from regulated firms. The combination of poor incentive design with weak regulatory agencies is doomed to result in some form of renegotiation that may alter conditions in favor of firms. Let us recall that, when a renegotiation process is initiated, firms are in a better position than government due to information asymmetries. The government is typically not well prepared to forecast key elements such as the evolution of technology, demand conditions and cost efficiency.

E. Analysis of Regulatory Episodes

In Table 2 we present a list of the most relevant regulatory episodes that illustrate problems derived from wrong regulatory governance structures, poor regulatory incentives, or both.[13] Even if the right incentives were in place, inappropriate governance structures have lead to regulatory conflicts. Episodes related to governance show that despite the will of the executive power to respect stable "rules of the game" and to avoid introducing political risk, government opportunism appeared in various sectors. In roads, some firms were unable to fully collect government subsidies that were set in their concession contracts. In natural gas, the regulator tried to limit the scope of the contractual clauses for which distributors could pass-through the price of gas bought at the wholesale level.[14] A similar episode happened with ETOSS, in

[13] It should be noted that some of the conflicts are sometimes exacerbated or even triggered by external shocks such as a technological outbreak that changes the competitive structure of the market. For example, the conflict of cross subsidies in telecommunications has been intensified by the emergence of call back services.

[14] It must be said that not all of the gas pass-through conflict can be attributed to contractual opportunism. There have also been technical difficulties and dynamic factors that caused contractual stress. For more details, see chapter 12 in FIEL (1999), as well as Abdala and Spiller (2000).

Table 2. Regulatory Episodes Related to Wrong Regulatory Governance and Poor Incentive Design

Sector	Contending Interests and Nature of Conflict	Regulatory Action	Outcome
		EPISODES MAINLY RELATED TO POOR INCENTIVE DESIGN	
Telecommu-nications	Extension of exclusivity for three years, contested by potential entrants.	CNC and SC (Secretariat of Communications) extended exclusivity for two years and launched a "liberalization plan" where entry to basic services was restricted to four operators.	Government created artificial barriers to entry, which will severely limit competition and options for residential users, especially in non-urbans areas. It is unclear how universal services will be financed. Uncertainty about scope of future regulation.
Electricity transmission	5-year revenue cap revision: Following contractual methodology meant a 20% decrease in Transener prices, favored by generators, opposed by Transener.	ENRE found a middle course solution granted a 9% reduction, after a public hearing was held.	Generators appealed ENRE's decision to SE (Secretariat of Energy), which sustained ENRE's position.

Table 2. (Continue) Regulatory Episodes Related to Wrong Regulatory Governance and Poor Incentive Design

Sector	Contending Interests and Nature of Conflict	Regulatory Action	Outcome
Railways Buenos Aires passengers	Real demand higher than expected. Tariff + subsidies could not finance major investment in a short contractual term (10 years). Besides, government wants to eliminate subsidies.	Agency bypassed by ST (Secretariat of Transport). Renegotiation case by case. Process not transparent. Judicial decision forced public hearing, though it did not alter procedure/results.	First renegotiations yielded gradual tariff increases, eliminated subsidies and substantially extended contract duration.
Interurban toll roads	Initial toll price was too high (US$1,5 p/100 km, indexed to US$ 2,3). Users could not afford.	1991 Convertibility Law prohibited indexation, gave gave room to price renegotiation.	Toll lowered to US$ 1,00. Cannon to be paid to government eliminated, transformed into subsidy.
Interurban toll roads	Original investment plans related to maintenance only, were insufficient to meet growing demand. Besides, government wants to eliminate subsidies.	Renegotiations not ended yet. Congress intervention. Agency bypassed by SPW (Secretariat of Public Works).	To finance investment and eliminate subsidies, either tariff should rise, or contract duration extended. The former strongly resisted by users.

Table 2. (Continue) Regulatory Episodes Related to Wrong Regulatory Gov. and Poor Incentive Design

Sector	Contending Interests and Nature of Conflict	Regulatory Action	Outcome
	EPISODES MAINLY RELATED TO WRONG REGULATORY GOVERNANCE		
Telecommu-nications	Call back use, mainly by commercial users, resisted by Telefonica, Telecom and Telintar.	CNC took ambiguous action, a judge banned the call back, but Chamber of Appeals reverted it.	CNC unable to control call back. Companies lost revenues on international long distance calls.
Electricity distribution	Increased retail access competition eroded distributors revenue.	SE promoted competition, pushing for lower prices to end-users.	Distributors resisted and obtained high-regulated prices for transmission fees. Market opened up to 0,1 MW only.
Gas distribution	Concentration at the production level threatens price increases to domestic end-users.	ENARGAS limited pass-through of wholesale prices in distribution, and used discretion to favor end-users.	Lack of predictable rules made ENARGAS decisions vulnerable to government opportunism.
Gas distribution and transportation	5-year RPI - X + K revision, basic contending interests between consumers (represented by ENARGAS	After public hearings, ENARGAS strategically announced X factor before 1997 election date, price reductions were to be	Roll-in methodology adopted for K factor, meaning existing users will also pay for investment related to

