

## *Chapter 6*

# **Efficiency, Equity and Liberalisation of Water Services in Buenos Aires, Argentina**

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*This chapter traces Argentina's decision to privatise its water and sanitation services and describes in detail implementation of the privatisation scheme, including the many problems encountered with respect to the contract with the provider and regulatory issues as well as those attributable to the financial crisis, and the effects on access to water and sanitation services for the poor. Ultimately, the contract was rescinded. The experience offers useful lessons on pitfalls to be avoided.*

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## The context of privatisation

From 1912 to the 1980s, the National Water and Sewerage Corporation (*Obras Sanitarias de la Nación*) provided water services to Buenos Aires. Central authorities enacted regulations, designed rates and planned the expansion of service. Structural investment had the highest priority; the national treasury funded the system and guaranteed financing. Efficiency and economic and financial considerations were disregarded, and the setting of rates and tariffs was politically based (FIEL, 1999a, pp. 535-537). However, a policy of cross-subsidies made possible expansion to the less developed and populated areas of the country (Azipazu and Forcinito, 2003, p. 7).

The system broke down as a result of recurrent fiscal crises at the national level, which constrained transfers of funds. From 1976 to 1982 Argentina maintained an artificial exchange rate, subsidised by the government with significant shares of national funds. Resources were reduced for other activities and the National Water and Sewerage Corporation suffered. Expansion was stopped, and maintenance and rehabilitation deteriorated. Water and sanitation services are an essential commodity but are especially vulnerable to financial shortages. They also constitute a natural monopoly and are the most capital-intensive of utilities, with a ratio of required capital per dollar of annual revenue ranging from 6:1 to 10:1 (Phillips, 1993, p. 15).

In 1982, a debt crisis occurred as a result of the financing of the artificial rate of exchange, and public financing became even more limited. The national water system was transferred to the provinces, and 161 service areas were transferred. At first, the provinces maintained the original national philosophy, but no alternatives to the previous national subsidies were provided (Azipazu et Forcinito, 2003, p. 7). Water and sewerage was not a priority either for the national government or for the provinces and the system collapsed. Between 1970 and 1979 investment in the sector represented 0.31% of GDP. It decreased to 0.15% between 1980-89 and to 0.07% between 1990-91 (E. Lentini, personal communication). The state-owned utility lacked funds, owing to inefficient operation and declining real low water tariffs. Investment did not keep pace with population growth, and was not even enough to maintain existing assets. The deterioration of the system caused water shortages (Alcazar *et al.*, 2000, p. 4). There was no independent regulator capable of monitoring the state company and its practices and there were no regulatory standards. Quality and coverage, as well as policies, planning and regulation were affected.

In Buenos Aires it was clear that the state company was unable to meet investment and maintenance needs. In addition to the problems created by the debt crisis, sector-specific problems related to the vices and practices of an overmanned public company with strong, highly politicised labour unions and a short-term view of the social aspects of public utility water services.

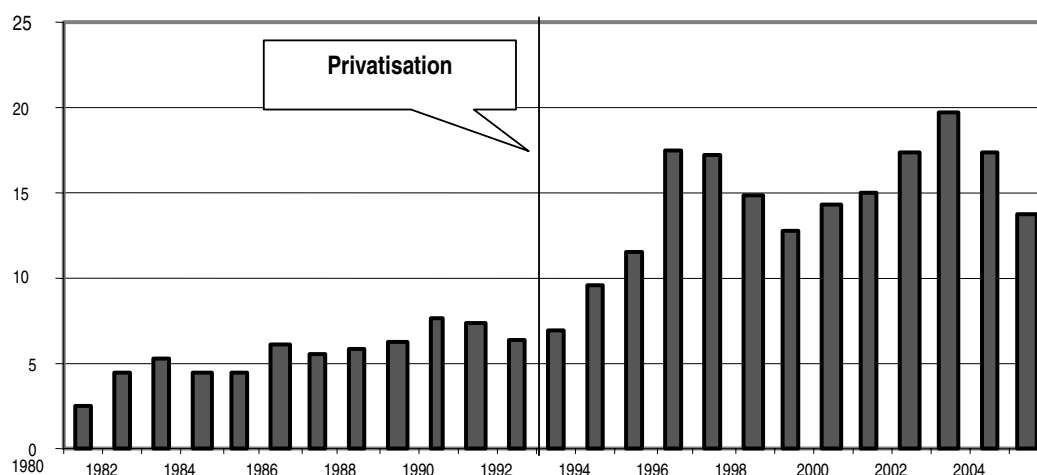
At the time of the concession, 70% of the population of the Metropolitan Area (MA) had a water supply, and just 58% were connected to the sewerage system. Most of those unconnected lived in the poorer areas, where the percentages were 55% and 36%, respectively. The shortfall in the poorer areas had been rising by 5-6% per year, and involved 5.6 million people. On the other hand, city residents were almost all connected. The state company was unable to maintain the existing assets. Water tariffs were low and water that was unaccounted for reached 45%. Consumers had no incentive to conserve or to pay, since they could not be cut off if they did not pay. Rivers and groundwater were

polluted by septic tanks, cesspools and direct discharge of untreated sewage and industrial effluent (Alcazar *et al.*, 2000, pp. 3-7).

The system has abundant and cheap raw water, and transport is cheap as well (Alcazar *et al.*, 2000, p. 3). It was deemed that favourable physical conditions, the professional type of management afforded by the private sector (FIEL, 1999, p. 538), and undertaking the postponed investments would improve service conditions. The concession was therefore launched with a sense of urgency (Alcazar *et al.*, 2000, p. 13). It was granted by a contract containing regulatory principles to a consortium of foreign and national private companies. The urgency of the situation affected the outcome.

At the time of privatisation for Buenos Aires (end 1992, beginning 1993) foreign currencies were kept artificially low in order to preserve currency stability (much as in 1976-82 and with even more disastrous results). The state intervened heavily in the currency market, borrowing and buying foreign currency and selling it in the local market. Debt and unemployment went up (Figure 6.1), and local production and fiscal revenue came down.

**Figure 6.1. Urban unemployment during the period of the concession**



Source: BADEINSO, ECLAC, 2005.

