Working Paper

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Working Paper number 58 October, 2009

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The International Policy Centre for Inclusive Growth is jointly supported by the Poverty Practice, Bureau for Development Policy, UNDP and the Government of Brazil.

Working Papers are available online at www.ipc-undp.org and subscriptions can be requested by email to ipc@ipc-undp.org

Print ISSN: 1812-108X

PRIVATISATION AND RENATIONALISATION: WHAT WENT WRONG IN BOLIVIA'S WATER SECTOR?[1]

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ABSTRACT

This paper investigates the concentration of access to safe water across income levels in Bolivia. In particular, it focuses on how privatisation has changed coverage, affordability and the concentration of access to water on the part of the poor. We compare the performance of cities in which the service was privatised (La Paz and El Alto) with a city in which it is managed as a cooperative (Santa Cruz de la Sierra) and one where the service is publicly provided (Cochabamba). We examine the pre- and post-privatisation periods. Close inspection of the household surveys reveals that access to water by low-income consumers increased in the periods when the service was provided under private concessions. Coverage has expanded significantly in the bottom quintiles of the population in the cities where water was privatised, and thus access to water is more equitable. The state, however, renationalised the water utility. What went wrong, then, in Bolivia's water sector? The answer is that the private concessionaire failed to meet the targets stipulated in the concession contract. The tariff increases required for full cost recovery eventually led to public outrage that forced the government to terminate the contract.

JEL Classification: L95, L33, L43, I39.

Keywords: access to water, poverty, privatisation, utility regulation.

1 INTRODUCTION

According to the *Human Development Report 2006* by the United Nations Development Programme (UNDP), over 1 billion people in the world live in extreme water deprivation. The report also stated that "not having access to water and sanitation is a polite euphemism for a form of deprivation that threatens life, destroys opportunity and undermines human dignity" (UNDP, 2006: 5). International concerns about access to water have long been acknowledged. One of the Millennium Development Goals (MDGs) is to halve the proportion of people without access to safe drinking water by 2015.[2]

Access to water is a right in itself and also contributes to the achievement of the seven other MDGs. It reduces child mortality and combats disease. It empowers women by freeing them from the burden and dangers of carrying water, and it brings about higher schooling rates: children often skip classes because of illness or because they are helping their mothers to fetch water. In rural areas, moreover, access to water can help eradicate hunger by improving crop irrigation.

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Safe access to water is defined as "the availability of at least 20 litres per person per day from an improved source within 1 kilometre of the user's dwelling" (WHO and UNICEF, 1990). This is the minimum required for drinking and hygiene. When bathing and laundry are included, the consumption threshold reaches 50 litres a day.

Not only is quantity of water consumption important; so too is the distance from the water source. It is women and children who are mostly hurt by the long distances travelled and the heavy weight of water (Costa et al., 2009). For instance, a household with five members, living strictly on the water poverty line and 1 kilometre from the water source, requires 100 litres to be carried daily. The several trips involved and the hours consumed in this hard physical work often force households to consume below the water poverty line. Additionally, this places constraints on the amount of time that adults can dedicate to income-generating activities. Consequently, the vicious circle of disease, poor education and low human development remains unbroken.

From a human development perspective, having access to improved water sources is the most favourable objective. "Improved" means water in enough quantity, of reasonable quality and as close to the dwelling as possible. Piped water, through in-house connections, is the sort of access that best fulfils the improved water requirements. The quality of the water from a utility provider is the most reliable, and the per unit price from utility companies is cheaper than that from alternative sources (UNDP, 2006; Israel, 2007; Komives, 1999). For the water utility, the marginal cost of delivering water to an additional (already connected) household is minimal. Usually, where a water grid exists, the greatest barrier for the poor is the connection fee.

