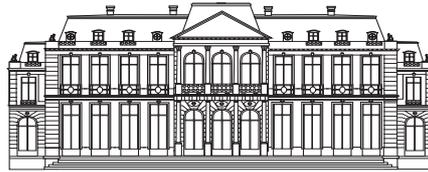


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Regulation of Water Distribution in Argentina

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REGULATION, COMPETITION AND PRIVATISATION
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REGULATION OF WATER DISTRIBUTION IN ARGENTINA

MARIANA CONTE GRAND**

Summary

In 1989, the Argentine government began a very deep reform of the country's economic system. Among the biggest changes, there was a wave of privatisations, accompanied by an accelerated transfer of functions from the national government to the provinces. The first ones included the telephone company and the national flag airline and were conducted with the goal of financing the stabilisation program and gaining national and international credibility for the government, rather than increasing efficiency. A second privatisation wave took place in 1992, when the public enterprises that provided electricity, gas, petroleum and water were sold but that process was characterised by a greater concern towards efficiency. The latest transfers of public utilities to the private sector were the airports and the national post office, and happened in 1997.

Among the firms privatised by the Argentine government, there was the water and sewerage supplier for the Buenos Aires Metropolitan Area (Obras Sanitarias de la Nacion, or OSN). It was also a trigger for other privatisations, since many provinces followed the national government's example and sold their own water companies. Water and sewerage is the infrastructure sector where Argentina is in the worst relative position. The coverage of sewerage services is low compared to other countries with similar levels of GDP per capita, and even lower for water services. The main difference between the privatisation of water and sewerage services and most of the others was that, while in other sectors the government directly sold the public firms, in this case the ownership of the company's assets was not transferred but given in concession for a fixed term of 30 years, and was awarded to the firm who offered the lowest rate level without any disbursement.

Focusing on the Buenos Aires Metropolitan Area's concession, the regulatory tools for price regulation consist of a hybrid of price-cap and cost-plus systems. On one side, water and sewerage prices are individually capped, but whenever a cost index is greater than 7%, the firm can file an "extraordinary revision" to be allowed to increase tariffs beyond the cap ("passthrough"). Caps are based on a complex tariff structure determined by house and land values giving the firm no incentives to improve the quality of service and the clients do not have any incentive to use services rationally. The concession contract includes other regulatory instruments (goals for coverage and quality) and a specified level of investment. Related to that, there are also "periodic revisions" (every 5 years) to examine the attainment of quality and

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REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

coverage goals, the fulfilment of investment plans and the financial viability of those plans according to the rates. In terms of institutions, a special agency was created (ETOSS). ETOSS has six members that are chosen by political authorities, without parliamentary approval and is financed from a 2.7% tax on the firm's revenues. Some authors believe that the ETOSS has been captured in some way. But while the outcome of the latest renegotiations process cannot be said to have been against the regulated firm, it took place without any intervention by ETOSS. The changing instances that followed the concession of the water and sewerage services in Argentina have clearly demonstrated that public utility regulation is an issue that may be subject to considerable uncertainty when renegotiations and contract revisions occur. The privatisation of OSN was probably unique in the sense that it was based on the idea of competition for monopoly rights, and its philosophy was that such competition was able to drive prices down to competitive levels. That idea proved to be right in the very beginning (since water rates immediately dropped by 27%), but it also created an environment where productive efficiency was not encouraged and almost everything was subject to renegotiation whenever the regulated firm was interested in it. Conclusions of this paper propose some changes which may guide the concession towards efficiency (a simpler rate system, quality and coverage goals only instead of investment level goals, an automatic rate adjustment mechanism based on the evolution of some simple index).

I. Introduction

The aim of this paper is to analyse the outcome of the privatisation process of water and sewerage services in Argentina, and to propose a few recommendations directed towards its improvement. Its first section deals with the context within which privatisation took place, and compares it with other privatisations in other sectors of the economy. The next section describes the privatisation process in several provinces of the country, and is followed by a more detailed analysis of the regulatory framework and institutions designed for the concession of the firm that provides water and sewerage in the Buenos Aires Metropolitan Area. This is considered to be the largest water company in Latin America.