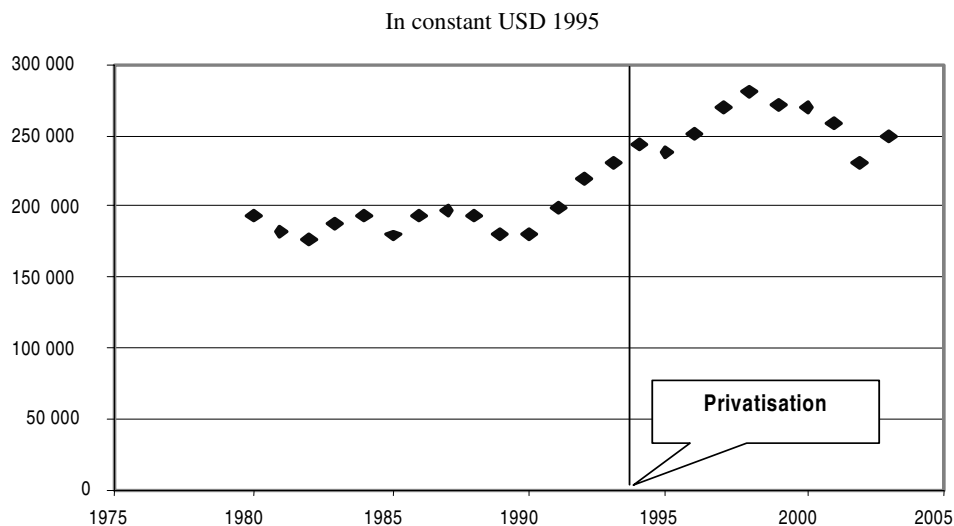
By 2001, the year of the crisis, the external debt was unmanageable (Table 6.1 and Figure 6.2). Unemployment was rampant, and shops were looted by hungry mobs (Figures 6.3-6.5).

**Table 6.1. External debt as a percentage of GDP during the period of the concession**

	Privatisation				Argentina's national government gross public debt											
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 (p)	
Total	-	-	-	29.4	31.3	33.8	35.7	34.5	37.6	43.0	45.0	53.7	145.9	138.2	126.3	
Internal	-	-	-	-	-	-	-	8.9	9.8	13.1	15.2	20.9	54.2	60.0	52.0	
External	-	-	-	-	-	-	-	25.6	27.8	29.9	29.8	32.9	91.6	78.2	74.3	

Source: Secretariats of Budget and Financing. Ministry of Economics, Argentina (Preliminary Report. Last Data of June 2004).

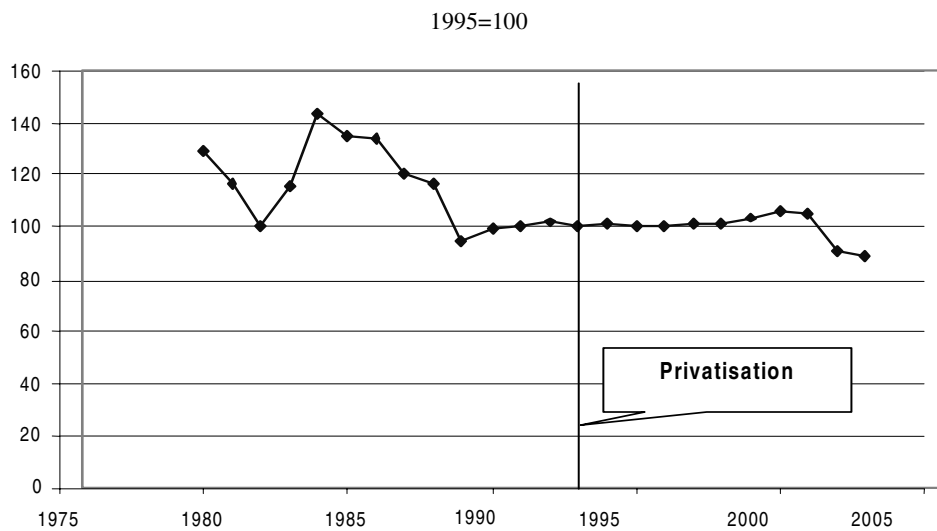
**Figure 6.2. The evolution of Argentina’s GDP during the period of the concession**



GDP: Values deflated by inflation index (1995=100).

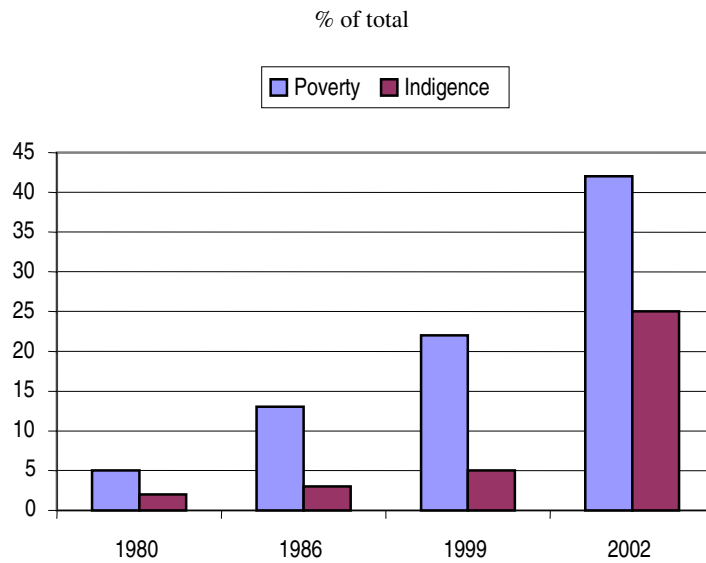
Source: Statistical Year Book. ECLAC 2004.

**Figure 6.3. Average annual salary during the period of the concession**



Note. Adjusted for inflation. Salary deflated by inflation index (1995=100).

Source: BADEINSO, ECLAC, 2005.

**Figure 6.4. Poverty and indigence<sup>1</sup> during the period of the concession**

1. Indigents cannot afford to buy food. The poor can afford food, but can not fully satisfy their basic needs for clothing, food and recreation.

Source: BADEINSO–ECLAC 2005.

**Figure 6.5. Gini index during the period of the concession**

The Gini index is a measure of inequality of distribution, where 0 corresponds to perfect equality, and 1 corresponds to perfect inequality. Its application in the context of a paper on water supply and sanitation is helpful to illustrate the increases in inequality in Argentina at the time of the concession, therefore contributing to the understanding of lack of affordability by the poor.

Source: BADEINSO–ECLAC 2005.

The years of privatisation were a period of trust in private markets and distrust of governments. It was assumed that market competition, rate regulation with price cap mechanisms, light regulation and information substitutes would make up for the information asymmetries and for market, state and system failures:

- Distrust of government resulted in regulatory systems with weak information requirements (for examples, see Sappington, 1986).
- Overoptimistic assumptions, *e.g.* based on the idea that market contestability reduces the need for regulation, also affected regulatory quality.<sup>1</sup>
- It was assumed that, if competition is limited in the market, competition for the market creates some sort of substitute competition, theoretically reducing the need for regulation and information. Nonetheless, the exercise was fraught with difficulties.<sup>2</sup>
- In many cases, privatisation laws and regulations have applied theoretical price cap systems to regulate the earnings of providers. In practice, the system suffered from several problems, including the fact that a good deal of information was required in order to establish cost reduction potentials.<sup>3</sup>

The concession has been rescinded. Both sides are unhappy. The company requested that rates be adjusted to reflect devaluation (*La Nación*, 2005). The government claims that investments were not made as promised. Better understanding of the impact of the macroeconomic context and improved regulation and practices would have saved both parties a great deal of sorrow.

