

THIRSTING FOR EFFICIENCY: A) THE POLITICS OF WATER REFORM B) EFFECT OF REFORM ON PERFORMANCE OF URBAN WATER UTILITIES

George Clarke, World Bank

A. THE POLITICS OF WATER REFORM

Introduction

Although reforming infrastructure by introducing private sector participation and improving regulation can produce large societal gains, the gains are often unevenly distributed. When reform harms politically powerful groups, they can often find ways to slow, or stop, reform at the expense of the rest of society. Recognizing the factors that determine whether a group can block reform is vital if advocates want to maximize the probability of reform. This note summarizes results from a World Bank study that looked at the political determinants and economic effects of urban water reform in six large cities in developing countries.¹ Four of the cases involved private sector participation, while two involved reforms of state-owned enterprises (see Table 1). This note summarizes the political factors that affected the decision to reform and determined the type of reform that was implemented, while a companion note summarizes the factors that affected the success of reform.

Winners and losers from reform

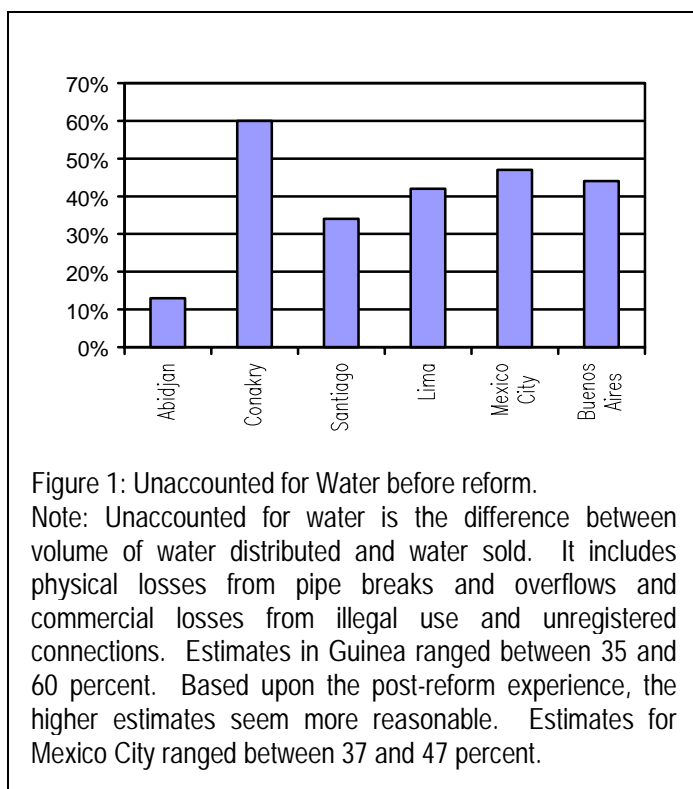
Whether reform is politically desirable and feasible will depend upon the likely size and distribution of gains and losses, and how important potential winners and losers are to political decision-makers. In turn, initial sector conditions determine how reform affects different groups. Groups of particular interest include connected households, non-connected households, taxpayers, workers and private investors involved in the sector. In the rest of this section, we discuss the factors that affect how different groups are affected by reform of the urban water sector, and why.

Connected Customers

Reform will affect connected users primarily through its effect on water and service quality and prices. Since quality improvements are most likely in cities where prices were set below marginal cost, quality and price often affect current consumers in opposite ways.

Water and Service Quality. When the public utility operated inefficiently before reform, reform can benefit current users by improving water or service quality. Quality was poor in most of the case-study cities before reform, but was worst in Conakry and Lima. In Conakry, the water system was on the verge of collapse. Service was infrequent, water was visibly polluted and unaccounted for water was high (see Figure 1). Low prices, combined with weak billing and collection, meant that maintenance was inadequate and it appeared that a major reform would be needed to avoid system collapse. The water system in Lima faced similar problems. Nearly half of customers received water for less than 12 hours a day and over a quarter received water for less than six hours a day. Despite the arid conditions and the high cost of raw water, 43 percent of water production was lost due to leakage or theft (see Figure 1). Further, due to a lack of clean water and a failure to remove and treat wastewater, waterborne diseases had become a major cause of morbidity and mortality, especially in the poorer areas of Lima. Consequently, in these two cases, quality improvements compensated customers for the price increases that accompanied reform.

¹ Considerably more detail on the situation before reform, the effect of reform, and the cost-benefit methodology is available in the case studies and the synthesis paper. The six case studies are summarized in Mary Shirley and Claude Ménard, 2000. "Cities Awash: Reforming Urban Water Systems in Developing Countries." Policy Research Working Paper, World Bank, Washington DC. The six case studies are: (Abidjan) Claude Ménard and George Clarke, 2000. "Reforming Water Supply in Abidjan, Côte d'Ivoire: A Mild Reform in a Turbulent Environment." Policy Research Working Paper 2377, World Bank, Washington DC; (Buenos Aires) Lorena Alcázar, Manuel A. Abdala, and Mary M. Shirley, 2000. "The Buenos Aires Water Concession." Policy Research Working Paper #2311, World Bank, Washington DC; (Conakry) Claude Ménard and George Clarke, 2000. "A Transitory Regime: Water Supply in Conakry, Guinea." Policy Research Working Paper 2362, World Bank, Washington DC; (Lima) Lorena Alcázar, Lixin Colin Xu and Ana Maria Zuluaga, 2000. "Institutions, Politics and Contracts: The Attempt to Privatize the Water and Sanitation Utility of Lima, Peru." Policy Research Working Paper 2478, World Bank, Washington DC; (Mexico City) Luke Haggarty, Penelope Brook and Ana Maria Zuluaga, 2000. "Thirst for Reform? Private Sector Participation in Urban Water Supply: The case of Mexico City's Water Sector Service Contracts." Policy Research Working Paper, World Bank, Washington DC; and (Santiago) Mary M. Shirley, Lixin Colin Xu, and Ana Maria Zuluaga, 2000. "Reforming the Urban Water System in Santiago, Chile." Policy Research Working Paper 2294, World Bank, Washington DC. These papers form part of a forthcoming book, *Thirsting for Efficiency*, from Elsevier Press.

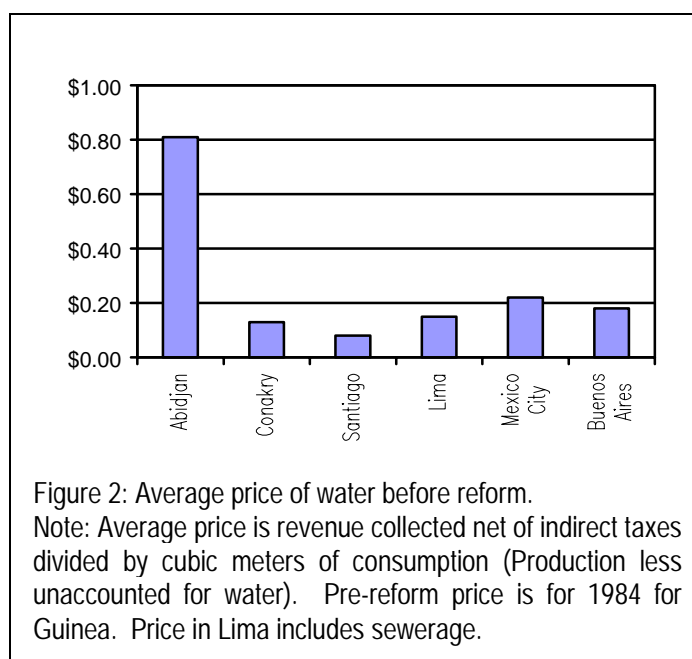


In contrast, in two of cities, Abidjan and Santiago, the water systems were already performing well. In Abidjan, a private operator had been responsible for sector operations for nearly 30 years. Unaccounted for water was low (see Figure 1), and water quality and pressure were good, especially by regional standards. Similarly, service appeared adequate in Santiago. Although unaccounted for water was relatively high (see Figure 1), it had been improving and cutoffs were not frequent by regional standards. Consequently, in these cities, there was little pressure from current users for improved service.

Price of Water. When prices are set below marginal cost before reform, price increases are often necessary or desirable, since setting usage price equal to marginal cost is economically efficient. Further, even if the government is willing to subsidize tariffs through general tax revenues, private operators might be wary about relying upon subsidies if they are unable to enforce contracts with the government (e.g., when the judiciary is politically dependent).

For example, the governments of both Guinea and Côte d'Ivoire failed to pay for their own water consumption for long periods before and after reform. In these cases, it is unlikely that a private operator would have been willing to rely upon subsidies being transferred in a reliable manner.

However, large price increases are painful for consumers, especially when water use was not billed before reform. In four of the six cases, prices were below estimates of long-run marginal cost (see Figure 2 for pre-reform prices in each city). In Lima and Mexico City, raw water was expensive and, therefore, even if efficiency improved significantly after reform, large price increases were needed. Although an abundant source of cheap water was available in Conakry, the marginal cost of water was high for other reasons. In particular, a small number of customers were spread over a large area and per capita consumption was low (most connections were private taps in yards).² Although prices were also below estimates of marginal cost in Santiago, the estimated marginal cost was low and the required price increases were modest. In Buenos Aires and Abidjan, prices were close to estimates of long-run marginal cost and, consequently, price increases were not necessary (see Table 1).