II. Regulation, competition and privatisation in Argentina

In 1989, the Argentine government began a very deep reform of the country's economic system. Among the biggest changes, there was a wave of privatisations, accompanied by an accelerated transfer of functions from the national government to the provinces. In fact, in the five years from 1990 to 1994, cumulative sales from privatisations amounted to 9% of the GDP (Abdala, 1996).

Before the first wave of privatisations, the Argentine public utilities were largely state-owned (table 1). At the beginning of the privatisation era, public enterprises were characterised by their inadequate investment and maintenance, overstaffing, shortage of qualified staff, and their revenues had been used by successive governments as a source of funds to finance increasing fiscal deficits.

It was within this context and after several episodes of hyperinflation, that the first important privatisations occurred at the end of 1990. These included privatisation of the telephone company (Entel) and the national flag airline (Aerolineas Argentinas). In the first case, the firm was divided and sold as two regional monopolies, granting the operators exclusivity for 7 years with an option to 3 more years. In the second case, a monopoly was granted for 5 years in domestic flights. The reason for those decisions was that those first two privatisations were conducted with the goal of financing the stabilisation program and gaining national and international credibility for the government, rather than increasing efficiency (see Gerchunoff, 1992).

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

Table 1: Public Firms In Argentina At The End Of The 1980s

Sector	National government	Provincial governments
Petroleum	Around 50% of the market	Did not participate
Natural gas	Monopoly in transportation and distribution	Did not participate
Water and sewerage	Monopoly in the Buenos Aires Metropolitan Area	Monopolies by provinces, municipalities or cooperatives
Electricity	Most transportation and generation, distribution in the Buenos Aires Metropolitan Area	Monopoly in distribution and some participation in generation
Telecommunications	Monopoly almost everywhere	Did not participate
Banking	Several banks	One or two banks per province. Municipal banks in some cases.
Railways	Monopoly everywhere	Did not participate
Airlines	International flights and majority of domestic flights	Some small firms
Harbours	The main facilities	Some small facilities
Others	Petrochemicals, steel, TV, some radio stations, etc	Participation in several activities

Source: Artana, Navajas and Urbiztondo (1997).

A second privatisation wave took place in 1992, when the public enterprises that provided electricity, gas, petroleum and water were sold. This process was characterised by a greater concern for efficiency, since competition was introduced in some areas and new regulatory agencies were created prior to divestiture. The latest transfers of public utilities to the private sector took place in 1997. They included sale of airports and the national post office.

III. Privatisation and Regulation of water distribution in Argentina

Among the firms privatised by the Argentine government in 1992, there was the water and sewerage supplier for the Buenos Aires Metropolitan Area (Obras Sanitarias de la Nación, or OSN). From 1870 to 1980, OSN's area of influence was the whole country, but after 1980, by decree 258/80, its radius of action was limited to the city of Buenos Aires plus 13 districts of the nearby Province of Buenos Aires. Water coverage had expanded until the 70's, but that expansion ended sharply in the 80's. The reason for that change can be attributed to the reduction in OSN's revenues (due to the erosion of the prices

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

charged), the lack of qualified personnel, and a low level of investment, which put the company in a situation that was probably among the worst of national publicly-owned firms.

Table 2: Privatisations Of Water Distribution In Argentina

Area	Year	Private firm
Metropolitan Buenos Aires Area	1992	Aguas Argentinas Majority: Lyonnaise des Eaux (France)
Province of Cordoba	1997	Aguas Cordobesas Majority: Lyonnaise des Eaux (France)
Province of Corrientes	1991	Aguas Correntinas Majority: Sideco Americana & Ingeniería Tauro (Arg.) Minority: Thames Water (UK)
Province of Salta	1998	Aguas de Salta and Necon
Province of Santa Fe	1995	Aguas de Santa Fe Majority: Lyonnaise des Eaux (France)
Province of Tucuman	1995*	Aguas del Aconquija Majority: Générale des Eaux (France)