Table 2. (Continue) Regulatory Episodes Related to Wrong Regulatory Gov. and Poor Incentive Design

Sector	Contending Interests and Nature of Conflict	Regulatory Action	Outcome
	and consumer associations in public hearings) and firms.	effective at beginning of new term. K factor was announced after elections, price increases spaced out during 5-year term.	increased coverage for new customers.
Buenos Aires urban toll highways	Expropriation costs higher than expected, produced delays in works. Additional investments required.	OCRABA's (regulator) rules to solve conflicts were not transparent.	Toll increased to finance higher expropriation costs and additional investments.
EPISODES RELATED TO BOTH WRONG REGULATORY GOVERNANCE AND POOR INCENTIVES			
Telecommu-nications	Local users subsidize national and international long distance users. Commercial fixed charges subsidize residential.	CNC held public hearings during two years promoting rebalancing, as provided in contractual conditions. Decision appealed and suspended by 15 months.	Resolution took > 3 years Groups against: urban users of local calls, political opposition. In favor: long distance users, provincial governors, and commercial users. Supreme Court ruled in favor.

Table 2. (Continue) Regulatory Episodes Related to Wrong Regulatory Gov. and Poor Incentive Design

Sector	Contending Interests and Nature of Conflict	Regulatory Action	Outcome
Buenos Aires Water and Sanitation	Government demanded additional investment to favor interest groups either to avoid conflicts (1994 relocation of shanty towns) or to benefit its short-term interests (1997-98, announcement of additional environmental works). Access charges to new users were not affordable by the poor. Incompatible with contractual coverage targets.	ETOSS did not play a role, bypassed by Secretariats. In 1997, a global contractual renegotiation was triggered. High information asymmetries favored firm. Initially, ETOSS granted increases in access charges, aggravating the problem. Firm unmet coverage targets ETOSS bypassed by SPW.	Tariffs were increased in both episodes (1994 and 1998). New investment targets set, but enforcement problems persists since firm may seek to renegotiate again in the future. ETOSS sanctioned unfulfilled coverage targets, but could not enforce fines. Firm sought a global renegotiation. Solution to access problem: cross subsidy from existing users.
Railways freight	Bidding criteria yielded *Lowballing*. Real demand lower than planned, so investment was curtailed and wants to revise canon.	Agency bypassed by ST. Renegotiation case by case.	Renegotiation under way.

Table 2. (Continue) Regulatory Episodes Related to Wrong Regulatory Gov. and Poor Incentive Design

Sector	Contending Interests and Nature of Conflict	Regulatory Action	Outcome
Paraná river waterways	Existing concessionaire applied for extension of scope and contract duration. Conflict not apparent since it mainly affects future users.	Agency was never created. Undersecretariat of Ports decided changes with low transparency.	Contract scope and duration was extended without calling for competitive bids.

the water sector. In electricity, the Secretariat of Energy, by pursuing a proactive policy in promoting competition, fostered a progressive schedule for retail access nationwide, changing the initial conditions under which Buenos Aires distributors obtained their concession rights. In telecommunications, the group of visible and politically influential urban users pressured to keep local prices low, and some sectors within government have been tempted to behave opportunistically, denying or retarding a needed price rebalancing.

Combinations of poor incentives and weak governance have also lead to problems, as illustrated in Table 2.

III. Alternative Proposals on Regulatory Governance

The role of government institutions such as Congress has been the center of recent debate, especially in the last two or three years, when changes in contractual conditions of privatized firms became more widespread. All initiatives arising from Congress aimed to increase legislative controls, to balance executive discretionary moves. Although this is a desirable direction, the way in which Congress should intervene is not trivial. In one extreme position, there are some deputies that launched the idea of creating a "*Super Ente*", that is, a supra centralized agency for all sectors, that within the orbit of Congress would have ample authority to interpret and enforce existing regulatory norms. The main argument supporting this idea is that existing regulatory agencies are "harmless controlling bodies" of privatized monopolies because their authority has been constrained by the executive's decisions, which tend to maximize its political interests, not necessarily coincident with those of consumers. It is also argued that existing agencies are too independent among them, generating a lack of consistency in certain norms that requires coordination (i.e. natural gas and electricity should coordinate policies regarding the rational use of energy). The Chilean example of a centralized agency is cited as a successful story where coordination problems have been overcome, and where the convergence of lobbying activities due to the over-specialization of regulators has been avoided.