² In 1989, the World Bank estimated that the Average Incremental Cost (AIC) of water in Conakry was US\$0.82/m³. In comparison, the long-run marginal costs in Mexico City and Lima were \$0.41-\$0.82 and \$0.45 respectively. Although it is difficult to compare these estimates, which were computed in different ways and are slightly different concepts, this indicates that large price increases were necessary in Conakry (see Figure 2).

Non-Connected Households

When the connection rate before reform was high (e.g., in Santiago and Mexico City), non-connected households were less likely to benefit from reform and, therefore, less likely to support reform. In contrast, in cities where the connection rate was low (e.g., in Lima, Buenos Aires, and Conakry), non-connected households could potentially benefit from reform and, therefore, might support it. However, the benefit to non-connected households depended upon what alternate sources of water were available, whether the reform was likely to increase system expansion and how system expansion was financed.

When the marginal cost of piped water was high relative to alternative sources, low-income households were less likely to benefit from reform. In Conakry, most non-connected households got water from wells and, consequently, were unwilling to pay high prices for piped water. Although the wells were polluted and the health consequences could be severe, consumers may have been unaware of the full cost. In contrast, when non-connected households get water from expensive water vendors, they are often willing to pay relatively high prices for piped water.

The cases also suggest that system expansion is more likely when reform involves direct private investment (e.g., concessions and full privatization). However, in some cases, reform increased resources for investment in other ways. For example, reform increased the resources available from donors in Conakry. In Santiago and Abidjan, reform managed to increase investment by improving collection or investment efficiency, even though there was little direct private investment.

Even when there are many non-connected households, poor households were often credit constrained and, therefore, unable to pay the up front cost of a new connection. For example, the high infrastructure charge (between \$1,100 and \$1,500) in Buenos Aires meant that many poor households could not afford to become connected. In several cases, including in Santiago and Abidjan, this problem was tackled by subsidizing connection fees through the water tariff or general government revenues. Although this increased the benefits to non-connected households, it sometimes caused tension with existing (often middle-class) customers who then faced higher prices. Further, it was not always possible to finance investment through tariffs. For example, the initial customer base in Conakry was too low to finance system expansion in this way. An alternative strategy to make infrastructure charges more affordable is to provide the option of a financed payment plan – often, even when they are willing to pay connection fees, poor consumers are liquidity constrained.

Taxpayers

In several of the cases, the government heavily subsidized the water sector before reform (e.g., in Conakry, Lima, and Mexico City). Reform was intended to allow the government to reduce these subsidies in several cases (e.g., in Mexico City) and to relax constraints on investment due to restrictions on public borrowing in others (e.g., in Abidjan).³ Although taxpayers can benefit from reform when subsidies are high, since the costs of subsidies were spread over a large number of taxpayers while the benefits are heavily concentrated on particular groups or in particular regions, taxpayers often provide little support for reform in normal circumstances. However, in several cases, fiscal crises changed the governments' political calculations by increasing the cost of subsidization. Inflation also increased the desirability of reform, since it eroded cost coverage due to failures to increase nominal tariffs in line with inflation.

Workers

Workers and managers were often concerned about job losses following reform, especially when the public utility was overstaffed (see Figure 3 for information on staffing before reform). The influence that workers had depended upon whether workers were heavily unionized, whether politicians were heavily dependent upon worker (or union) support, and upon the broader credibility of the unions. For example, although the unions in Buenos Aires opposed private sector participation, they were unpopular with the population at large. Further, the unions had supported President Menem during his election campaign and had few attractive alternatives to switch their support to if he enacted policies they opposed. Consequently, they were unable to effectively oppose sector reform. To reduce opposition from workers, governments took steps to allow workers to benefit from reform in several of the case studies. For example, laid-off workers were given training and equipment to allow them to set up cooperatives to bid for public works contracts in Conakry. Similarly, in Buenos Aires, workers were promised a 10 percent ownership share in the new company.

³ This was also the main motivation for water privatization in the United Kingdom, where significant investment was needed to meet EU standards for water and beach quality.

Private Companies

A final group affected by reform was the private investors and companies involved in the sector. Although the major beneficiaries were often the big international companies that dominated the water sector, local partners and construction firms also were affected. Whether local construction firms gained or lost depended upon several factors. If reform increases the resources available for system expansion, local construction firms could benefit if they could bid for investment contracts. However, reform introduced a new competitor – the private operator – that had an informational or procedural advantage over its local competition. For example, the private operator in Abidjan could implement small investment projects without going through formal bidding.

When the private operator is responsible for system expansion following reform (e.g., a concession or sale), the effect on local firms depends upon how much investment the operator contracts out compared to the public operator. In addition to affecting private sector companies involved directly in the water sector, reform can have an indirect effect on other groups with an interest in sector expansion. In Santiago, construction companies benefited from reform because slow system expansion under the public company had made new house and office construction more difficult. Finally, when politicians use public works for patronage or kickbacks, giving the private operator control over investment can be politically costly and, therefore, might reduce the political desirability of reform.

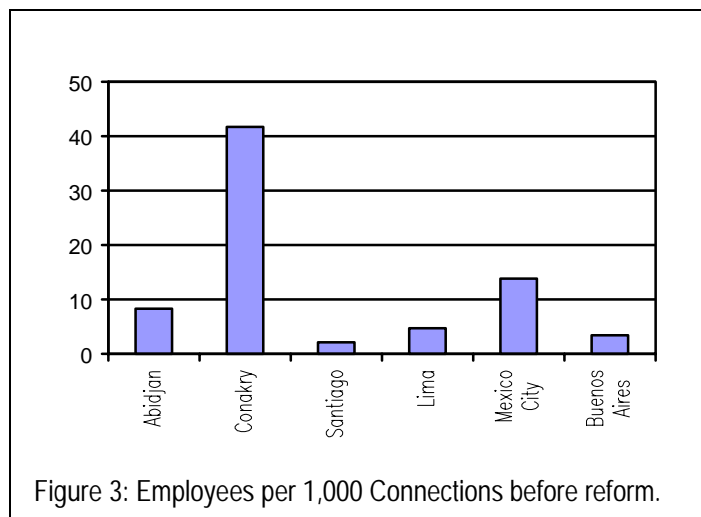


Figure 3: Employees per 1,000 Connections before reform.

Determinants of Reform in Case Study Cities

Although reform affected different groups in the different case studies, this variation alone does not always explain why reform took place in some cases but failed to take place in others.⁴ Conakry and Lima provide an interesting contrast, since the benefits of reform seemed large in both cities and the costs were similar:

1. The coverage rate was very low in both cities indicating that non-connected households could potentially benefit from increased coverage.
2. Prices were far below most estimates of long-run marginal cost, meaning that prices would have to be raised for the systems to become self-supporting. Although price increases would harm connected households, those who could afford to pay the higher prices might benefit from improved water and service quality – something that was a problem in both cities.
3. Although both utilities were overstaffed, unions were not strong, making opposition from workers less salient.
4. Both countries had low credibility with private investors by regional standards, making private involvement in the sector more difficult. This problem was especially severe in Guinea.

Notwithstanding these similarities, the outcomes were quite different. An ambitious reform was initiated in Conakry, while reform attempts largely failed in Lima (see Table 1). This was due to two significant differences between the two cities. First, although prices went up for connected customers, the political effect of the increases was different in the two cases. In Guinea, the government was not heavily dependent upon support from the small minority of relatively wealthy consumers who had connections and, therefore, the price increases were less important to its support base. In contrast, President Fujimori was heavily dependent upon the support of the urban poor in Lima – and increases planned for connection fees and the price of water reduced their benefits from a concession. Second, in Guinea, donor support for investment was dependent upon the introduction of private sector participation into the sector. In contrast, in Lima, donors provided support to rehabilitate the water and sewerage systems before the concession was implemented. Although the project was designed only to address the worst defects, it seems likely that this support reduced the pressure for change.

⁴ Support for and opposition to reform in each of the cities is summarized in Table 2.

In Mexico City, the main motivations for reform were externalities due to overexploitation of the underground aquifer and the drain on public finances caused by sector subsidies. However, the political benefits from privatization were small, since coverage was high and service was reasonable for most users. Further, large price increases would have been needed to meet the high cost of bringing water to the city. The politically sensitive nature of water pricing meant that this could result in a political backlash, threatening the government's efforts to regain support in Mexico City. Under these circumstances, the government decided to implement a relatively minor reform with controversial items delayed until later stages, which have subsequently been repeatedly delayed.

In Santiago and Abidjan, the problems were far less pressing. The existing utilities were performing adequately and there was little danger of imminent collapse. In Abidjan, a macroeconomic crisis reduced public resources available for investment, threatening the long-term development of the sector. However, the crisis did not have an immediate impact on sector operations and, therefore, current customers would be unaffected in the near term. In Santiago, reform was initiated under the Pinochet government, which was ideologically committed to privatization. However, since the sector was performing reasonably well and the administration did not anticipate losing power, privatization was not a high priority. The Pinochet administration delayed water privatization and was not prepared for losing a referendum calling for new elections and, subsequently, the elections. The new government was ideologically opposed to privatization, but it did implement reforms in pricing and regulation. Consequently, it is not surprising that minor reforms were implemented in these two cities.