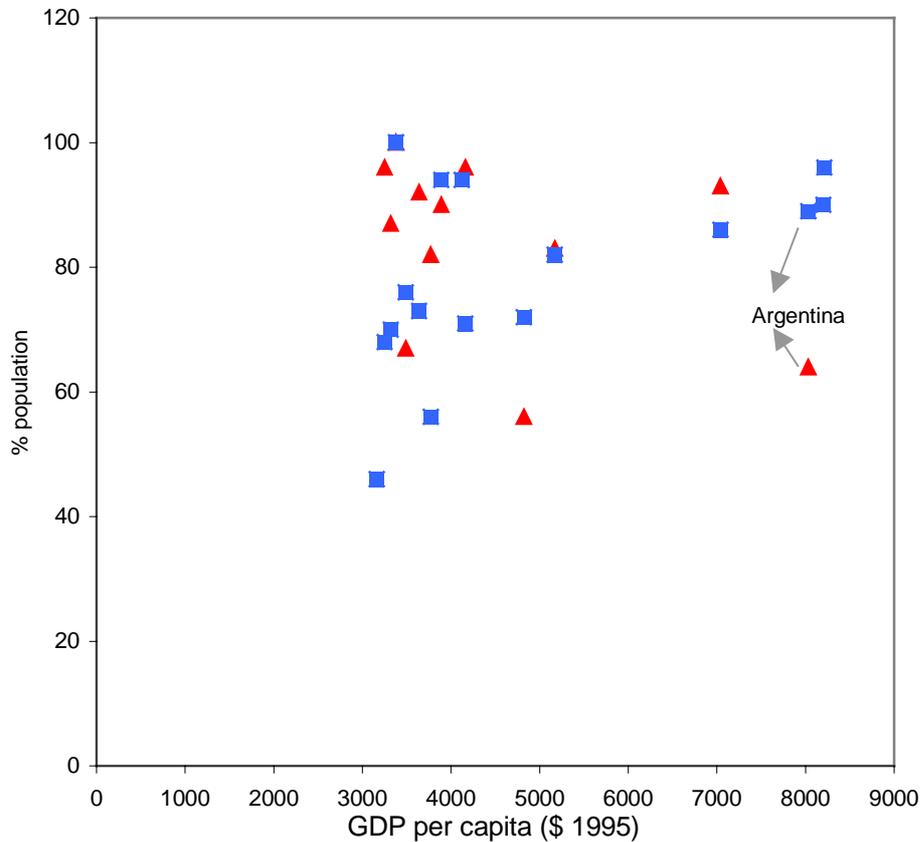
Source: ECLAC (1998).

Note: * This privatisation has had several problems and the contract was terminated in 1997.

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

Graph 1: Water and Sewage Provision
(comparison with countries similar income levels than Argentina)



Fuente: World Development Report (WB, 1997)

Note: The triangles refer to water, the squares to sewage.

The transfer of OSN's operation to the private sector was the largest privatisation of a water company in Latin America. It was also a trigger for other privatisations, since many provinces followed the national government's example and sold their own water companies. It is estimated that nowadays 50% of the Argentine population is served by privatised firms (ECLAC, 1998). In Cordoba, Corrientes, Salta, Santa Fe and Tucuman the privatisation process is already complete, while in the Provinces of Buenos Aires and Mendoza it is still under way (table 2).

The coverage of sewerage services in Argentina is low compared to other countries with similar levels of GDP per capita, but the coverage of water services is even lower (graph 1). Only 64% of the population has access to potable water, while 89% of all the inhabitants has *some kind* of sewerage (World Bank,

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

1997)¹. In fact, water and sewerage is the infrastructure sector where Argentina is in the worst relative position.

IV. Regulation of water distribution in the Buenos Aires Metropolitan Area

The main difference between the privatisation of the Buenos Aires water and sewerage services and most of the other Argentine privatisations was that, while in other sectors the government sold the public firms, in this case the ownership of the company's assets was not transferred but given in concession for a fixed term of 30 years. The bidding process was based on awarding the firm to the bidder who proposed the lowest rate level. No disbursement was required, neither at the moment of the concession nor later.

Water production for the Buenos Aires Metropolitan Area is relatively cheap because it comes from the withdrawal of water from the River Plate, which is treated at two plants (San Martin and Belgrano) before being supplied. Sewerage is discharged on the same river, and only 5% of it receives any kind of treatment (Abdala 1996)². The consumption of water in Buenos Aires is considered excessive by international standards (600 litres per person per day, compared to a standard of 400), partly because of technical losses and partly due to a rate structure which lacks incentives for rational use.