Water privatisation has been a polemical topic in Latin America, leading to a series of political debates, protests and even riots.[3] This paper aims to contribute to the growing literature by evaluating the performance of the water sector under private concession in Bolivia. We chose Bolivia because of the early termination of privatisation contracts and the renationalisation of the water sector in the cities of La Paz and El Alto. In other large Bolivian cities, water utilities operate differently: as a cooperative in Santa Cruz, and by means of public provision in Cochabamba.

The research in this paper is guided by three questions. Did privatisation increase access to safe water for the poor in Bolivia? How affordable was water during the period of privatisation? And why were the private contracts terminated early?

Close inspection of the household surveys reveals that, under private concessions, low-income consumers' access to water increased. Coverage has significantly expanded, particularly for the bottom quintiles of the population. We certainly see an improvement in equitable access to water. These findings suggest a successful privatisation. But there is more to the story. When the concession contracts were drafted, the government and the private company agreed on targets for wider coverage. The targets were to install 71,752 new water connections in La Paz and El Alto by December 2001, with 25 per cent of the target being reached annually. This goal entailed universal coverage in La Paz and 82 per cent coverage in El Alto.

The private company successfully increased coverage in the poorest areas, mainly because high-income areas already had high coverage rates. It made sense to expand services in the poorest areas in order to meet the targets set in the contract. But the company failed to meet the targets. The limits of cost recovery had been reached. Those who could afford the tariffs and connection fees had already been covered, and there was no longer an opportunity

to exploit further provision on a cost-recovery basis. When the company pushed against the limits, the result was public outrage. Eventually, failure to meet the legally binding targets and public anger prompted the government to terminate the contract and renationalise the utilities.

The rest of this paper is structured as follows. Section 2 introduces the general debate on water sector privatisation and discusses water pricing. It also describes the water sector in Bolivia. Section 3 outlines the methodology and data used in the empirical analysis. The results in Section 4 are split into three parts: analysis of coverage expansion along the income distribution curve; the concentration of access to water; and trends in water expenditure after privatisation. The renationalisation of the Bolivian water sector is discussed in the concluding remarks of Section 5.

2 WATER SECTOR PRIVATISATION: THE DEBATE

Private participation in the provision of basic utilities can take several forms (Table 1). In the water sector, the most popular form consists of concession contracts. Governments maintain ownership of the infrastructure and, through a public bidding process, transfer to the private sector the responsibility for management, service provision and investment during a concession period. When the contracts expire, the responsibilities of provision return to the public sector, ideally with improved management and infrastructure.

TABLE 1

Forms of Private Participation in the Water Sector

Form of contract	Term length	Private companies' responsibility[b]	Asset ownership	Investment duty
Service	1-2 years	SS	public	public
Management	3-5 years	M,O	public	public
Build-Operate-Transfer (BOT)	by product[a]	SC	public	private
Build-Operate-Own (BOO)	by product[a]	SC	private	private
Lease	10-20 years	M, O	public	public
Concession	20-30 years	M, O, I	public	private
Partial divestiture	unlimited	M, I, R	mixed	mixed
Full divestiture	unlimited	M, O, I, R	private	private

Source: Prepared by the authors.

Notes: [a] The contract does not follow a specific deadline but instead is completed upon the successful delivery of the product. [b] SS: specific service; M: maintenance; O: operations; SC: infrastructure-specific construction; I: investment; R: revenue collection.

Private participation in the water sector involves risks and uncertainties. Exceeding the expected costs poses construction risks; uncertainty about demand raises commercial risks; high interest rates and exchange-rate volatility generate financial risks; an uncertain regulatory environment creates regulatory risks; and, finally, political instability and asset expropriation are political risks (see Bayliss, 2009). Risks and uncertainties increase the cost of capital in poor developing countries relative to rich ones. Advocates of privatisation thus argue that, to achieve the desired rates of return, the private sector requires higher average tariffs in order to participate in the market (Estache, 2006).[4] Nevertheless, if the public sector operated well in the pre-privatisation period, few structural adjustments are needed and the transaction costs

and risks are minimised. Transparency before the concession is also said to lessen expectations and risks, and it helps win political support and the confidence of final consumers. But the rule of thumb should be this: given the aforementioned risks, there is no need for privatisation if the utility is operating well.