Finally, a concession was implemented in Buenos Aires, the city where the situation was the most conducive to reform. Because prices were above estimates of long-run marginal cost, price cuts for connected wealthy and middle class customers could be implemented at the time of reform. Further, it was hoped that private investment would allow poor and middle class households who were not connected to the system to become connected.⁵ The main opposition was from workers who, as noted above, were politically weak and had little leverage over the Menem administration.

Summary

For reform to be implemented, several conditions appear necessary. First, the reform must be politically desirable. This is more likely when the public operator is performing poorly and when government supporters benefit from reform – usually through improved quality, system expansion or reduced subsidies. Second, the reform has to be politically feasible. If the government relies heavily upon groups that will lose from reform through price increases or job losses, reform will be unlikely.

⁵ In practice, because connection fees were used to finance expansion of the secondary network, many poor households could not afford to connect, resulting in contract renegotiations.

Table 1: Planned and Implemented Reforms in Case Study Cities.

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
<i>Year of Reform</i>	1987	1989	1989	1992	1993	1993
<i>Situation before Reform</i>	Lease ^a	Government Ministry ^c	Autonomous Public Entity	SOE	Fragmented management delegated to several municipal government agencies	SOE
<i>Type of Reform – Planned</i>	Lease ^b	Lease	Sale	Concession	Management Contract	Concession
<i>Type of Reform – Implemented</i>	Lease ^b	Lease	SOE	SOE	Service Contract	Concession
Sector Operations Prior to Reform						
<i>Were prices significantly below estimates long-run marginal costs?</i>	No	Yes	Yes	Yes	Yes	No
<i>Estimated Coverage.</i>	72% ^d	38% ^d	99%	75%	95%	70%
<i>Service Quality</i>	Cutoffs were rare. Water quality was good.	Frequent cutoffs, water was non-potable	Occasional Cutoffs	Frequent cutoffs, Low pressure	Poor water quality in some areas	Occasional cutoffs, Low Pressure
<i>Was water consumption unsustainable?</i>	No	No	No	Yes	Yes	No

^a Lease contract with some characteristics of management contract – compensation for utility was based upon projected consumption.

^b New lease contract gave private operator greater responsibility in planning and implementing investment and compensated private operator based upon actual consumption.

^c Formally, utility was autonomous agency. In practice, it operated as if it were part of the Ministry of Natural Resources and Environment

^d Includes customers who received water from standpipes and neighbors' connections.

Table 2: Political Support for Water Reform in the Six Cities.

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
<i>Year of Reform</i>	1987	1989	1989	1992	1993	1993
<i>Were Beneficiaries of Reform Important Supporters of Government?</i>	Yes (but gains would be small). Main benefit of reform would be reduced need for public resources to finance investment.	Yes (but gains would be small). Supporters would mainly gain through beneficial effect on government finances	No. Main supporters (building and construction industry) supported the opposition ^a	Supporters would mainly gain (in medium term) from improved fiscal situation	Yes. Private companies who won contracts would be useful when government was raising funds for 1994 campaign.	Yes. It was hoped that suburban poor would benefit from increased coverage.
<i>Were Opponents of Reform Important Supporters of Government?</i>	No. Planned reform was quite modest and, therefore, there was little public opposition.	No. Urban elite with water connections were not important supporters of military government.	Yes. Workers were supporters of government ^a	Yes. Poor and middle income households would be hurt by price increases or high connection charges	Yes. Strong labor opposition to reform and urban consumers would be hurt by increased prices.	No. Although unions were important supporters of the government, they had low credibility and could not credibly threaten to switch support to opposition parties

^a Reform initiated under previous regime. The building and construction industry was an important constituent for previous regime.

B. EFFECT OF REFORM ON PERFORMANCE OF URBAN WATER UTILITIES

Introduction

In the late 1980s, the poor performance of state-owned urban water utilities in many developing countries encouraged governments to experiment with reform. This note summarizes results from a World Bank study that looked at reform attempts in large cities in six developing countries.⁶ In three of the reforms, the governments introduced private sector participation – a concession in Buenos Aires, Argentina; a lease in Conakry, Guinea and service contracts in Mexico City (see Table 3). In a fourth case, Abidjan, Côte d'Ivoire, the government increased the existing private operator's investment responsibilities. In the two remaining case studies – Lima, Peru and Santiago, Chile – the governments failed to introduce private sector participation as planned and, instead, implemented reform that left state-owned enterprises in charge of sector operations. This note discusses the outcomes and lessons of the different reform attempts, while a companion note discusses the political factors that influenced decisions to reform.

Outcome of Reform

In this subsection, we briefly discuss the effect of reform on several measures of sector performance: coverage, prices, productivity, and the overall impact on welfare. Details of the effect of reform on these, and other, performance indicators are included in Table 3. Shirley and Ménard (2000), and the individual case studies, contain far greater detail on performance outcomes in each city.

Coverage. Access in Santiago and Mexico City was already high before reform and, consequently, reform did not have a large effect on coverage in these cities (see Figure 4). In contrast, coverage in Buenos Aires and Conakry was relatively low, by respective regional standards, before reform. In both cities, private sector participation dramatically improved coverage. In contrast, reform of the public operator, without increased private sector participation, failed to improve coverage in Lima. Finally, although coverage was already high in Abidjan before reform, at least by regional standards, it increased significantly following the increase in private sector involvement in investment.

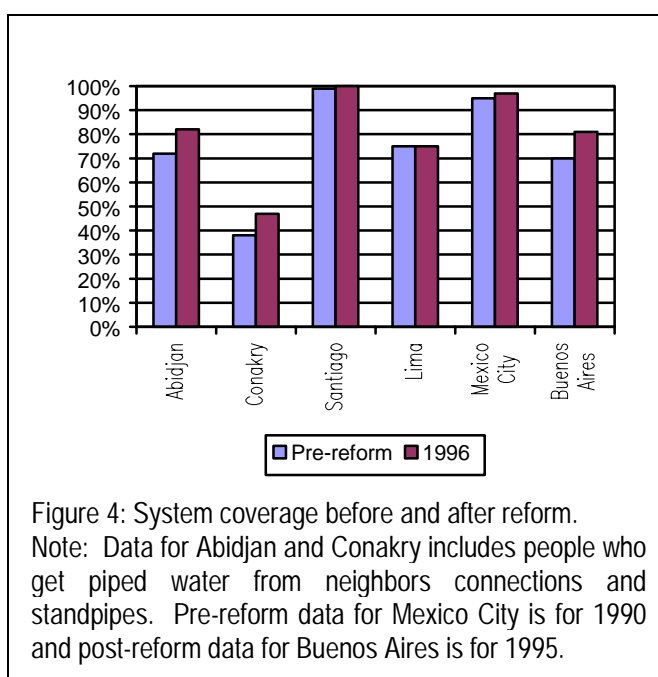


Figure 4: System coverage before and after reform.

Note: Data for Abidjan and Conakry includes people who get piped water from neighbors connections and standpipes. Pre-reform data for Mexico City is for 1990 and post-reform data for Buenos Aires is for 1995.

⁶ Considerably more detail on the situation before reform, the effect of reform, and the cost-benefit methodology is available in the case studies and the synthesis paper. The six case studies are summarized in Mary Shirley and Claude Ménard, 2000. "Cities Awash: Reforming Urban Water Systems in Developing Countries." Policy Research Working Paper, World Bank, Washington DC. The six case studies are: (Abidjan) Claude Ménard and George Clarke, 2000. "Reforming Water Supply in Abidjan, Côte d'Ivoire: A Mild Reform in a Turbulent Environment." Policy Research Working Paper 2377, World Bank, Washington DC; (Buenos Aires) Lorena Alcázar, Manuel A. Abdala, and Mary M. Shirley, 2000. "The Buenos Aires Water Concession." Policy Research Working Paper #2311, World Bank, Washington DC; (Conakry) Claude Ménard and George Clarke, 2000. "A Transitory Regime: Water Supply in Conakry, Guinea." Policy Research Working Paper 2362, World Bank, Washington DC; (Lima) Lorena Alcázar, Lixin Colin Xu and Ana Maria Zuluaga, 2000. "Institutions, Politics and Contracts: The Attempt to Privatize the Water and Sanitation Utility of Lima, Peru." Policy Research Working Paper 2478, World Bank, Washington DC; (Mexico City) Luke Haggarty, Penelope Brook and Ana Maria Zuluaga, 2000. "Thirst for Reform? Private Sector Participation in Urban Water Supply: The case of Mexico City's Water Sector Service Contracts." Policy Research Working Paper, World Bank, Washington DC; and (Santiago) Mary M. Shirley, Lixin Colin Xu, and Ana Maria Zuluaga, 2000. "Reforming the Urban Water System in Santiago, Chile." Policy Research Working Paper 2294, World Bank, Washington DC. These papers form part of a forthcoming book, *Thirsting for Efficiency*, from Elsevier Press.

Prices. In four of the six case study cities, prices before reform were set below long-run marginal cost before reform (see Table 3). In three of these four cities, Conakry, Santiago and Lima, prices increased dramatically following reform, bringing them closer to long-run marginal costs. It is important to note that these increases occurred in two cities, Santiago and Lima, where reform did not involve private sector participation. In Mexico City, prices remained below marginal cost, primarily because price increases would have been difficult due to political pressure. In the two cases where prices were set close to or above long-run marginal cost, increased private sector participation did not result in significantly higher prices. In fact, prices fell significantly in Abidjan.