The winners of the bidding process for the concession of OSN were Lyonnaise des Eaux, Aguas de Barcelona and Anglian Water, whose joint venture adopted the name of "Aguas Argentinas" (Argentine Waters). The other two bidders were joint ventures headed by Thames Water and Northwest Water International. The concession began to operate in May, 1993.

i. The regulatory tools

In Argentina the regulatory tools used for regulation of privatised companies vary considerably across sectors (table 3). In the case of water and sewerage, price regulation consists of a hybrid of price-cap and cost-plus systems. On one side, water and sewerage prices are individually capped, but whenever a cost index is greater than 7%, the firm can file an "extraordinary revision" to be allowed to increase tariffs beyond the cap ("passthrough").

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

Table 3: Tools For Price Regulation In Argentina

Sector	Regulatory tools
Petroleum	Free prices
Natural gas (production)	Free prices
Natural gas (transportation and distribution)	Price cap + passthrough
Water and sewerage	Hybrid price cap
Electricity (generation)	Free prices
Electricity (transmission and distribution)	Price cap + passthrough
Telecommunications	Price cap
Airlines	Free prices
Harbour	Free prices

Source: Artana, Navajas and Urbiztondo (1997).

The system of price caps for water and sewerage provided by Aguas Argentinas works as follows:

For unmetered customers, the two-month *flat rate* is determined by:

$$\max \left\{ BBT_{ij} = GT_{ij} \cdot K \cdot Z \cdot (SC \cdot E + \frac{ST}{10}), BBT_{ij}^{\min} \right\} ;$$

where i is the type of service (e.g., water only, sewerage only or both), j is the customer's category (residential, non-residential or vacant land), GT is a number which represents a basic rate, K is a number determined in the privatisation bidding process (which ended up being equal to 0.731), Z is a zone factor (which depends on the location of the customer, and goes from 0.8 to 3.5), SC is the total area built (in square meters), ST is the total property area, E is a coefficient which adjusts for quality and age of construction (and goes from 0.6 to 2.6) and BBT^{\min} is equal to \$2.924 per service for residential users and \$5.848 for non-residential users. In case that BBT is lower than BBT^{\min} , the latter is charged.

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

For metered customers (only around 8% of the total), the two-month *three-part rate* is determined by³:

$$MT_{ij} = 0.5 \cdot BBT_{ij} + P_i \cdot K \cdot (C - \bar{A})$$

where P_i is a regulated price (\$0.33/m³ if the customer only receives water and \$0.66/m³ if he receives both water and sewerage), C is the consumption of water, and A are the first 30 m³ consumed (which are covered by the fixed part of the rate).

In addition, the concession contract includes other regulatory instruments. There are goals for coverage and quality (environmental quality and minimum pressure goals) and a specified level of investment (divided in different percentages for water treatment, water network expansion, etc). Related to that, there are also “periodic revisions” (every 5 years) to consider the attainment of quality and coverage goals, the fulfilment of investment plans and the financial viability of those plans according to the rates. At those points in time, relatively large changes can be introduced and an exhaustive revision of the firm’s situation can occur, with the implicit idea of following a rate-of-return regulation.

In summary, in the case of water and sewerage, rates are set in a way that the firm does not have incentives to improve the quality of service, because its revenue depends mainly on the value of the land and the housing. The problem with this approach arises from the fact that rates were frozen in their structure and level of 1992, instead of changing the system towards one with a higher degree of efficiency and incentive compatibility considerations⁴.

ii. The regulatory agency

The ETOSS (three-part Agency for Water and Sewerage Works and Services) is the agency created by the concession decree to regulate Aguas Argentinas, as an autonomous institution that would monitor the contract’s fulfilment. Other similar agencies were created for other privatised companies (table 4). In this case, however, the Department of Natural Resources and the Environment was assigned a parallel regulatory task, related to the control of environmental goals.

REGULATION, COMPETITION AND PRIVATISATION
Helsinki, 17 - 18 September 1998

Table 4: Regulatory Agencies Created After Privatisations In Argentina

Sector	Agency
Natural gas	ENARGAS (National Regulatory Agency for Gas)
Water and sewerage	ETOSS (Three-part Agency for Water and Sewerage Works and Services)
Electricity	ENRE (National Regulatory Agency for Electricity)
Telecommunications and postal services	CNC (National Communications Commission)

Source: Artana, Navajas and Urbiztondo (1997).