As Estache (2006) observes, Latin America's experience has shown that building support, as opposed to simply reforming by decree, is crucial to the effectiveness of reforms: without popular support, privatisation might lead to conflict. Protests against water privatisation had already happened in Cochabamba, Bolivia, in 2000; they led to Uruguay's Water Referendum and Constitutional amendment in 2004; and they were evident during the World Social Forum in Caracas in 2006.

Regulation has been advocated as a necessary bargaining process that strikes a "balance between providing private companies with the incentives to invest and operate efficiently, and protecting the interests of other social and economic actors" (Rees, 1998: 8). A strong regulator is seen as desirable to reduce the risks for private investors, as well as to protect consumers' interests as regards the concession commitments on coverage expansion, investment targets and price levels. Sound regulation also makes the concession bid more competitive by attracting more private bidders.

Supporters of privatisation argue that private sector participation improves water provision because it brings large investments in maintenance, network expansion and excellence in delivery. Managerial efficiency stems from higher rates of bill collection, a smaller number of personnel and lower rates of unaccounted-for-water (the water lost between production and delivery). Those who advocate privatisation regard the public sector as naturally inefficient: (i) utility monopolies ignore competitive market incentives; (ii) public companies are subject to short-run political interventions; and (iii) they are accountable to their own (government) interests rather than to final consumers, who are left with few channels to voice their demands. Moreover, supporters believe that if investments target low-income and undersupplied areas, privatisation will foster development and have a positive distributional impact (Kikeri and Nellis, 2004).

There is scepticism, however, about whether profit-oriented concessionaires really invest in expanding coverage. Apart from operational efficiency, there is no reason to believe that private monopolies will serve users better than public monopolies. In fact, the contrary may be true if regulation is not enforced—which is the case in most developing countries. When they face inelastic demand, private monopolies have more incentives than a public monopoly (with a social planner) to undersupply, increase prices, underinvest and provide poor quality services.

Sceptics argue that because of a lack of market incentives, concessionaires will not expand the water grid to low-income areas (Bayliss and Kessler, 2006). Serving the poor is hardly profitable for the utility: the high rate of illegal connections and the low purchasing power of households in slum neighbourhoods hinder cost recovery and discourage private investment. Companies therefore tend to withdraw from non-profitable geographical markets. Moreover, governments might perform poorly in their new role as regulators, particularly if privatisation is a novel experience. For instance, the enforcement mechanisms might not be sufficient to make the private utility comply with contractual obligations. Additionally, private companies might capture the regulatory agency, thereby preventing governments from fulfilling their regulatory role.

Another possible negative effect of privatisation concerns inequality. Reducing companies' staff entails job cuts, which mostly affect the poor and the middle classes (Birdsall and Nellis, 2003). In addition, privatised utilities often remove "illegal connections" and force poor households off "free" piped supply. The search for profits requires full cost recovery; this tends to increase water tariffs, affecting the poor harshly and directly (Dagdeviren and Hailu, 2008).

2.1 WATER PRICING AND THE POOR

There are three main reasons why poor households lack access to piped water: the network utility does not reach their neighbourhood;[5] they cannot afford the initial investment in the network connection; or they do not have enough monthly income pay for the services.

Poor households without access or a connection to the water grid have to rely on alternative sources of water such as pipe trucks, private wells, kiosks and bottled water. Paradoxically, the private alternative market overcharges. Its per unit price of water is five to ten times higher than the price charged to households provided with in-house piped water (UNDP, 2006; Israel, 2007). For the poor, water bills can easily surpass the affordability threshold of 3 per cent of their total income.