### Implementation of the reform and universal service

In Buenos Aires, there was no liberalisation in the sense of ensuring competition. A private foreign monopolist provided the service. The provider won a bid based on an offer of a 26.9% tariff reduction (tariffs had increased by 62% prior to privatisation, and a value-added tax of 18% had also been added) associated with an expansion programme. New connections were to be paid for by the concessionaire. Yet, the high cost of infrastructure, relative to income, deterred prospective low-income new users.

The concession left an opaque and inefficient tariff system in place (Alcazar *et al.*, 2000, p. 21). Bills are issued every two months and most consumers were and are charged

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1. Theoretically, efficient pricing and production can be forced on a supplier as much by the threat of competition as by actual competition. However, while the theory has gained considerable currency as an abstract construct: “its impact on regulatory policies in relation to natural monopolies has been much less significant, simply because the assumptions of perfect contestability on which it is based, notably that the entrant can leave the market, without costs, when it is no longer profitable to remain, are rarely encountered in practice” (Ogus, 1994, p. 33).
  2. In the case of Buenos Aires it is argued that the bidding process encouraged the companies to offer the highest possible rate of discount, to be renegotiated later, if necessary. Furthermore, once the concession is awarded it becomes a monopoly enjoying an almost total advantage over potential competitors. The small number of actual bidders participating in the adjudication contest reinforced the inherently monopolistic nature of the concession process (Ferro, 1999). This is consonant with the data on limited number of bidders in most water supply and sanitation biddings provided by Vivien Foster at the “Primer Encuentro de Entes Reguladores de las Americas”, Cartagena de Indias, Colombia, October, 2001.
  3. In its initial British version it resulted in weak accountability and lack of procedural safeguards. This problem, the reliance of regulators on information provided by firms, and the history of bargaining between them all suggest that the system may not be as resistant to the influence of private interests as its proponents hoped (Ogus, 1994, p. 312/313).

a flat rate. There are two tariffs: metered and non-metered. Non-metered tariffs pay a flat rate. Metered rates consist of a relatively high fixed charge and a variable charge based on consumed cubic metres (m<sup>3</sup>), starting at 20 m<sup>3</sup>. Only 17% of users (36% of total billing) are metered. Both the flat rate of non-metered tariffs and the fixed charge of metered tariffs (50% of the flat rate) are based on built surface, age and quality of construction, location and 10% of total land surface. Therefore, most users pay a fixed charge that is independent of consumption, although individual billing varies according to the factors mentioned. The system contains cross-subsidies from metered to non-metered users and from non-residential to residential users. According to World Bank reports, this was an incentive to serve the areas able to pay more first. Flat rates did not encourage savings and expanded coverage in high-paying areas could have induced the company to slow expansion to other areas if returns did not justify the investment. According to some researchers, the option to meter consumption gave the company an incentive to meter poor households (because of the peculiarities of the local rates, it is profitable for the company to meter when the variable charge is more than half of the fixed rate) (Abdala, 1996). Returns in new poor areas did not in fact justify investment, since consumers there could not pay the infrastructure charge. It is also charged that the hybrid price cap system of the concession reduced incentives to keep costs down by allowing adjustments between periods, if the cumulative index of specific costs escalated beyond 7% (Alcazar *et al.*, 2000, pp. 27-29). In 2005, bills included a charge for universal service and environmental improvement (SUMA), which amounted to 27% of every average bill under the concession. Synthetically:

$$AB = BTT + (SUMA + CMC)$$

(in ARS)

- AB: Amount to be billed to residential unmetered users
- BTT: Basic two-months tariff
- SUMA: Charge for universal service and environmental improvement
- CMC: Maintenance and connection renewal charges

BTT is calculated as follows:

$$BTT = K * Z * TG * (SC * E + ST / 10)$$

- K: Adjustment factor
- Z: Zone index (0.9-3.5)
- TG: General tariff
- SC: Covered surface (building surface)
- E: Construction index (0.64-3.88)
- ST: Land surface (plot extension)

Source: ETOSS-Gerencia de Economía del Sector (Regulatory Agency-Sector Economics Manager).

The original contract provided for sequential investments. Water coverage was 70% and was supposed to reach 90% by 2013 and 100% by 2023. Sewerage was supposed to increase to 73% by 2013 and 90% by 2023, from 57% at the beginning of the concession.

However, the contract did not provide incentives to reach the goals. Tariffs were globally estimated at mean long-term cost. Thus, tariffs were supposed to generate

enough demand-related income to recover, within 30 years, operational costs, investment costs and the costs of capital outlays to make the investments. The estimates discounted in advance revenues required to pay for total concession costs. In practice this is tantamount to an incentive to delay investment, since once the company has collected the tariffs, it makes a profit by delaying investment. In the absence of adequate supervision and control, there was a perverse incentive not to comply with the investment plan. If penalties for non-compliance are lower than its benefits, a company has no incentive to invest. Chile has a different system: wastewater rates, for example, cannot be collected until treatment plants are operative. Rate increases are allowed only after investments are made and works and facilities are operational.

In 2003 Buenos Aires addressed the problem by implementing a trust fund that was created in 2001. The trust consists of funds accruing during the first five years after the rate revision, deposited into a bank. The regulator and the concessionaire agree on the programme of work, and the bank pays only after approval by the regulator.

There were other disincentives: *i)* rates paid in poorer areas were based on lower indexes than rates paid in other areas, since they were based not on consumption but on property valuation; *ii)* supply to such areas represents a higher investment in infrastructure, as well as relatively higher costs in transport, distribution and collection; *iii)* poorer areas represent higher commercial and collection risks; *iv)* the cost of connection discouraged users, who were accustomed to discharge into septic tanks; *v)* infrastructure charges were too high to be paid by the poorest sectors of the population; *vi)* the problems associated with a non-performing economy were not taken into account. Contract design and implementation had an impact on the incentives. In fact the rigid design of the contract created a barrier to implementation of reforms and regulations to solve problems (E. Lentini, personal communication 19 September 2005).

Aguas Argentinas chose a capital structure with a debt level higher than international standards. Debt levels were renegotiated in order to change the terms of the original bidding proposal. Financing was provided through debt and not through equity. With the depreciation of the Argentinean peso in 2002 the company's debt was USD 700 million (Table 6.2) and the level became critical.

**Table 6.2. Profitability and debt level Aguas Argentinas S.A. (1994-2001)**

Net income/sales	Net income/equity	Debt/equity
13%	21%	2.4

*Source:* ETOSS-Gerencia de Economía del Sector (Regulatory Agency-Sector Economics Manager).