The main institutional characteristics of the ETOSS are:

A board of directors constituted by 6 members chosen by political authorities, without parliamentary approval (2 from the Province of Buenos Aires, 2 from the City of Buenos Aires and 2 from the national government).

Financing that comes from a 2.7% tax on Aguas Argentinas' revenues, made explicit in the water bill. ETOSS's funding does not include the fines that it imposes on the firm, since those have to be returned to the consumers through lower prices.

Some authors believe that the ETOSS has been captured in some way by Aguas Argentinas (see, for example, Artana, Navajas and Urbiztondo, 1997). Their main argument is that it authorised a price for meters that goes from \$31 to \$112, while at Corrientes (a comparable concession) prices range from \$15 to \$30. They also point out that the ETOSS decided that, if a customer requests a revision of its meter, he has to pay for the inspection costs if the firm concludes that it works well. The ETOSS also authorised in 1994 an increase in rates of 13.5%, supposedly due to increasing costs for the firm. However, those costs did not correspond to the required changes of the cost index of more than 7% (in order to trigger "extraordinary revisions"), but were due to the anticipated fulfilment of investment goals.

iii. Renegotiation of the concession contract

Although there was an extraordinary revision in 1994, the main renegotiation of concession's conditions for Aguas Argentinas took place in 1997. At the beginning of that year, decree 149/97 was issued for a reformulation of the firm's activity in the next 180 days. There were several reasons for the renegotiation, but the ones cited by the firm and the regulators were lower than expected⁵ revenues, non-fulfilment of the investment plan, and the growing misunderstandings between the firm and the ETOSS.

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

In fact, one can say that the main problems of the regulatory system prior to the 1997 contract renegotiations were deeper than those noted above. First of all, the system of rate setting was complex and based on zone and housing values that in most cases had no relationship with the quantity of water consumed. Besides, the control of the investment plans focused on the level of expenditure instead of paying attention to the fulfilment of quality and coverage goals. There was also a lack of a flexible mechanism to incorporate adjustments to the rates when this was required by the macroeconomic context, together with a lack of transparency in the other adjustment mechanisms (which required that the regulator collect a large amount of information).

The renegotiations followed different steps, but the institution created to regulate Aguas Argentinas (ETOSS) was never invited to participate in this process. Talks were between Aguas Argentinas, the Ministry of the Economy and the Department of Natural Resources. The changes agreed to by the three parties (as described in decree 1167/97) were the following:

The adoption of a new “Plan of Integral Sanitation”, which replaced the one committed to in the original contract.

The creation of a new component for the rates called “SUMA” or “Servicio Universal y Mejora Ambiental” (Universal Service and Environmental Improvement). SUMA was established at a maximum of \$3 per service, but at the time of the decree only SU was determined at \$2.01 and MA was left undefined. SU was put in place to finance new connections (but was uniformly charged to all the users) and MA’s goal was to cover the difference between the original investment plan and the new plan agreed by this decree.

The inclusion of a new connection charge called “CIS” (Cargo por Incorporación al Servicio). It was fixed by Resolution 27/98 at a bi-monthly level of \$4 for a five year period, beginning at the moment when the service was made available.

A waiver for the fines that corresponded to the third year of operations, allegedly offset by additional investments of Aguas Argentinas in the Buenos Aires downtown area of Puerto Madero.

Few days after the decree was signed, appeals were made by some consumers’ associations and also by the National Ombudsman Jorge Luis Maiorano (File No. 1.889/98), who called for a suspension of the new regulatory framework. He basically argued that there could not be any new regulation without the ETOSS’s participation⁶, that the connection service was made payable twice (though CIS and SU), and that the creation of MA had not been seriously evaluated. The ombudsman’s presentation also pointed out that, since SUMA was constant for all customers, it implied a relatively much higher increase in the bills of the poorest users, and therefore did not fulfil the redistributive objectives of the decree.

This appeal was considered legitimate by the judicial power on two grounds. Although MA was accepted as a counterpart for a presumably new service to be provided by the firm, SU was considered to be a tax. The judge’s ruling also argued that taxes could only be set by the Congress, and so the new rates were suspended on March 12, 1998. (Page 75/78, No.44, “Sentencias Interlocutorias” of Judge Rossi).