Setting up a centralized regulatory agency within the orbit of Congress presents, however, many inconveniences. First, would a "Super-Ente" control by Congress represent the interests of consumers (and society in general) better than existing agencies? How isolated it would be from short-term political interests? Will it be less permeable to lobbying than existing agencies? Second, and perhaps most important, why should Congress take a role that is clearly of administrative nature? And finally, the potential benefits of coordination policies within a centralized body should be weighted with the benefits of having specialized agencies. This short list of "inconveniences" is not presented here as an argument in favor of the current status quo of regulatory agencies. Rather, we think that there is a lot of room for improvements within existing agencies. Regulatory procedures are in many cases far from being developed, and therefore they lack transparency. Desirable ex-ante controls from other agencies (like *Auditoría General de la Nación*, which depends from Congress, or the *Comisión Nacional de Defensa de la Competencia*) are currently not binding or are missing from the institutional setup.

Other opinions for institutional reform have referred to the need of making consumers participate in decision-making process of regulatory agencies. Some politicians have argued that the 1994 Constitution foresees consumers' participation in regulatory agencies. Comadira (1997) says that the new Constitution does not necessarily require that consumers have a representation in the board of directors of regulatory agencies, but that some form of participation should be granted. How do consumers currently participate in agencies? The most frequent mean of participation so far has been through public hearings, which are mandatory only in gas and electricity, and has been adopted as an optional recourse in telecommunications and most recently in water and railways transportation. The degree of influence of consumers through their participation in public hearings over regulator's decision has been limited though. In other experiences of consumer involvement like ETOSS (water and sanitation), consumers formally participate through an advisory committee to the board of directors. In CNC (telecommunications),

there is a cooperation agreement for which consumer associations collaborate in the reception and follow up of telephone users complaints. Having consumers represented in the board of directors of regulatory agencies is not a common practice around the world because the agency main task is not to exclusively protect existing consumers interests but rather to consider an overall impact on society, taking into account both the needs of present consumers as well as future ones. Regulators should also balance the demands from contending interest groups.

Several recommendations have been made to strengthen the institutions that regulate private utilities. Most proposals are aimed to reshuffle power from the executive to Congress (through the control of regulatory agencies and decisions) and/or to increase participation from consumer organizations. These proposals are destined to fail since they do not recognize that the main institutional challenges are related to how to restrain government (either legislative, executive or judicial powers) from opportunism and administrative expropriation, how to avoid private opportunism associated with poor regulatory design and weak agencies, and how to provide effective and efficient mechanism for solving conflicts. Strengthening and improving existing agencies seems more adequate and realistic than creating new ones. Establishing transparent procedures that introduce more checks and balances will work in this direction, providing an umbrella of protection for both firms and society against government and private opportunism. This proposition could bring about more transaction costs (in particular in terms of time needed to approve certain decisions) but the system will gain in transparency and the costs associated to bad regulatory decisions and poor incentives will be minimized.

IV. Main Institutional Challenges in Infrastructure Regulation

The permanent institutional challenge of utilities regulation is how to balance the need for flexibility as required in dynamic environments, with the contractual rigidity needed to restrain government and firms from

opportunistic behavior. Government ought to be respectful of the initial conditions of the contract not only to avoid opportunism but also to send a sign that it respects bidding parity conditions. Otherwise, government reputation will deteriorate so much that we should expect extended *lowballing* behavior from private firms in the future. Government has often been giving signs that substantial renegotiations on contractual conditions can be achieved ex-post.

In Argentina, contracts have been used extensively in most sectors to give a framework to the relationship between government and regulated firms. By analyzing these contracts in all sectors, we can conclude that all of them contain clauses that granted some flexibility on how to adapt contractual conditions to future contingencies. Examples of these clauses abound, in particular related to price adjustments due to changes in tax legislation, environmental norms, domestic currency stability, etc. But since contracts are by definition incomplete, there were numerous contingencies that were unforeseen either in the spirit or in the writing of the contracts. As we have seen in the examples referred above, in these cases a renegotiation was inevitable (i.e. the introduction of Convertibility Law, that forced the elimination of escalation clauses from the telecommunication and interurban roads sectors).