Until 2000 the tools of choice for ensuring universal service were cross-subsidies for expansion, the infrastructure charge, later replaced by a universal service charge, and works by third parties. Works by third parties included connections and secondary networks paid for by new users or communities and neighbourhoods. Construction companies, working with municipalities with the authorisation of the concessionaire, negotiated with potential users to construct the works, which were paid for by users through long-term loans at high interest rates. The works, paid for, or mostly paid for, by users, then became an asset belonging to the concessionaire. This system operated before privatisation. It was a way to compensate for the dearth of public funding. Third-party works contracted and under construction before privatisation, and transferred to the concessionaire after the privatisation, facilitated compliance with some of the contract



goals. They were accounted for as concessionaire investment. The system was not transparent, and the lack of clear rules regarding attribution has resulted in debate. Some argue that the concessionaire cannot legally claim to have financed third-party works, and therefore these cannot be counted as concessionaire investment. For others, third-party works were part of the risk assumed by the concessionaire, which stood to gain if they were significant in relation to contract goals, and to lose if they were negligible. It seems clear that the contract should have explicitly addressed this problem to prevent conflicting interpretations.

**Table 6.3. Aguas Argentinas income statement, 1997-2004**

ARS millions

	1997	1998	1999	2000	2001	2002	2003	2004
Revenues	419 998	536 722	510 958	514 246	566 037	59 9648	593 824	610 374
Operating expenses	349 300	366 903	389 854	359 739	409 575	457 874	489 427	637 675
EBIT: Earnings before interest and taxes	70 698	69 819	121 104	154 507	156 462	141 774	104 397	-27 301
Interest expense	-12 962	-19 774	-28 948	-33 393	-39 395	1 805 582	153 507	45 839
Income tax expense	-	-13 500	-30 037	-36 053	-43 188	11 727	-33 840	-4 699
Net income	57 736	36 545	62 119	85 061	73 879	1 652 081	224 064	13 839
<b>Cash flow</b>								
EBIT: Income tax expense	70 698	56 319	91 067	118 454	113 274	153 501	70 557	-32 000
Depreciation	66 251	51 465	72 413	70 440	71 982	-	-	-
Changes in working capital	1 740	-7 940	-21 412	-26 937	13 791	97 623	-82 802	-84 631
Capital expenditures	251 711	142 807	200 658	189 971	129 770	84 317	74 875	75 022
Free cash flow for the firm	-116 502	-27 083	-15 766	25 860	41 695	-28 439	78 484	-22 391
<b>Balance sheet</b>								
Current assets	123 114	131 312	150 418	203 877	121 717	194 839	239 345	129 352
Fixed assets	847 763	939 105	1 067 350	1 186 881	1 244 669	1 247 670	1 277 152	1 372 848
Total assets	970 877	1 070 417	1 217 768	1 390 758	1 366 386	1 442 509	1 516 498	1 502 200
Current liabilities	360 316	324 602	245 620	379 676	338 808	924 919	1 205 848	1 262 869
Long-term liabilities	337 136	453 845	638 059	612 932	582 549	1 758 744	1 327 739	1 156 083
Equity	273 425	291 970	33 4089	398 150	445 029	-1 241 154	-1 017 090	-916 752
Total liabilities and equity	970 877	1 070 417	1 217 768	1 390 758	1 366 386	1 442 509	1 516 497	1 502 200
<b>Financial ratios</b>								
Net margin (net income/sales)	13.7%	8.4%	12.2%	16.5%	13.1%	-275.5%	37.7%	2.3%
Return on equity	23.0%	12.9%	19.8%	23.2%	17.5%	415.0%	19.8%	-1.4%
Debt/equity	2.6	2.7	2.6	2.5	2.1	-2.16	-2.49	-2.64

Source: ETOSS-Gerencia de Economía del Sector (Regulatory Agency, Sector Economic Manager)

Table 6.3 presents the financial statement of Aguas Argentinas for the period 1997-2004. The 2002 crisis had a negative impact on its financial situation, since its debt was incurred in dollars and it suffered a loss as a result of exchange rates differences. Debt and losses resulted in negative equity. Profits increased however in the following years.

New programmes were implemented in 2001 and 2002: *i*) the Social Tariff Programme (PST) is a cross-subsidy to demand in which selected beneficiaries get targeted discounts, based on social polls; *ii*) the Programme for Poor Neighbourhoods (PPN) constructs secondary networks with municipal, beneficiary, and concessionaire contributions, and tariffs enjoy discounts.

The Programme of Social Tariff Beneficiaries is based on polls designed by the regulator. It will be audited to correct for mistakes. It benefits 80 000 households and 300 000 people. Poor neighbourhoods have location specificities that make leakage to non-targeted users difficult.

The costs of the new programmes for the poor are not significant for ETOSS (*Ente Tripartito de Obras y Servicios Sanitarios* – Tripartite Agency for the Regulation of Works and Sanitation Services) and AA (Aguas Argentinas, the concessionaire). For the Social Tariff Programme, municipal costs were high at the identification stage, since municipalities had to constitute special working teams. ETOSS spends ARS 110 000 a year, and the 18 participating municipalities spend ARS 350 000 a year to employ 69 people. The programme has a budget of ARS 4 million a year. The PPN's administrative cost to AA is ARS 500 000.

The concession did not have promoting innovative technologies as a main goal. The PPN's methods and supplies are adjusted to the needs of emergency neighbourhoods without compromising the quality achieved by the concession. Self-help is used, and sewerage utilises a system of "sewerage without solids".

### **Impacts of the change: the situation of the poor**

The bidding proposal ensured a theoretically reasonable ratio of income to investment. The problem was that income did not match expectations. Total coverage increased by 4% for water by 1996/97 but decreased by 3% for sewerage (Azpiazu and Forcinito, 2003, p. 69; FIEL, 1999b).

According to Suez, Buenos Aires was a "sick system". The contract was prepared "with total inadequacy, or even absence of, of reliable information, data, records and measures" (Suez, undated, p. 2). Already in 1994 the company had taken a loan from the International Finance Corporation (IFC) that would only be repaid if there were rate increases or reductions in investment (Alcazar *et al.*, 2000, p. 41).. Both the paucity of data and the loan suggest that there was a reasonable expectation of renegotiation. This may justify the claim that the bidder was opportunistic and the offer predatory.

The context may not have favoured poor prospective users. Although the contract explicitly establishes that governments did not assume responsibility for factual accuracy (Alcazar *et al.*, 2000, p. 21), the information issue, among other factors, justified renegotiations (Suez, undated).

New users had to pay the costs of expanding the secondary network plus the costs of connection and modifications within the house. The average infrastructure charge was ARS 44 a month, for two years. New connections were a problem for the poor with a monthly income ranging from ARS 200 to ARS 245. The charge thus represents about 18% of the monthly or yearly income of a poor household, depending on the time period considered. Some 85% of those unconnected were either poor or low income. When the pipes and connection are available to a household, the owner is obliged to connect to the service. If the owner does not, the contract allows the concessionaire to start billing even

if no service is provided (Abdala, 1996). Tariffs and connection and infrastructure charges for both water and sewerage were increased in 1994.