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

After those events, Aguas Argentinas filed for a new “extraordinary revision”, claiming that its costs had increased by 11.7%. However, the ETOSS only authorised an increase of 1.67%. Its decision was appealed by the firm to the Secretary of Natural Resources, who had been designated as the main authority on water regulation issues. This secretary is said to be about to authorise a rate increase of 3% over the figure already approved by the ETOSS.

V. Conclusions

The outcomes of the concession of the water and sewerage services in Argentina have clearly shown that public utility concessions may be subject to considerable uncertainty when renegotiations and contract revisions occur. The privatisation of OSN was probably unique in the sense that it was based on the idea of competition for monopoly rights, and its philosophy was that such competition was able to drive prices down to competitive levels. That idea proved to be right in the very beginning (since water rates immediately dropped by 27%), but it also created an environment where productive efficiency was not encouraged and almost everything became subject to renegotiations whenever Aguas Argentinas was interested in it.

Taking that environment as given, it is nevertheless possible to introduce some changes that would help to develop more stable and predictable outcomes, so that the firm abandons the use of renegotiation and bargaining as its main source of profits and focuses on efficiency and quality of service instead. Those changes could consist of⁷:

a. A simpler rate system

The idea is to establish a new rate framework that pursues three goals: rational use of water, balance between demand and supply of water, and financial viability of the concession. The new rate framework should be more transparent, and should seek to reduce the number of items that are included in the fixed part of the rate. The idea of financing new connections through a general charge is not to be discarded, but this should be defined as an “ad-valorem” concept rather than a lump-sum tax.

b. Quality and coverage goals instead of investment level goals.

Quality and coverage have to be monitored with objective and easily measurable indicators, leaving no doubt for the regulator who monitors them. It is also very important to regulate the “goals” and not the “means to reach those goals” (as is the case when the amounts that the firm must invest are established).

c. An automatic rate adjustment mechanism based on the evolution of some simple index.

Ordinary revisions are a good way to reconsider important regulation parameters and it is reasonable to have a broad discussion about them every 5 years. The case for extraordinary revisions is different, since they imply an exhaustive review of costs and revenues that create informational problems for the regulator. An automatic price index, built to capture cost increases, should instead be automatically applied to protect the firm from uncertainty about its input prices.

REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

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REGULATION, COMPETITION AND PRIVATISATION

Helsinki, 17 - 18 September 1998

NOTES

- ¹ Around 40% of the population has sewerage connections. The rest makes their own perforations.
- ² In the original contract, the firm was supposed to build a major plant for primary treatment and several complementary plants, so that by the end of the concession (year 2023) all discharges receive treatment before returning to the river.
- ³ Consumers can choose to be metered, and in that case they pay for the meter. If the firm is the one that decides to meter, then it pays for it. The customer can change his mind if his bill increases by more than 20%. In that case, if Aguas Argentinas wants to go on with the metering, it has to refund the meter to the customer. In practice, few customers requested this service, and most metering was imposed by Aguas Argentinas.
- ⁴ It is not obvious, however, that a greater development of metering will be the most efficient solution for a city like Buenos Aires. This is because water is plentiful in the River Plate and water meters are costly. Besides, the concession decree (Decree 999/92, article 43, section 3) explicitly allows for cross-subsidisation among customers as a way to deal with equity issues, although it is by no means clear that the present rate structure is helpful in that respect.
- ⁵ Until the renegotiation, Aguas Argentinas had the right to charge \$600 for each new water connection and \$1,000 for each new sewerage connection. According to the firm, these charges generated a credit of around \$60 millions that became uncollectable, because the majority of the new customers were low income people who could not afford to pay those figures.
- ⁶ The ombudsman went even further, by explaining that the ETOSS was excluded from the renegotiation process because it was not favourable to the firm. During 1996 the ETOSS had been applying fines to Aguas Argentinas for not fulfilling its contractual commitments (see, for example, Resolution 141/96). This attitude seems to be in sharp contrast to the theory of regulatory capture supported by Artana, Navajas and Urbiztondo (1997).
- ⁷ The modifications suggested are strongly based on the proposals contained in Coloma and Conte Grand (1997).