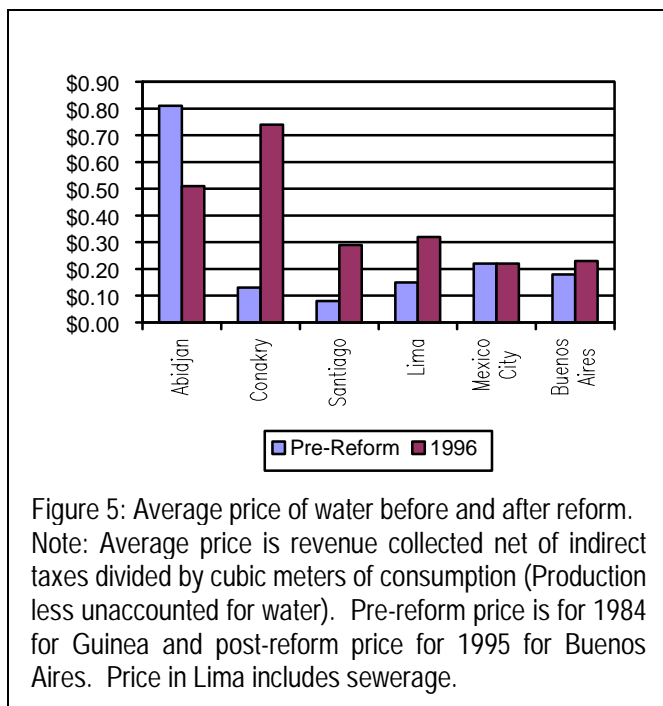


Figure 5: Average price of water before and after reform. Note: Average price is revenue collected net of indirect taxes divided by cubic meters of consumption (Production less unaccounted for water). Pre-reform price is for 1984 for Guinea and post-reform price for 1995 for Buenos Aires. Price in Lima includes sewerage.

Strikingly, prices were far higher in the two African cities than they were in the Latin American cities. Although there were many reasons for the high prices in Africa, one important factor was that the governments of these countries consistently failed to pay their water bills in a timely manner. Since the government accounted for over 25 percent of sales in both countries, this affected prices greatly – in Guinea, for example, provisioning for unpaid bills accounted for over 20 percent of revenues from water sales between 1990 and 1996.

lower in Conakry than in any other country despite reform. In contrast, productivity improved only modestly in Mexico City, despite the fact that its pre-reform productivity was also very low by regional standards.

Labor productivity. Labor productivity improved in all of the case study cities following reform. The smallest change was in Santiago, which had the fewest employees per 1,000 connections before reform. The most dramatic improvement was in Conakry, where labor productivity was significantly lower than in any of the other case study countries before reform. However, productivity remained lower in Conakry than in any other country despite reform. In contrast, productivity improved only modestly in Mexico City, despite the fact that its pre-reform productivity was also very low by regional standards.

Welfare gains from reform. In addition to these, and other, standard measures of performance, four of the case studies included detailed cost-benefit analyses, which assessed the magnitude and distribution of the gains from reform.⁷ Of these four cities, the largest (total and per capita) gains were observed in Buenos Aires, which implemented the most ambitious reform, transferring responsibility for both operations and investment to the private sector (see Table 4). However, the per capita gains from reform were also large in Santiago – a reform that did not involve an increase in private sector participation. We discuss reasons for the gains in Santiago, despite the absence of increased private sector participation, in the next section. Although the per capita gains in Conakry were smaller than in either Santiago or Buenos Aires, there were still significant, especially considering that per capita income is far lower in Guinea than in either Chile or Argentina. The gains from the reform in Lima, which also did not involve increased private sector participation, were smaller than in the other cases. Further, the total gains in Lima were less than one-fifth of the anticipated gains from a concession

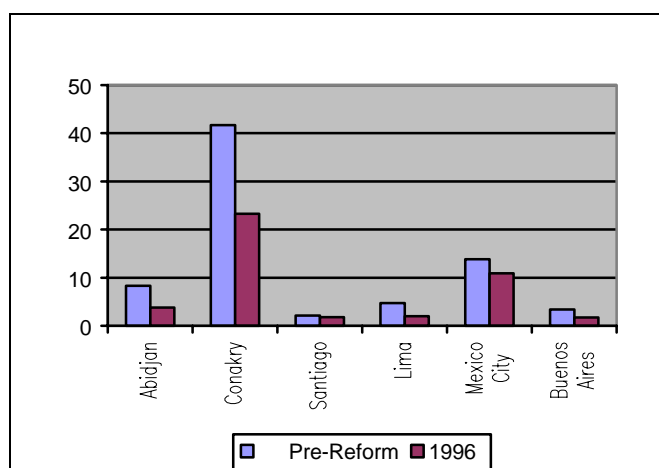


Figure 6: Employees per 1,000 connections before and after reform.

⁷ The methodology used to calculate the welfare effects of reform is described in Galal, Ahmed, Leroy Jones, Pankaj Tandon, and Ingo Vogelsang, 1994. *Welfare Consequences of Selling Public Enterprises: An Empirical Analysis*. New York, Oxford University Press. We were unable to perform the cost-benefit analysis for Abidjan and Mexico City due to insufficient data.

that, had it met the targets proposed in the concession contract.⁸ Consequently, even if a private operator had missed the targets by a significant amount, the gains from implementing the concession contract would have been larger than what was achieved under public ownership.

Lessons

Private Sector Participation.

Although private sector participation was not the only factor encouraging improved sector performance – and performance improved significantly in Santiago without it – private sector participation did result in improved performance, even in weak institutional environments. Most notably, the largest per capita welfare gains occurred in Buenos Aires (see Table 3), which awarded a concession contract to a private operator. Further, in the other city that introduced significant private sector participation at the time of reform, Conakry, post-reform performance was far better than could have been expected under continued public operation. Under private operation, capacity more than doubled, water and service quality improved, and coverage expanded. Although the weak institutional environment reduced the magnitude of the gains, it is hard to see how public ownership would have improved the situation. The largest problem in Conakry – the high price of water – was largely due to non-payment by private consumers and the government. However, the public utility had been even worse at billing and collecting before reform than the private operator was following reform.

The experiences in Lima, Mexico City and Abidjan provide further evidence of the benefits of private sector participation. As noted above, in Lima, the total gains from reform were far smaller than the anticipated gains from a concession contract. In addition, although there was insufficient data to perform a cost/benefit analysis for Mexico City, other performance indicators suggest that limited private sector participation in Mexico City resulted in only small gains (see Table 3). Finally, the continued strong performance of the private operator in Abidjan further demonstrates the long-term benefits of private sector participation, even in a weak institutional environment.

In summary, although private sector participation is likely to be more successful when regulation is strong and the government cannot renege on its contractual obligations, the case studies suggest performance gains are possible even under difficult conditions. Although private operators might find it harder to improve sector conditions under these conditions, public operators appear to perform even worse.

Regulation

Although performance improved in the cities that introduced significant private sector participation (i.e., Conakry and Buenos Aires), performance also improved significantly in Santiago, where private sector participation was not introduced. In this subsection, we discuss one plausible reason for this – improved regulation. Before plans to privatize the operator were abandoned, the Chilean Government introduced a regulatory model designed to provide credible regulation under private operation. The regulator was powerful, independent, politically insulated and guided by detailed laws that left little room for discretion (see Figure 5). Further it paid salaries that were above civil service norms and its staff was regarded as honest, professional and competent. Although these regulatory characteristics are important when the reform introduces private sector participation, the Santiago case study demonstrates the importance of strong regulation even when the operator remains state-owned.

Broadly speaking, there are at least two issues when designing regulatory institutions. First, the government should insulate the regulator from political pressure. This can be done in various ways, including making the regulator's revenues independent of the budgetary process (e.g., financing the regulator through sector fees), preventing government officials from firing the regulator except under clearly defined conditions, and making the appointment of regulators independent of the political cycle. Second, the government needs to design institutions to prevent private operators from "capturing" the regulator. Clearly defining regulatory procedures and opening regulatory proceedings to the public can reduce the likelihood of capture by making it harder for the private operator to put pressure on the regulator. Table 5 provides a brief description of regulatory institutions in each of the case study countries.

Although formal rules can protect a regulator from both political interference and capture, it is difficult to do this when there are few checks on arbitrary government action. For example, if the regulator can not rely upon judicial support for its decisions, the private operator will have little incentive to follow the regulator's rulings. Similarly, if the judiciary is dependent on the executive, regulatory independence might not be adequate protection against government expropriation. In several cases, the contracts tried to provide substitutes for weak domestic institutions. For example, the private operator in Guinea could appeal to an international organization in disputes with the government. However, in the absence of an independent judiciary, international institutions cannot enforce

⁸ See Alcázar, Xu and Zuluaga (2000).

decisions if they rule against the government. In practice, therefore, this was not an effective way of resolving disputes. Instead, the private operator chose not to use this mechanism and, disputes were resolved, or often not resolved, through informal negotiations between the government and the private operator.

Although, it is hard to design contracts and regulation to resolve problems created by weak institutions, the cases suggest some actions that can improve regulation even when it is difficult to restrain arbitrary government action or punish misbehavior by the private operator. In particular, institutions should be designed so that:

- i. The regulator can compel the private operator to provide relevant information.
- ii. Regulatory responsibilities and powers are not divided between competing agencies.
- iii. Regulatory procedures are transparent and are open to interested parties, including consumer groups.