Problems of affordability affecting the infrastructure charge prompted contract renegotiations. The infrastructure charge was eliminated in 1997 and the universal service and environmental charges were established in 1997 (SUMA). The universal service charge was ARS 2.01 per service every two months (water and sanitation). The environmental charge was ARS 0.99 per service every two months, starting in December 1998. Both charges were to be paid by all users. Lower connection charges for new users were implemented (ARS 120 per service, to be paid in 30 bi-monthly instalments). Expansion was cut (by 15% for water and 13% for sewerage for the first five years). The average water bill of customers already connected rose by 19%, while for new consumers it declined by 74%. SUMA was paid in advance, which reduced the government's leverage for ensuring completion of the works in a timely manner (Alcazar *et al.*, 2000, pp. 36-39). While expansion was reduced, tariffs, based on the promise of expansion, were not lowered. According to some researchers, the ARS 700 million not invested mostly affected the poor of greater Buenos Aires.<sup>4</sup>

One of the problems of the concession was the lack of an agreed methodology for establishing compliance with targets. The concessionaire counted as compliance works done by third parties and the legalisation of existing informal connections. Others argued that such expansion should not be credited to the concessionaire. If legalised connections and third-party works are counted, the rate of compliance during the first five years of the concession would be 70% of contracted works, for both water and sewerage. If not, the rate of compliance falls to 40% for water and 20% for sewerage. Thus non-compliance, seven years after initiating the concession, would be 41% for water and 56% for sewerage (Arza, 2002, p. 17). There are also claims that average water bills increased by 63% as of January 1999, although increases were banned during the first ten years of the concession (Table 6.4).

**Table 6.4. Evolution of the average residential bill, with SUMA<sup>1</sup>**

Concept	Date	Average bill in ARS	Avg. bill, May index 1993 = 100
OSN	May 1993	19.40	133
Bidding Aguas Argentinas	May 1993	14.56	100
1st tariff revision	June 1994	16.53	114
Universal service incorporation	November 1997	20.55	141
2nd tariff revision	May 1998	21.65	149
Environmental charge incorporation	January 1999	23.73	163
Increase 2001 five years and annual revision	January 2001	26.25	180
Increase 2002 five years and annual revision	January 2002	27.40	188

1. Prices are nominal market prices and are not adjusted for inflation.

Source: ETOSS-Gerencia de Economía del Sector (Regulatory Agency-Sector Economics Manager).

4. Maria Elena Corrales, comments in Peter Rogers IADB paper, Fortaleza.

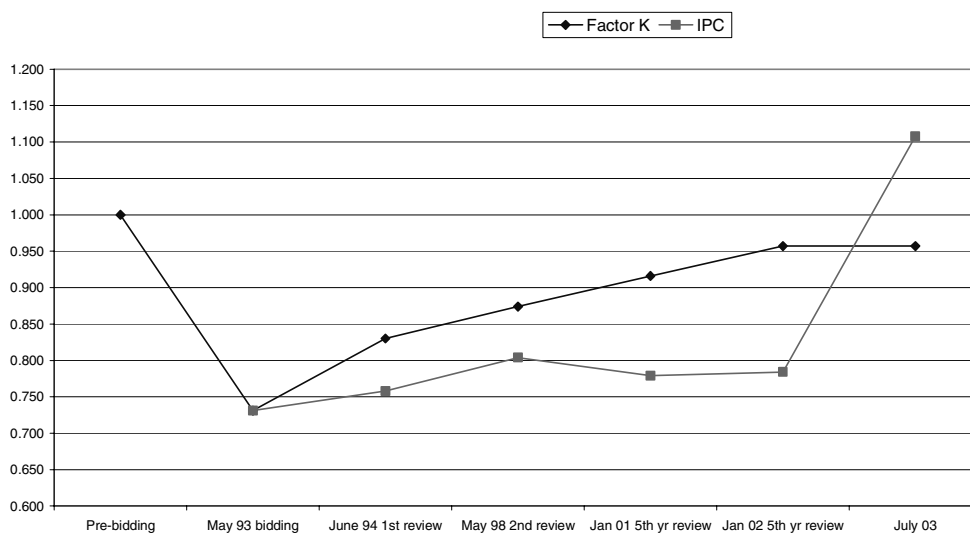
The original tariff adjustment was 0.731, against the state company's tariff base of 1. It was adjusted in 1994 (13.5%). The universal service and environmental charges, explained above, were added later, together with a fixed connection charge of ARS 120 to be paid by new users. In 1998 ETOSS authorised an increase of 1.61%. The K factor increased to 0.8434 (Table 6.5 and Figure 6.6). The company appealed to the executive, which authorised an increase of 5.31%. The K factor increased to 0.8741.<sup>5</sup> There were K increases of 4.5% (2001), 4.4% (2002) and 3.9% (2003). A fixed charge of 1.5% of the tariff, not reflected in K, was also approved in 2003. Tariff amendments were approved by the executive branch and not by the regulator.

**Table 6.5. The K factor**

Details	Date	Evolution of K
O.S.N.	May-93	1.0000
Bid AASA	May-93	0.7310
1 <sup>o</sup> tariff review	Jun-94	0.8300
2 <sup>o</sup> tariff review	May-98	0.8741
Increase 2001 five years and annual review	Jan -01	0.9169
Increase 2002 five years and annual review	Jan -02	0.9572

Source: ETOSS-Gerencia de Economía del Sector (Regulatory Agency-Sector Economics Manager)

**Figure 6.6. Evolution of the K factor**



Source: ETOSS-Gerencia de Economía del Sector (Regulatory Agency-Sector Economics Manager).

“K” is a multiplier, whose value was 1 at the time of bidding for the concession. The base to which the K factor was applied was the existing rate. The concession was won

5. Truly independent regulators are not subject to administrative appeals. Appeals go to court. Administrative appeals destroy independence from the political establishment.

with a bid to reduce tariffs by 26.9%. Therefore, the concession bid that won proposed a K multiplier of 0.731 which was accepted by the government.

K is similar to a price cap and is adjusted every five years, based on the investment plan. It is the result of a composite index, consisting of ten categories of cost, such as fuel, chemicals, electricity, labour, debt service, etc. The complexity of the index allows for opportunistic behaviour, by both the company and the regulator (Alcazar *et al.*, 2000).

The increase in the K factor was generally above the national consumer price index. For a service whose users depend on a depressed national economy to be able to pay, this creates a gap between income and service costs. When recession and devaluation hit the country the concession became unsustainable. In Chile, where the privatisation process has been very successful, researchers stress that high investment rates and ensuing high tariffs can only be paid when there is a process of continuous national economic growth (Peña *et al.*, 2004, pp. 12-13).

As of 2001 only 39% of the households of the Conurbano had water and sewerage. Only 66% had water. Just 40% had sewerage and 33% had neither. Thus, 56% of households in the poorest decile had neither water nor sewerage, and 83% had no sewerage (Navajas, 2001;<sup>6</sup> Rogers, 2002).