The water supply chain in the private alternative market has several stages: collecting water at the source (usually a tap connected to the utility network); filling bottles or containers; and distributing water to a vendor or "reseller". This will eventually bring water to final consumers in the suburbs and slums, using pipe trucks, donkey-drawn carts or even bicycles. The quality of the water, of course, is not guaranteed.

There are various ways of offering safe water connections to poor households. Progressive block tariffs can be set according to geographical regions, consumer category, or quantity consumed. Individual consumers pay according to their own characteristics, in contrast to the flat rate, whereby all users face the same tariff. In a geographical block tariff scheme, households in rich areas subsidise the consumption of those in poorer neighbourhoods. High-income consumers pay tariffs that are higher than the cost of providing water, while their low-income counterparts pay less than the cost.[6] Another method is the consumer category scheme, which differentiates tariff blocks between household consumers, industrial consumers and others. The quantity scheme sets progressive tariffs according to the volume of water consumed (Whittington, 1992).

Progressive block tariffs are only efficient if the poor households are in fact connected to the utility network. If they are not, such tariffs can harm the poor even further. Vendors usually resell tapped water collected from the utility network. In a quantity block scheme, vendors take large amounts of water from the utility to store and resell. The poor who re-buy this water end up paying the higher block tariffs. The high initial cost of water is passed on directly to the poor, together with the value added in the supply chain between the water source and the final consumer. Hence the price of water in the utility determines the benchmark prices for vendors and has a significant impact on poor households, even if they are not connected to the utility network.

Another issue is the sustainability of cost recovery. The poor are harmed by full cost-recovery schemes, particularly as regards connection fees or higher tariffs, and thus universal access to water is hampered. Full cost recovery compromises the expansion of network provision to low-income areas. Often, insufficient demand among low-income groups

will not cover the fixed costs. Providing water only to households that can afford it is unprofitable for firms, and thus low-income neighbourhood tends to be unsupplied (Brown, 2009). If the water utility is not obliged to expand the water grid, or if legal enforcement fails, poor households will remain excluded from access to piped water.[7]

Lower tariffs from greater operational efficiency in utilities are unlikely to benefit the poor. There is little evidence of lower water prices after privatisation. Obligations to shareholders and the taste for profit make it difficult to reduce tariffs. Often, governments increase prices before privatisation in order to make the utilities more attractive to the private sector.
A way of trying to minimise tariffs to final consumers is to use a low-tariff bid scheme in the tender for the utility. The concession is granted to the company willing to provide the services at the lowest cost.

2.2 THE WATER SECTOR IN BOLIVIA: PRIVATISATION AND RENATIONALISATION

During the 1990s, with the support of the World Bank and foreign donors, privatisation was regarded as a convenient solution in contexts of deteriorated infrastructure and unbalanced public finances. Privatisation of the water sector was attempted in La Paz, El Alto and Cochabamba, three large Bolivian cities.[8] The first private sector participation contract in the water sector was signed in 1997. The world's largest water consortium, Lyonnaise des Eaux, won the concession for water and sewerage provision in La Paz and El Alto through the company Aguas del Illimani (AISA). According to the concession contract, ownership of the assets remained public. The form of private participation was a concession contract for 30 years.[9] The concession bid was based on the highest number of new connections to be installed.

La Paz, the country's capital, and its rapidly growing neighbour El Alto, comprise the largest metropolitan centre in Bolivia, with over 1.4 million people. The wealthiest households are in the valley region of southern La Paz, while lower-income households are in El Alto and on the *laderas* (steep slopes) of La Paz. The landscape, as well as residential segregation by income, determine the provision of basic utilities. Poor neighbourhoods, often located on hills or close to other geographical barriers, are harder to reach, and thus the costs of installation and maintenance are higher.

The private concession contract in La Paz and El Alto stipulated that in-house connection was the only accepted type of water provision. The concessionaire was not obliged to provide water by alternative means, such as community standpipes, pipe trucks