Authority to compel the private operator to provide information. Informational asymmetries between the regulator and the private operator were a major problem in our case. All of the contracts we studied provided for the operators to report regularly on their performance and most had fines for failure to do so. Despite this, the private operators routinely failed to provide the information required in several cases. In Guinea, the private operator consistently failed to provide the public regulator with required information in a timely manner. Most notably, it failed to separate its accounts for regulated and non-regulated functions, despite contractual obligations to do so. This made it difficult to assess whether the large price increases in Conakry were allowing the private operator to earn monopoly rents.

The experience from our cases suggests that the contract between the private operator and the government should spell out informational requirements in detail and prescribe penalties for non-compliance. The information should allow regulators to judge performance on contractual agreements (such as new investment or quality of service). In addition, private operators should provide accounts that separate regulated activities (e.g., water supply) from unregulated activities (e.g., infrastructure projects implemented for the government). When the private operator is responsible for operations in several urban areas, accounts should be produced by city or region, allowing the government to assess how large cross-subsidies between regions are. Enforcing these rules would have been hard in some of the case study cities, but it would help if penalties for non-compliance were spelled out in detail and applied automatically. For example, price increases and contract renegotiations might be refused until the private operator complies with its obligations. In addition, in some of the cases, bank supervision missions were able to help regulators press for better information (e.g., in Guinea).

To be able to use this information to monitor and enforce the contract, the public regulator needs to be staffed with sufficiently skilled workers. In the case studies in this project, the regulator was adequately staffed only in Santiago (see Table 5). Attracting well-qualified workers can be difficult under civil service pay structures, especially in small, poor countries, where well-qualified personnel might not be interested in working for the public sector. Although it is difficult to solve problems related to human capital, the cases suggest several steps that governments can take to minimize them. First, regulators should be able to pay above usual civil service standards. Allowing the regulator in Chile to do this meant that it could attract essential personnel more easily. Second, regulators should be given well-defined and narrow responsibilities. In several cases, the regulators were assigned additional non-regulatory responsibilities, aggravating the shortage of human capital. For example, in Peru, the regulator was responsible for promoting and strengthening water companies, in addition to regulating them. In Guinea, the public enterprise responsible for monitoring the contract with the private operator was also responsible for planning and implementing investment. Third, by reducing regulatory discretion (i.e., by having well-defined procedures), countries can reduce the informational burden on regulators and the operator's motivation for pressuring the regulator. For example, the price setting procedure in Chile is relatively automatic and is detailed in law, leaving the little room for the regulator to tinker with the outcome.

Clear delineation of responsibilities. Even when regulators are politically independent, dividing regulatory responsibility between several agencies can lead to inefficient outcomes. The case studies suggest that problems caused by overlapping responsibilities are worse in weak institutional environments. In these situations, disagreements between competing government agencies delayed decisions and increased uncertainty for the operator, who needed to get permission from several agencies with different priorities and competing visions. When they were competing regulators, individual agencies' responsibilities changed over time as their political power rose or fell. This prevented regulators from building the skills needed to monitor the operator and impeded information flows. It is telling that the regulators who were unable to provide us with the information needed to perform the welfare analysis were in the two cities where public sector responsibilities were divided between several agencies (Mexico City and Abidjan).

Although conflict between public agencies was a problem in several case studies, the problem was most severe in Côte d'Ivoire, where several public agencies were responsible for different aspects of sector policy. At the time of reform, responsibility for supervising and monitoring investment, which was implemented and planned by the private operator, was transferred between government agencies. However, the old agency remained responsible for monitoring the contract with the private operator and negotiating tariff changes, powers that it used to interfere with investment decisions. The transfer, and the different skills and priorities of the two public agencies, meant that the private operator had to negotiate with two squabbling agencies. This, in turn, slowed sector development and created considerable tension. Although problems appear to have been resolved, at least partially, by the late 1990s, divided and overlapping responsibilities interfered with sector operations for close to eight years.

Since many World Bank projects involving private sector participation in the water sector include components designed to set up an independent regulator, task managers need to be aware of the problems created by divided regulatory responsibilities. In particular, although allowing the ministries and agencies responsible for the sector before reform to keep control of some aspects of sector policy might reduce opposition to reform, this can create problems in countries with weak bureaucracies. For example, a new regulator was created in Peru in preparation for private sector participation. However, existing agencies continued to be active in the sector.

Transparent procedures. Although none of the cases scored high on openness, the experience from developed countries suggests that transparent regulatory procedures, where interested parties, including consumers, have a carefully delineated role in regulatory decision-making, can reduce the likelihood of regulatory capture by the operator and make political interference more difficult for the government. When procedures are non-transparent, it is difficult for the public to assess whether price increases are valid. For example, in Buenos Aires, after revenue from charges for the secondary network were lower than anticipated, the company asked to renegotiate the contract. However, the regulator and the private operator failed to reach agreement due, in part, to partisan disagreement among members of the regulatory board. Ultimately, the impasse was broken through the intervention of two Federal ministries. The partisan debate, and the political settlement, contributed to public disillusionment with the concession and to a general sense that the public was not protected against arbitrary price changes.

One way to avoid these problems is to restrict the regulator's discretion. To the extent that the regulator follows well-documented and transparent procedures, the public will be able to assess the reasons for price changes. Although limits on regulatory discretion and transparent procedures will be unlikely to fully protect the company or consumers in weak institutional environments, it makes political intervention or regulatory capture by the private operator more obvious and increases pressure of the operator to comply with informational requirements.

Metering

Metering is usually justified by the observation that when the marginal cost of water is high, metering can encourage consumers to reduce waste. In several of the cases, most notably Lima and Mexico City, metering is probably justified for this reason alone. In the other cities, the cost of raw water was low and water consumption was below the sustainable level of abstraction. However, metering can be beneficial even when raw water is cheap and plentiful, as the experience in Santiago illustrates. First, it increases the information available to regulators and makes it easier to assess investment needs. Second, metering gives consumers control over their bills, reducing opposition to price increases and allowing consumers to reduce their bills by fixing leaks and curbing wasteful consumption. Finally, metering can increase price transparency, making changes appear less arbitrary. Although metering does not immediately eliminate non-transparent pricing, tariffs based on consumption can reduce it.

Competition

The high cost of pumping water long distances and laying pipes means that water distribution is a local business. Further, since duplicating costly pipe networks is inefficient, water supply is likely to remain a local monopoly. Therefore, it is not surprising that direct product market competition, other than tolerating water vendors (Mexico City, Abidjan and Conakry) and allowing self-supply (Abidjan and Conakry) was rare in the case studies. However, competition can be introduced in other ways – most easily through allowing bidding over contracts.⁹

Bidding was not widely used in the case studies. In Santiago and Lima, plans for introducing private participation were abandoned (at least temporarily) and public operators remained responsible for sector operations. In Côte d'Ivoire, where the private operator had been active for nearly 30 years, the government decided not to bid the contract, instead negotiating a 20 percent real price reduction with the existing operator. Further, reform reduced the

⁹ Another possibility is to encourage 'yardstick' competition. London Economics (1998), *Competition in Water*, Paper prepared Department of International Development, London, estimates that the minimum efficient scale is about 500,000 people.

amount of bidding for investment projects. Although the government remained responsible for financing investment (i.e., the contract was a lease not a concession), the private operator could implement most maintenance and small investments without having to follow formal bidding procedures. Several observers suggested that the private operator used this to break large investments into small parts and favored small investments over larger projects when planning investment.

In the other cases, the governments invited bids for the contracts, although competition was muted even then. One consistent problem was that only five large international companies were actively involved in bidding for large contracts at the time. Further, these companies often joined into consortia to bid for single contracts (e.g., four French firms joined into two consortia to bid for the contract in Conakry).

Renegotiation after the completion of bidding – a common problem in water contracts in developing countries – was also a problem in several cases. For example, the concession contract in Buenos Aires was awarded to the company that proposed the largest price cut. However, after failing to meet several investment targets, the private operator negotiated an agreement that raised prices and reduced the operator's contractual obligations, in return for lower connection charges. Although contract renegotiations may be inevitable, and can benefit consumers and the government as well as the private operator, they can lead to strategic bidding, where the private operator bids low anticipating future renegotiations.

Several steps can be taken to enhance competition. First, encouraging bidding will improve the regulator's information and can lead to reduced prices. Given that the market for contracts to operate water systems in developing countries is relatively thin, removing criteria for tender that restrict smaller or less experienced private operators might be beneficial. Breaking large systems into several smaller parts might allow smaller operators to participate, as well as allowing yardstick competition. Second, the government can reduce the likelihood of renegotiation by spelling out criteria for renegotiation in the contract. In addition, regulatory proceedings and contract renegotiations should be conducted as transparently as possible. If consumer groups are allowed to play an active role in renegotiations, charges of strategic behavior will be lessened. When renegotiations are conducted behind closed doors or bypass standard regulatory procedures, it will be difficult to convince skeptical observers that the partners are acting in the best interest of consumers.