There were no direct subsidies to the poor until 2001, although the poorest households with service access spent 1.1% of their income on water and sanitation, while the richest decile spent 0.3% (Arza, 2004, p. 34). As of 1985-86 the lowest quintile of the population had a rate of access to water supply of 44.8% and the second lowest had a rate of access of 67%. As of 1996-97 the rates had increased to 51.9% and 70.5%, respectively. The same quintiles had a rate of access to sewerage of 30% and of 54.2%, respectively, in 1985-86. These rates dropped to 27% and 45.5% in 1996-97 (Arza, 2004, p. 52, based on FIEL, 1999a). The original design and regulations did not include subsidies for the very poor (Arza, 2004, p. 54). This was a major oversight on the part of the government. In Chile, the system focused subsidies on the poor to accompany the privatisation process. Every water bill in Chile informs the user that it is possible to resort to the local municipality to seek financial assistance in paying it (Peña *et al.*, 2004, p. 51). Obviously this major failure is not attributable to the concessionaire, but to the concession design process.

New programmes for the poor were started in 2001 and 2002. They give some satisfaction, but they do not allow for compliance with universal service objectives. There are now 1.8 million people without water and 3.5 million without sewerage. Only 10% of effluent is treated. A comparison of the agreed results and the effective achievements of the concession shows that, after nine years, water coverage reaches 79% of the population (against a target of 88% and thus a deficit of 800 000); sewerage reaches 63%, short of the target by 11% and a deficit of 1 million; primary sewage treatment is 7%, against a target of 74% and a deficit of 6.2 million people; and investment has been ARS 1 342 000 million against a target of ARS 2 202 200 million, a deficit of 859 400 million (E. Lentini, personal communication). As explained, new consumers were unable to pay the high infrastructure charge, which was therefore replaced by the universal service charge, which in fact was a cross-subsidy. However, the firm could collect it in advance, with a view to future investments, rather than after investments were made. Other programmes that could have helped the process of expanding services to the poor,

6. According to information from Maria Elena Corrales, consultant.

such as third-party works, were not successful either, owing to a lack of transparency in negotiations between construction companies and local authorities.<sup>7</sup> The problems originate in the structure of relationships between construction companies and municipalities.

Renegotiations, inadequate initial data and imperfect evaluation of the economic capacity of the population served, plus the crisis of 2002, resulted in non-compliance with agreed targets. Measures such as the STP and PPN, while effective, do not make up for the lack of investment commensurate with the magnitude of the problem.

### **Conflicts between equity and efficiency: conflict resolution and sectoral characteristics**

In a social and economic sense equity may be understood as the balance in the distribution of costs and benefits between providers and consumers (fairness), including access by the poor to water and sanitation services.

Systems with a long-standing history of private provision of public utility services have often seen conflicts between private and public interests. One aims to maximise profit while the other seeks adequate service at the lowest possible price (Phillips, 1993, pp. 5-6). Thus, in the absence of competition, such a balance hinges on regulation and contract design so that both economic efficiency and social equity are sought and achieved.

In technical regulatory terms, equity can also be understood, by opposition to debt, as the part of the capital structure of the company provided by stockholders (shared capital/property). Inadequate ratios of equity (property) to debt, in capital structures, affect social equity and efficiency.

In the past utility rate structures aimed at promoting usage but they now look to efficiency. “The shift in emphasis moreover highlights an underlying conflict in objectives – specifically, fairness versus economic efficiency (Phillips, 1993, p. 20; Zajac, 1978). Fully distributed cost pricing may be defended on grounds of fairness, but only incremental cost pricing can be defended on grounds of efficiency and competitiveness (Phillips, 1993, p. 20). Regulators cannot regulate without knowing about investment activities, transfer prices, debt and other items, which necessitate specific accounting systems. These, and many other issues, make regulation an analytically demanding activity.

Buenos Aires’ problems have structural and regulatory roots. The structural assessment of the sustainability of both the national economy and the concession was flawed, and appropriate regulation was not in place.

In 2000, before the Argentinean debacle, the World Bank had warned that: “The Buenos Aires privatisation of water utility services, their information shortcomings, lack of transparency in regulatory decisions and *ad hoc* nature of executive branch interventions, make it difficult to reassure consumers that their welfare is being protected, and that the concession is sustainable.” (Alcazar *et al.*, 2000, front cover)

In similar terms, but with hindsight, *The Economist* stated that: “In Argentina it has been said that privatisations were sweet deals, with public utilities becoming private,

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7. Personal Communication, ETOSS, Office of the Economic Manager of the Sector, 24 September 2005.

rather than public monopolies. Rates in long-term contracts were updated on the basis of US inflation, even if prices in Argentina were falling. Dollar interest rates were high, even if in theory risk was low.” (*The Economist*, 2002, p. 27)

Regulation did not properly address the conflicts between equity and efficiency in the relationship between society and the company or the complexities of capital structure and adequate ratios of property to debt. Neither regulation nor contract design addressed properly the needs of the poor. Regulation and control were weak, and political authorities routinely bypassed the regulator, as in the 1997 renegotiation.<sup>8</sup>

Regulation and contract negotiations lacked a key technical tool for enhancing social equity as they did not ensure that the level of equity (property invested/shared capital of stockholders) was commensurate with the magnitude of the operation. Public utilities may finance their investment through equity or through debt. If debt is too high, fixed charges are high and have to be paid by consumers. Likewise the cost of capital increases financial risks and therefore costs (Phillips, 1993, p. 233). Users pay these costs. That is why the debt-capital ratio is closely controlled. In the United Kingdom, for example, the maximum theoretical debt is 1:1 or 50% debt and 50% equity (Ofwat, 2002). In Buenos Aires, it was 2.4:1. The strategy of having a debt/equity (shared capital) ratio well above what is technically acceptable in advanced regulatory systems affected both economic efficiency and social equity (in the relationship between company and users). Costs were higher than they might have been and were transferred, through rates, to users.

Transfer pricing also affects efficiency. Companies may buy their inputs from associates, eventually increasing costs and therefore tariffs. Social equity (in allocation of costs and benefits) is again affected.<sup>9</sup> In addition, privatisation did not originally provide subsidies for the poor, and the charge system did not encourage expansion to poor areas. Equity was not properly embedded into the concession design.

The conflicts associated with regulation require a regulator with independence, impartiality and technical knowledge to ensure equity in conflict adjudication processes. Yet, political authorities often bypassed the Buenos Aires regulator in both rate regulation processes and contract renegotiation (Alcazar *et al.*, 2000, p. 37).

The global economy and its institutional framework, in addition to internal regulations and institutions, can affect the equity aspects of the concession. As a foreign investor, the provider was entitled to use the state arbitration procedure. In state arbitration cases investors usually attempt to keep a tariff level commensurate with contractual arrangements and agreed adjustment provisions, even if adjustments are in foreign currencies and the national economy is in crisis. Because of the 2002 crisis, Aguas Argentinas submitted an emergency plan which suspended all non-emergency investment, with the company to receive dollars at the old 1:1 exchange rate, in order to serve the debt and buy inputs.<sup>10</sup>

8. As of 1 January 2005, Maria Julia Alsogaray, the Secretary of State responsible for renegotiation was in jail, accused in eight cases of corruption, although none is specifically related to Buenos Aires concession, *Clarín*, Buenos Aires, 1 March 2005.