But we should also question whether incomplete contracts due to failure of foreseeing how to deal with contingent events were the only cause for renegotiations. The answers seems to be negative, since in a certain number of cases the main reason for renegotiation was not incomplete contracts but rather poor regulatory incentives design. Poor or wrong incentives have led firms not to invest according to contractual conditions (i.e. water sector due to uncollectable bills from access charges, freight railways transportation due to lower realized demand). It has also led government to push for contractual changes, as in the case of transportation (roads, railways and waterways) whenever government subsidies was at stake or some other form of government participation in the revenue or investment function of the private firm. A major challenge for future research is how to avoid this type of hold up problems.

We have also observed that government has frequently intervened, bypassing the regulatory agency authority. In these interventions government frequently altered the initial contractual conditions because it sought to accommodate contending interests among groups. Part of these interventions could possibly be explained by the lack of effective and efficient mechanisms for solving conflicts (either the specific ones provided for in contracts, the broader appeals to courts, or both). If regulatory design and enterprise performance is to be improved, this is a subject for further research in the regulatory agenda.

References

Abdala, M.A. (1998), "Instituciones, Contratos y Regulación de Infraestructura en Argentina", CEDI document #7.

Abdala, M. and P. Spiller (2000), *Instituciones, Contratos y Regulación en Argentina*, Buenos Aires, Editorial Temas.

Artana, D., F. Navajas, and S. Urbiztondo (1999), "Regulation and Contractual Adaptation in Public Utilities. The Case of Argentina," *Technical Study*, Infrastructure and Financial Markets Division, Interamerican Development Bank.

Baylac, J. (1996), "Control y Seguimiento Legislativo sobre las Privatizaciones," *Privatizaciones* – Revista de la Auditoría General de la Nación - año 1, nº 1.

Comadira, J. (1997), "Aspectos Jurídicos de la Gestión de los Entes Reguladores," *Privatizaciones* – Revista de la Auditoría General de la Nación - año 2, nº 2.

FIEL (1999), *La Regulación de la Competencia y de los Servicios Públicos*, Buenos Aires, FIEL.

General Accounting Office (1996), "GAO/AIMD-96-55 Privatization Practices in Argentina."

GAO Report, prepared to respond a request made by deputy Scott Klug.

Gerchunoff, P. and A. Visintini (1990), "Privatizaciones en un Contexto de

Inflación e Incertidumbre," in Porto, A., edit., *Economía de las Empresas Públicas*, Buenos Aires, Editorial Tesis.

Heller, W. and M. Mc Cubbins (1997), "Political Institutions, Utility Regulation, and Economic Development in Argentina and Chile: The Case of Electricity," *Journal of Policy Reform*.

Hill, A. and M. A. Abdala (1993), "Regulation, Institutions, and Commitment. Privatization and Regulation in the Argentine Telecommunications Sector," *World Bank Policy Research Working Paper* # 1216.

Levy, B. and P. Spiller, P. (1993), "Regulations, Institutions, and Commitment in Telecommunications: A Comparative Analysis of Five Country Studies," *World Bank mimeo*.

Levy, B. and P. Spiller, (1996), *Regulations, Institutions, and Commitment: Comparative Studies in Telecommunications*, London, Cambridge University Press.

Rausch, A. (1995), "La Regulación en la Argentina: Acerca de su Diseño e Implementación," *Presentado en la Conferencia sobre Post-Privatización en América Latina*, PNUD – Gobierno Argentino.

Shaikh, H. with M.A. Abdala, C. Kappaz, P. Lauter, and A. Visintini (1996), *Argentina Privatization Program. A Review of Five Cases*, Private Sector Development Department, The World Bank.

Spiller, P. (1998), "Regulatory Commitment and Utilities' Privatization: Implications for Future Comparative Research,", in Tommasi, M. y Saleigh S. ed., *La Nueva Economía Política: Racionalidad e Instituciones*, Buenos Aires, EUDEBA.

Urbiztondo, S., D. Artana, and F. Navajas (1997), "La Autonomía de los Entes Reguladores Argentinos: Agua y Cloacas, Gas Natural, Energía Eléctrica y Telecomunicaciones," *XXXII Annual Meeting of Asociación Argentina de Economía Política*, Bahía Blanca.

Vispo, A. (1999), *Los Entes de Regulación. Problemas de Diseño y Contexto. Aportes para un Urgente Debate en la Argentina*, Buenos Aires, Grupo Editorial Norma.

Williamson, O. (1985), *The Economic Institutions of Capitalism*, New York, Free Press.

World Bank (1993), *Argentina's Privatization Program. Experience, Issues, and Lessons*, Washington, DC.