Reducing non-payment by the government and other consumers

One of the largest problems in the African case studies was non-payment by the government. In both African cases, the governments, which accounted for over 25 percent of consumption, failed to pay their water bill consistently. Non-payment by the Government contributed to the high relative price of water in both African cases (see Figure 5). Although the private operator in Conakry could cut off non-paying agencies, in practice it chose not to, fearing retaliation. It is difficult to deal with non-payment by the government in weak institutional environments, but some steps can be taken. First, during contract negotiations, the government and the private operator can draw up lists of the agencies that can not be cut off for non-payment (e.g., hospitals) and those that will be cutoff automatically. Although the private operator might still be wary about cutting off public agencies, placing a list in the contract might reduce pressure to maintain service to all agencies. Second, in other infrastructure sectors, payment has been secured through international guarantees (e.g., from donors) or by making sources of funds such as oil revenues hostage to the agreement. Similar actions could be taken in the water sector. Finally, greater publicity about the burden that non-payment places on sector development could increase public pressure for government to meet its obligations.

Table 3: Performance indicators before and after reform.

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
Year of Reform	1987	1989	1989	1992	1993	1993
Situation before Reform	Lease ¹	Government Ministry ²	Autonomous Public Entity	SOE	Fragmented management delegated to several agencies of municipal government	SOE
Type of Reform	Lease ¹	Lease	SOE	SOE	Service Contract	Concession
Prices						
Price below long-run marginal cost before reform	No	Yes	Yes	Yes	Yes	No
Unaccounted for Water ³						
Pre-Reform	13%	60% ⁴	34%	42%	47% ⁵	44%
1996	16%	50%	20%	36%	37%	34%
Service Quality						
Pre-reform	Cutoffs rare. Water quality good.	Frequent cutoffs, water non-potable	Occasional Cutoffs	Frequent cutoffs, Low pressure	Poor water quality in some areas	Occasional cutoffs, Low Pressure
1996	No Change	Water potable, cutoffs rare.	Improved pipe maintenance	Same	Same	Improved Water pressure Cutoffs reduced

¹ Before reform, lease contract with some characteristics of management contract – compensation for utility was based upon projected consumption. After reform, lease contract gave private operator greater responsibility in planning and implementing investment and compensated private operator based upon actual consumption. ² Formally, utility was autonomous agency. In practice, it operated as if it were part of the Ministry of Natural Resources and Environment. ³ Unaccounted for water (UFW) is the differences between volume of water distributed and water sold. It includes physical losses from pipe breaks and overflows and commercial losses from illegal use and unregistered connections. ⁴ Estimates of unaccounted for water varied between 35 and 60 percent. Based upon the experience since reform, we believe that the higher estimates were more reasonable. ⁵ Estimates varied between 37 and 47 percent.

Table 4: Welfare Effects of Reform in case studies

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
Year of Reform	1987	1989	1989	1992	1993	1993
Welfare Gains from Reform						
Total Domestic Gains (million 1996 US\$)		\$23	\$284	\$43		\$1419
Government		8	241	40		-169
Consumers		16	4	57		1388
Workers		0	39	-55		43
Domestic Investors		0	1	0	12	160
Gains per Capita (1996 US\$)		\$12	\$64	\$6		\$150

Table 5: Regulatory Characteristics after Reform

	Buenos Aires	Lima	Mexico City	Santiago	Abidjan	Conakry
Delineation of regulatory responsibility	Separate agency.	Separate agency but under same ministry as company.	Three municipal agencies regulate quality, contracts & bill collection.	Separate agency	Four supervisory agencies plan and manage investment, debt, and supervision of contractor	State enterprise regulates & decides investment.
Autonomy & insulation from political interference	Has budget autonomy, but under political board.	Has budget autonomy but no political insulation.	No autonomy or political insulation.	Regulator's autonomy protected by legal status. High political insulation.	No autonomy or political insulation.	No autonomy or political insulation.
Power, & if powerful, discretion.	High nominal power, but bypassed in contract renegotiations. Recent fines, pricing decisions overturned. High discretion.	Low power.	Low power.	High power but subject to appeal. Little discretion.	Low power.	Low power.
Staffing skills	Inexperienced but improving	Weak.	Weak.	Strong	Split among many agencies.	Very weak.

THIRSTING FOR EFFICIENCY: THE POLITICS OF WATER REFORM; EFFECT OF REFORM ON PERFORMANCE OF URBAN WATER UTILITIES

By George Clarke, World Bank

1.

Water's Innate Characteristics Make State Control Politically Attractive

- **Essential good** = politically visible
- **Sunk and durable assets** = prices can be below cost without short term effects; credibility hurdle
- **Local monopoly** = subject to government regulation

2.

Reform Decision

- Is reform politically desirable? Do the political costs outweigh the political benefits?
- Is reform politically feasible? Can the decision makers overcome opposition and implement reform?

3.

Answer depends on

- Sector conditions
- Macroeconomic and political changes
- Political institutions

4.

Sector Conditions Determine:

- Scope for improvement?
- Who will benefit?
- Who will lose?

5.

Macroconditions

- Political -- Is there a regime change or coalition shift?
- Economic -- Is there hyperinflation and/or a recession?

6.

Political Institutions Determine

- Who are the veto players?
- Who are their constituents?
- Is government credible?

7.

Case Studies of the Political Economy of Reform in Three Countries

Reform Decision:

- Buenos Aires - Concession
- Lima - Concession
- Mexico City - 3 Stage Management Contract

8.

Sectoral Conditions

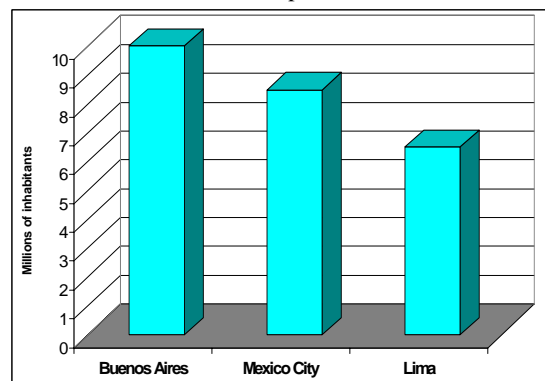
9.

Initial Conditions: Organization of Sector

	Buenos Aires	Mexico City	Lima
Single Service Provider?	Yes	No	Yes
Corporatized?	Yes	No	Yes
Corporate control	Central Govt.	Municipal Govt. (but Centrally appointed)	Central Govt.

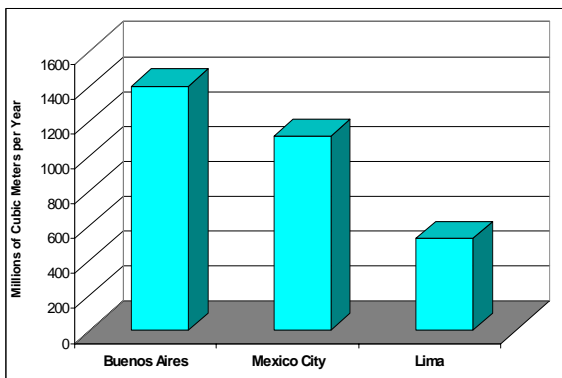
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Initial Conditions: Population Pre-Reform



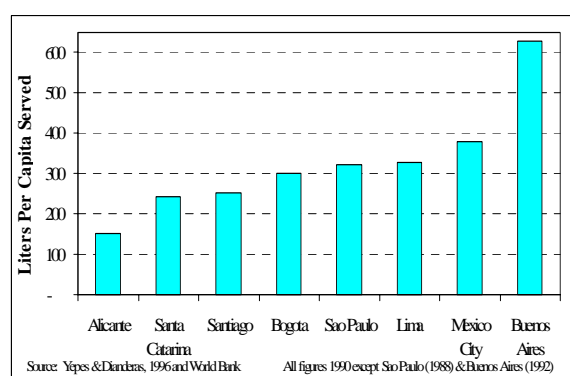
11.

Initial Conditions: Water Production Pre-Reform

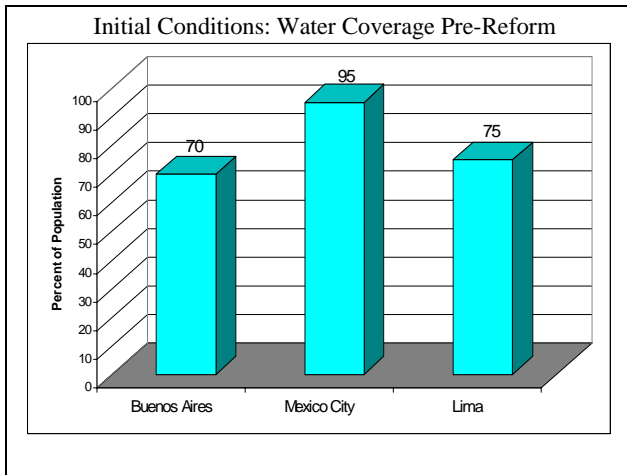


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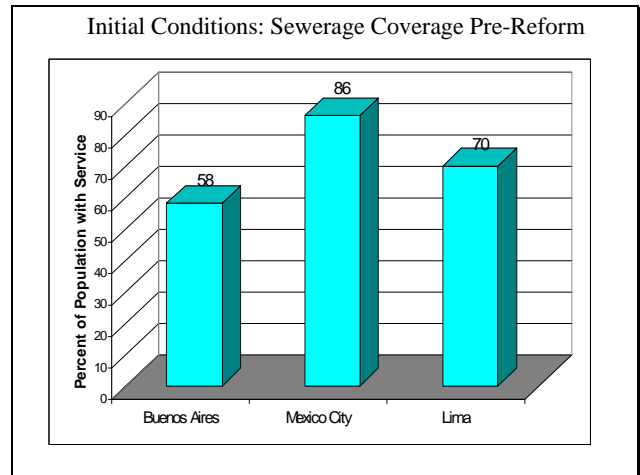
International Comparison: Water Production Per Capita Served



13.