9. In the case of Aguas Argentinas, an audit carried out by Halcrow on 15 August 1997 concluded that the works in the first three years of the five-year plan, were generally contracted to companies related to Aguas Argentinas. Prices could have been lower if contracts had been grouped. Comparing prices with similar waterworks, budgets were generally higher than the references.

10. Memo from Carlos Ben and Juan Carlos Cassagne, January, 2002, to the National Secretary for Water Resources.

Aguas Argentinas signed an agreement that put arbitration on hold until 31 December 2004. Then, the concession was rescinded and the company sued the government, requesting that tariffs be adjusted in line with devaluation. Such adjustments may well go beyond the carrying capacity of the country and the paying capacity of users. Elsewhere, previous cases of national economic crisis of the magnitude of Argentina's have consistently ruled that tariffs cannot increase above the rate of national economic growth.<sup>11</sup> Otherwise some economic actors would not be affected by the crisis and be a regressive factor. It may be argued that differential protection is not equitable.

The practice of guaranteeing exchange rates is questioned. World Bank analysts have pointed out that such guarantees can wipe out the benefits of privatisation by dampening incentives to select and manage programmes and projects efficiently (Gray and Irwin, 2003). Chile does not allow adjustments according to exchange rate variations. As a result companies seek financing in local capital markets to avoid the risk of currency fluctuations.

## The regulator

Buenos Aires did not have a regulator prior to the concession, when ETOSS was created to control it. Almost every empirical and theoretical principle regarding the organisation of regulators was disregarded. The Buenos Aires regulator ETOSS is a political body, with representatives from three levels of government, and its decisions may therefore be influenced by political considerations. Its board consists of two representatives of the Presidency of Argentina, two from Buenos Aires Province and two from Buenos Aires Municipality. They represent different political jurisdictions and different political parties. Although members are chosen for six years, most have lasted only two years. The different levels of government have put pressure on the regulator to take politically motivated decisions (Alcazar *et al.*, 2000, p. 30). For example, in 1994 the mayor of Buenos Aires wanted to build a highway and resettle the residents of a shantytown located on the chosen route. He pressured Aguas Argentinas to build water and sewerage and then ETOSS to approve the tariff increase requested by the company to finance the construction. Some observers believe that the increase was too large, and that the change in responsibilities and tariffs violated the concession contract. Disputes arose among board members, resulting in paralysis. The opposition party governed the city, and the province was President Menem's main opponent in the governing political party. "This situation raised the risk that regulatory decisions would be based on partisan conflicts, and reduced the credibility of the concession." (Alcazar *et al.*, 2000, pp. 30-31) Moreover, the regulatory framework, approved by decree, was easily manipulated and changed, as compared to a regulatory body with regulations based on laws.

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11. In the United States, at the time of the Depression, the courts recognised a decline in interest rates and business earnings throughout the country, and was willing to accept lower rates of return (Phillips, 1993, p. 378, and cases quoted there). In addition: *Wilcox vs. Consolidated Gas*, 212 US 19, 48-49 (1909); *Lincoln Gas and Electric Light vs. Lincoln*, 250 US 256 (1919); *Missouri ex-real Southern Bell Tel Co. vs. Missouri Public Services Commission*, 262 US 276 (1923); *McCardle vs. Indianapolis Water*, 272 US 400, 419 (1926), *Alexandria Water Company vs. City Council of Alexandria*, Supreme Court of Virginia, 163 Va. 512; 177 S.E. 454 (1934); *State et al. vs. Lone Star Gas Company*, Texas (July 1935); Lexis 1935; *Daytona Power* 1934; *Chesapeake and Potomac* 1935; Driscoll, 1939.



The regulator was staffed with people from the former government agency.<sup>12</sup> It thus had divided loyalties, was inexperienced, had to work on a one-to-one basis with a single regulated company, and lacked a basis of comparison. Because of the theoretical underpinnings of the regulatory approach applied in Buenos Aires it was also weak, in terms of powers, capacity and information.

It is, however, well financed through a surcharge on bills. While some authors have criticised the procedure, it reflects international practices. In the United States, financing comes from a percentage tax on each utility's gross revenues, although six states finance from general revenues (Phillips, 1993, p. 37). The total budget of ETOSS is ARS 12 million and compares favourably with the budgets of state regulators in the United States (Phillips, 1993, pp. 138-139).

ETOSS has 130 employees, and there are no programmes to reduce costs. There have been some training courses, but not a full-fledged policy to create a fully capacitated, competitive, world standard regulator. Directors are not generally appointed on the basis of experience and training relevant to the regulation of the sector. Its structure is affected by information asymmetries. Some personnel have developed skills beyond their initial capabilities, but it is more the result of personal effort and of the regional impact of ADERASA (South American Association of Water Regulators) than of a coherent national policy.

### **Institutional adaptation**

Regulation was initially affected by rushed privatisation, ideology and the idiosyncrasies of the government of the time. Comparing the Buenos Aires privatisation with those of Lima and Santiago, a World Bank Report says that: "The Buenos Aires privatisation went forward as part of the block of transactions because the political net benefits to Menem appeared to be larger than the net benefits from similar actions in Peru to Fujimori, or in Chile to Pinochet." (Alcazar *et al.*, 2000, p. 14) Emphasis on speed affected information (Alcazar *et al.*, 2000, p. 20). The privatisation "left in place" (it did not change with the privatisation) a tariff system that was opaque and not transparent. "Once again, the Government actors did not think they had time to develop a more transparent regime." (Alcazar *et al.*, 2000, p. 21)

Light regulation was the approach taken for public utilities at the time of privatisation. As a result, several important issues were disregarded. Transfer price, regulatory accounting, information requirements, minimum conditions of capital structure, were among the regulatory tools omitted. In issues such as rates of indebtedness, too much flexibility was allowed.

The regulatory regime was set by decree and therefore could be changed at any time by the national government. As a result a secretariat of the national government was the authority for the application of the contract and bypassed the regulator when taking decisions, as in the 1997 renegotiation of the contract (Alcazar *et al.*, 2000, p. 37).

Over time, the regulator, civil society and the company developed important tools: a user commission was set up, public audiences on tariffs were instituted, public directorate meetings were planned, a social tariff programme and a poor neighbourhood programme were created, and a trust fund for expansion was implemented. Other developments were

12. Although some of them, who were also union members, such as Carlos Ben, served AA (as a Director) and not the regulator.

regulatory accounting, permanent auditing of billing, procurement regulations, related services and suppliers regulations, separation of concession accounting and accounting books (E. Lentini, personal communication).

## Conclusions and lessons

Conclusions to be drawn from the Buenos Aires concession include:

- Public utility services, generally, and water services, specifically, are not sustainable without adequate rates of economic growth, income and employment.
- Water services were not a priority for the national government. It did not put any funds into the concession after the privatisation.
- The main priority of the Argentinean government was to ensure an artificially stable exchange rate. Resources were allocated accordingly. The impact of such policy on growth and governance was not evaluated. This should have been done and should be considered in future privatisation processes.
- The poor were not a priority. Funds were not provided to cover their needs.
- The socioeconomic context and affordability were not properly evaluated.
- The regulator was weak, politically designated, and not independent. It did not have all the necessary regulatory tools.
- A number of decisions and renegotiations of the national authorities, which were favourable to the concessionaire, eroded the regulator's authority.
- The regulatory framework was weak, affected the sustainability of the concession (Alcazar *et al.*, 2000, p. 55), and did not take into account relevant experience, such as that of the United States and the United Kingdom.
- Conflict-solving mechanisms, *i.e.* international courts of arbitration, have not yet developed criteria for addressing conflicts resulting from general economic crises.
- Contractual and legal protection of concessionaires is not enough at times of economic crises. Moreover, some protection, such as guaranteed exchange rates, may be counterproductive, since it gives a false sense of security and does not encourage economic efficiency.
- The Buenos Aires regulatory system was mostly based on contract regulation. In accepting contract regulation, the parties ignored the fact that contract regulation affects regulatory quality. This type of regulation is disqualified by mature regulatory systems, such as that of the United States (Phillips, 1993, p. 130).

## Lessons

- Countries, financing institutions and service providers should carefully analyse the socioeconomic context, the quality of macroeconomic policies, national priorities and the sustainability of economic growth before embarking on public or private development of water services. Services are costly and stagnating economies may be unable to afford them.

- Governments striving to expand and enhance water services, including control of environmental externalities, will not be successful unless policy priority is given to the sector, resources are adequate and subsidies are provided for the poor.
- Rushed decisions should be resisted. Adequate physical, economic and social data are crucial to good decision making and to the sustainability of services, state-owned or privatised.
- Public utility services are not independent of the socioeconomic mores of their environment. Their sustainability is affected by overall economic performance. Privatisation is a formal procedure that does not, by itself, ensure sustainability, since success depends on the quality of overall economic policies, public priorities and economic growth.
- Future regulatory design should put in place the basic regulatory instruments necessary for good regulation, based on relevant experience, enacted through regulatory law and separate from the contract.<sup>13</sup>
- Future regulatory efforts should rely less on theory and be aware of, and regulate for, proper management of critical regulatory issues.
- International courts of arbitration dealing with controversies associated with public utility services should apply the principles and rules accepted by civilised nations when legislating, regulating and adjudicating conflicts associated to the utilities sector.
- Countries with a tradition of private provision of utility services, such as the United States and the United Kingdom, have developed such principles. They include reasonable returns, linking rates and tariffs to growth and performance of national economies, controlling transfer prices, requiring expenses to be reasonable, controlling company debt, setting regulatory accounting, having independent regulators, connecting returns to actual investment, providing subsidies and protection for the poor, requiring efficient companies that transfer efficiencies to customers, providing regulators with broad information powers, penalising improvidence and non-compliance, etc.
- Governments and lending organisations should carefully consider the impact of special guarantees, such as rates of exchange, on the efficiency of service providers, macroeconomic national balances, contingent national liabilities, and equitable apportionment of national resources.
- Bidding mechanisms, and other measures such as price cap systems, are no substitute for adequate regulation. There is a need to refine competition mechanisms for awarding monopolies in order to avoid bid offers with predatory tariffs (to win now and negotiate later) and provide for a capital contribution from the successful bidder that represents a level of risk appropriate to the venture undertaken.
- Initiating a privatisation process with faulty data and inadequate public information is a prescription for conflict.

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13. See for example, Phillips (1993) for the United States; Cour des Comptes (1997), for France, and Ogus (1994) for the English experience.

## Postscript

In 2002 the Argentinean government enacted emergency legislation to cope with the collapse of the official exchange rate. The macroeconomic shock was intense. The artificial exchange rate of one peso to the dollar changed to four pesos to the dollar and then, as of September 2006, to three pesos to the dollar. Public utility rates were kept at the pre-devaluation levels, along with a prohibition to transfer the devaluation to the rates or to adjust them according to any indices.

Aguas Argentinas and the government discussed and negotiated various alternatives for coping with the situation throughout 2003 and 2004. In 2005, the situation became critical when the parties failed to agree to continue negotiations. Faulting the government, Aguas Argentinas requested rescission of the contract, but the government rejected its claim. Aguas Argentina then sued the Argentine Republic, at the International Centre for the Settlement of Investment Disputes (ICSID). Aguas Argentina claimed that:

- The Argentinean government had violated its obligations under international treaties for the protection of investments.
- The company's property had been expropriated without compensation.
- The government had dealt with the company and its investors and stockholders in an unfair and non-equitable manner.

Specifically, two claims were made: one initiated by the company and other, subsidiary to the first, by the stockholders, with the exception of the International Finance Corporation (IFC), requesting compensation from the Argentinean government. The claim initiated by the company was subsequently withdrawn, but the claim by the stockholders remains.

On 21 March 2006, the Argentinean government rescinded the concession, arguing that the concessionaire did not fulfil its obligations. In particular it cited:

- Failure to comply with obligations in terms of expansion and quality.
- High levels of nitrates in the water supplied.
- Non-execution of waterworks including the Lanus-Temperley aqueduct and the Lanus plant.
- Non-compliance with water pressure obligations.

ICSID has not, at the time of writing, issued its decision.

The government has created a new company, which is funded by the government and which owns 90% of the stock. The other 10% is owned by the company's labour union. The president of the new company was previously a member of the Direction of Aguas Argentinas representing labour-owned stock. While the new company is state-owned, it is governed by the rules of private corporations. The new utility is therefore likely to require significant regulation; applying rules applicable to private corporations to a public company or managing public funds under private corporation arrangements can create important challenges.

Before privatising its water utilities, Chile improved the performance of state-owned utilities through appropriate regulation. By the time the utilities were privatised they had achieved high standards of performance.

External advisors encouraged the Argentinean government to strengthen the regulator in order to cope with the new situation; to enact stringent efficiency requirements; to enact precise rules for regulatory accounting; to facilitate public control, participation and monitoring; to create a national system that would allow for comparing companies, both private and public; to enable the regulator to draw on foreign data and information to evaluate the company; to create a national system of regulators of public utilities; and, very importantly, to create a system of stringent penalties for companies and employees that do not carry out their duties. Advisors also suggested making efficiency not only a regulatory requirement but also a personal duty of managers and employees, with violations subject to stiff penalties.

Members of the government, the regulator, the management of the company and labour are, at the time of writing, discussing the contents of the new regulations.

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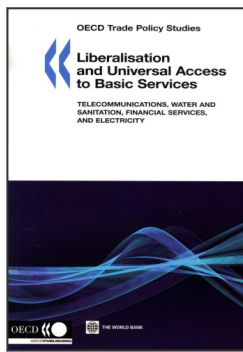
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