14.

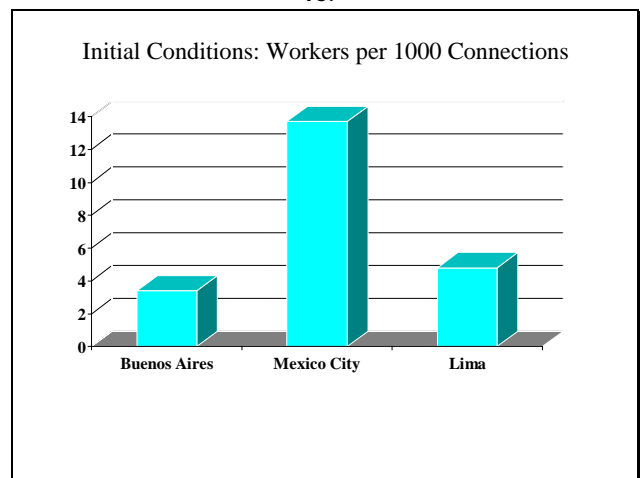


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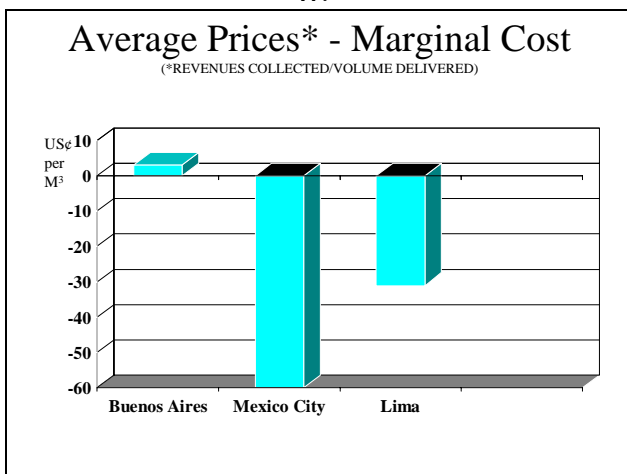
Initial Conditions: Quality of Service

Buenos Aires	Mexico City	Lima
POOR: Some cutoffs, low pressure	FAIR: Low pressure, Poor quality & cutoffs in some (poorer) areas	VERY POOR: Frequent cutoffs, low pressure

16.



17.



18.

TWO CASES WITH HIGH OPPORTUNITY COST OF USAGE

<p>MEXICO</p> <ol style="list-style-type: none"> 1) Wells (60%) depleting aquifer causing city to sink (7.5M SINCE 1900) 2) Extraction 35% > replenishment 3) Alternative source 127 km away & 1,200 m below the city 	<p>PERU</p> <ol style="list-style-type: none"> 1) 2/3rds of water from polluted river 2) 1/3rd from wells contaminated By salt 3) 48% connected get service < 12 hrs/day; 28% < 6 hrs/day
--	---

19.

Sectoral Conditions: Summary

	Buenos Aires	Mexico City	Lima
Coverage	Poor	High	Poor
Service Quality	Poor	Fair	Very poor
UFW	High	High	High
Consumer price/ Cost	Good	Very Low	Low
Labor Productivity	High	Very Low	Fair

20.

Macro Political and Economic Conditions

21.

Macro-Conditions: Opportunities for Change

Depends on:

- Regime Change or Coalition Realignment -- new veto players with constituents who have different interest in water reform
- Fiscal pressures reduce benefits of subsidizing water system

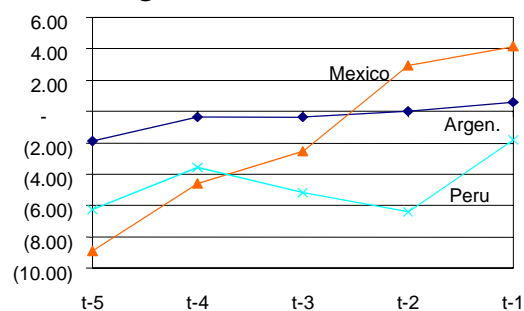
22.

Macro-Conditions Opportunities for Change

	Regime Change	Start of Reforms
Buenos Aires	1989	1993
Mexico City	1988* <small>*coalition shift</small>	1993
Lima	1990	1993

23.

Macro-Conditions: Budget Deficit as % GDP



24.

Political Institutions

25.

Political Institutions: Opportunities for Change

Depends on:

- Who are the veto players?
- Who are their constituents?
- Is government credible?

26.

Effects of Political Institutions

	Buenos Aires	Mexico City	Lima
Dominant executive?	YES	YES	YES
Beneficiaries are key constituents or swing voters?	YES Middle class (swing) & poor through expansion	YES Construction companies (campaign donations)	YES(weak) Benefits from macro-stability & growth
Opponents are key constituents or swing voters?	NO Labor opposed but could not switch	YES Strong labor opposition & poor & mid. class Urban (price increase)	YES Poor & middle class would be hurt by price rises.

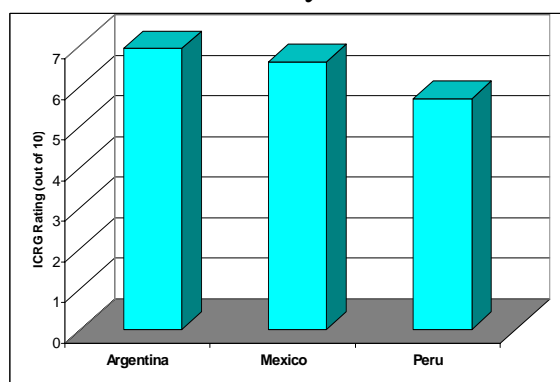
27.

Political Benefits from Full Privatization

	Buenos Aires	Mexico City	Lima
Potential benefits from private investment	HIGH	LOW	LOW

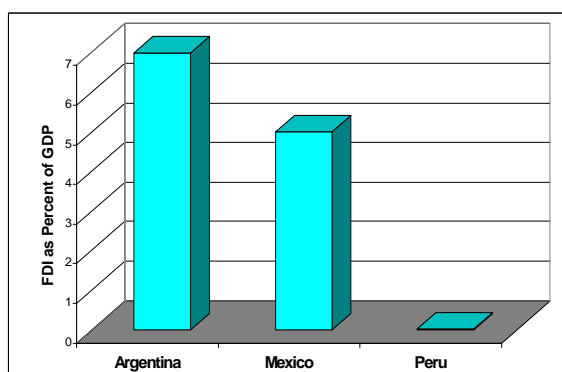
28.

Credibility:ICRG



29.

Credibility: FDI/GDP (%)



30.

Outcomes: Extent of PSP

	Buenos Aires	Mexico City	Lima
Planned	Concession	Manage. Contract	Concession
Current Situation	Concession	Service contract	State ownership

31.

Outcomes:

What Actually Happened?

Lima

- Mild improvement in performance triggers higher aid and reduce pressure for reform.
- Govt. first postpones privatization for 1995 election then decides to postpone "indefinitely".
- Investment in expansion up but maintenance down

Reasons include:

- Investment required by concession agreement was enormous (\$3 Billion)
- No financing mechanisms in place to help poor pay higher costs.
- Sale would raise no funds for Treasury

32.

Outcomes:

What Actually Happened?

Mexico City

- Rapid execution of early stages (Census & Metering) which increases information.
- Slower implementation of metered billing
- Government picks responsibilities to be carried out by contractors rather than full stage as per contract.
- No significant restructuring of sectoral structure.

Reasons:

- Political battle for city leads government to shelve reform
- New municipal government with national ambitions

33.

Outcomes:

Effects of Political Institutions

	Buenos Aires	Mexico City	Lima
Contract locked government into regulation?	PARTLY	NO	NO
Power decentralized to city?	IN 1994	IN 1996	NO

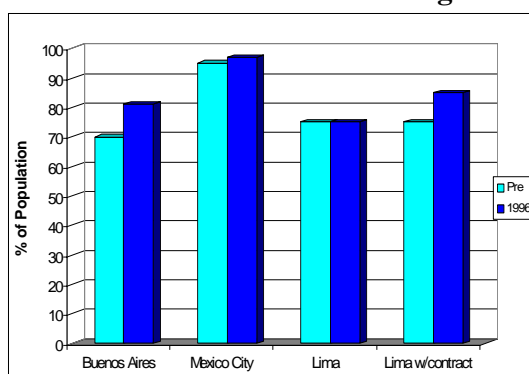
34.

Outcomes: Regulation

	Buenos Aires	Mexico City	Lima
Regulator politically insulated?	NO	NO	NO
Objective tariff?	YES, BUT DISPUTED	NO	NO

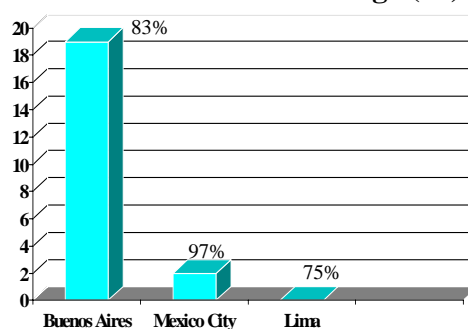
35.

Outcomes: Water Coverage

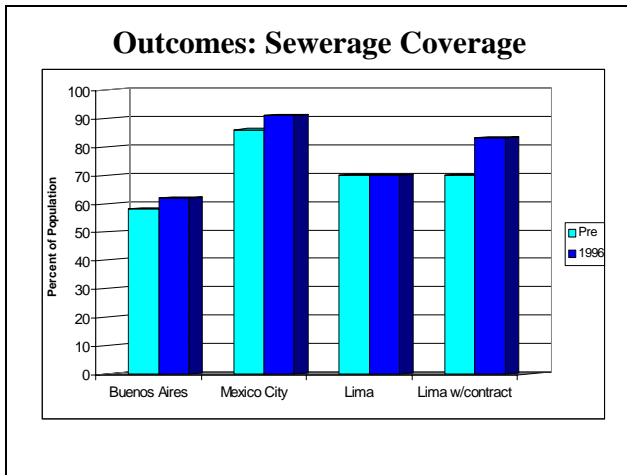


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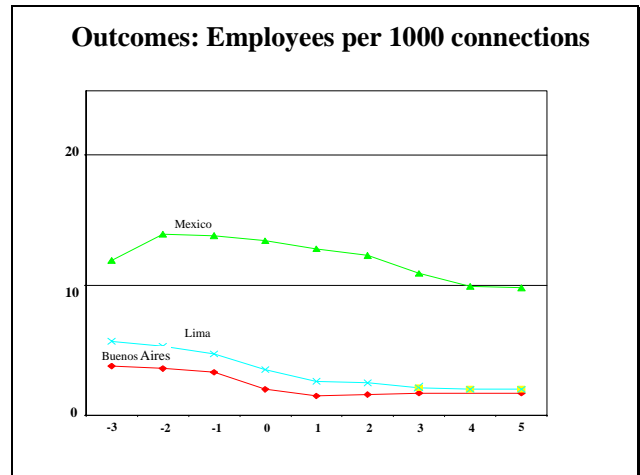
Outcomes: Increase in Water Coverage (%)



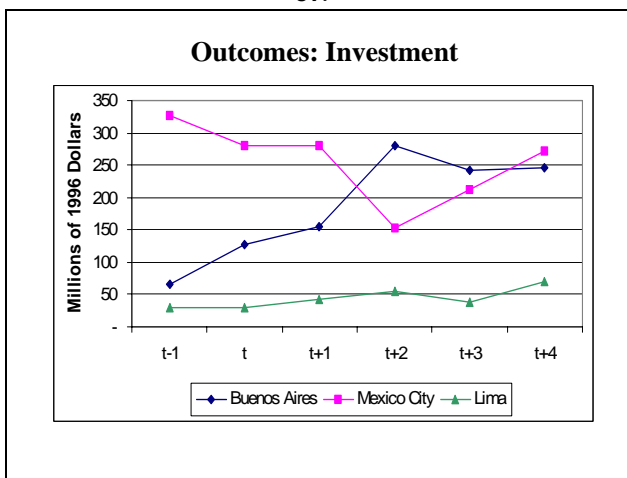
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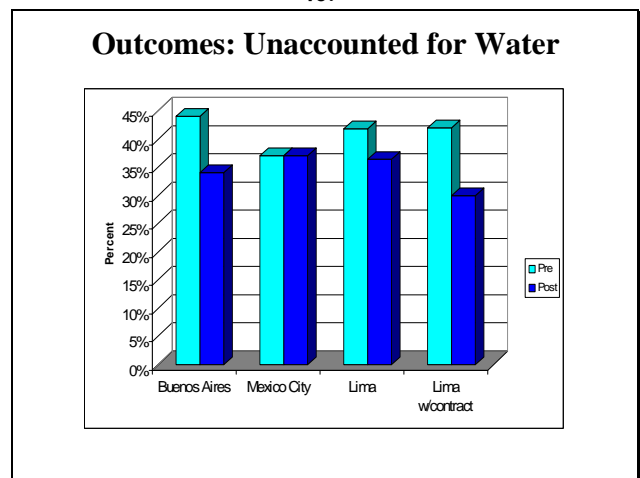
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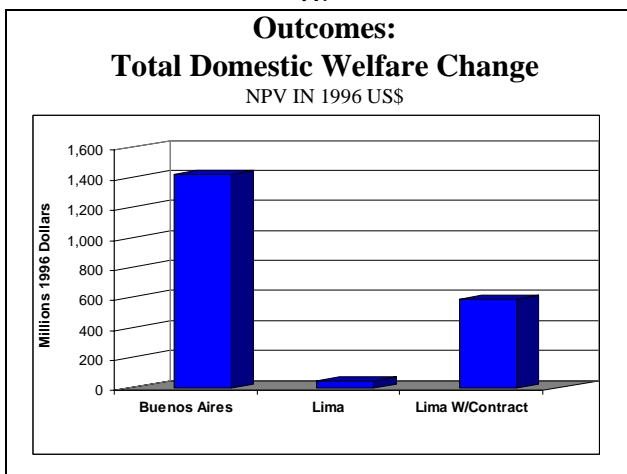
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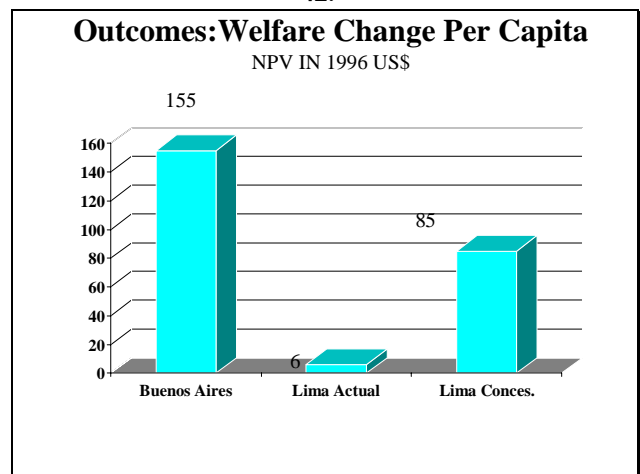
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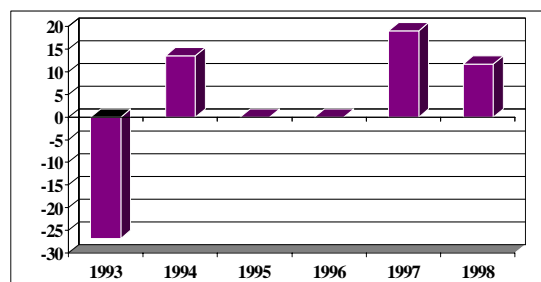
43.

**Buenos Aires:
What Could Have Been Done Better?**
Some problems can be avoided or reduced:

- Sense of unfairness
 - Lumpy price increases
 - Divergent interests of consumers
- Sense of powerlessness
 - No metering
 - Flat bills,
 - Poor consumer information

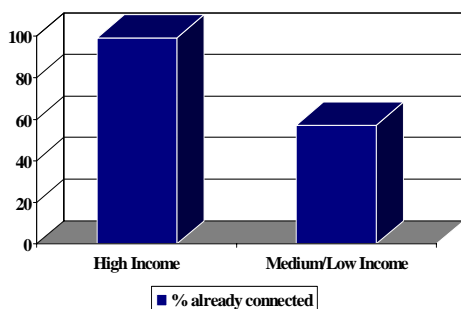
44.

Buenos Aires: Lumpy price changes



45.

Buenos Aires: Divergent Interests of Consumers



46.

**Buenos Aires:
Divergent Interests of Consumers**

- Infrastructure and connection charges (1995): \$1,107-\$1,528 over 2 years
- 18% household income for low income consumers

47.

**Buenos Aires:
Powerless Consumers**

- Metering = 1% connections
- Flat tariff based on:
 - location
 - area
 - square meters of construction
 - type of construction (low budget to luxury)
 - age of construction

48.

Conclusions

In ALL cases reform was positive leading to:

- Gains in information
- Gains in service quality
- Growth in Connections
- Improvement in billing

However.....

49.

Conclusions

Gains from reform are significantly higher where Government:

- carefully assesses the key sectoral problems to be solved (short & medium term)
- designs contracts with Private Sector operators to meet these needs
- ensures alignment of incentives with goals
- enhances competition for or in the market

50.

Conclusions

Political benefits high & political costs low in Argentina

- No large price rise necessary initially
- Increase in efficiency nearly guaranteed due to poor performance of SOE
- Large investment shifted to private sector

51.

Conclusions

Political costs were greater than the political benefits in Mexico City and Lima

Reasons

- High marginal cost of water
- Employees constituents of veto player in Mexico
- Credibility low in Peru

52.

Conclusions

- Information asymmetries serious problem for regulation. Better flow of information critical to success.
- Consumer or other interests not involved in planning. Significant scope for participation in reform design.

53.

Conclusions

- Affordability of connections serious problem. Consider payment arrangements to smooth cost over time.
- Cost & benefits considerations on metering need to include the benefits of consumer information/control over usage.
- Opportunities for competition not used -- bidding often not exploited; yardstick competition not used.