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The French Model and Water Challenges in Developing Countries: Evidence from Jakarta and Manila

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Abstract

Despite the growing need for private sector participation (PSP) in the water sector, private sector investments in the water sector have experienced a downturn in recent years, especially concession projects, which accounted for nearly 80 percent of all PSP projects in urban water utilities from 1990 to 2005. This paper traces the concession to its origin—the French model—and focuses on the challenges of transferring the model into the context of developing countries, by comparing two cases of concession projects in Jakarta and Manila. This comparative analysis suggests that although the French model appears a compelling choice because of its promise of attracting capital investments and improving efficiency, successful applications of the model may require substantial modifications to its original form in order to adapt to prevailing legal and social norms as well as to local governance capacity.

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Introduction

Private sector participation (PSP) in the water sector has experienced a downturn in recent years (Marin 2009; Araral 2009). According to the World Bank's Private Participation in Infrastructure (PPI) database, private investment in the water sector fell to US$29 billion between 2001 and 2010, after a peak of $58 billion during the previous decade. The rapid decline in the number of concession projects, which accounted for nearly 80 percent of all PSP projects in urban water utilities between 1990 and 2005, is arguably the single most critical factor contributing to the setback of PSP in water sector: the size of investments committed to concession projects has also declined sharply, from about $1.6 billion in 1995 to only about US$127 million in 2009. Much attention has shifted to water treatment plants, whereas private investment in water utilities has contracted threefold. Some high-profile cases of early terminations of PSP projects since 2000—in Puerto Rico in 2003; in El Alto and La Paz, Bolivia, in 2005; and in Buenos Aires, Argentina, in 2006—have been worrisome, especially given that these projects had been in operation for a long period before termination, thus raising concerns about long-term sustainability of PSP projects in water sectors in developing countries.

The urgency of the water crises that led to privatizations during the 1990s remains unchanged to the present day: 37 percent of the world's population lack improved sanitation facilities, and 780 million people still use unsafe sources of drinking water sources (UNICEF and World Health Organization 2012). In developing countries, the political difficulties of raising water tariffs, coupled with inefficiencies in government-owned water utilities, have trapped water systems in many cities within a vicious cycle of low tariffs and poor services. Because PSP will certainly continue to be among the few options available to municipalities in many developing countries for meeting the demands of rapidly growing urban populations, it is of paramount importance to understand where, when, and how PSP projects in the water sector can still be successfully implemented.

The dominant models of PSP in the water sector have originated from developed countries such as France and the United Kingdom, and challenges inevitably arise in transferring these models into the variety of contexts encountered in developing countries, where operating environments may be very different. Legal and social norms as well as governance capacity vary from country to country, such that successful applications of existing models may demand substantial modifications to the forms commonly used in their countries of origin. Yet deviations from their original forms may distort the intrinsic logic and operating mechanism of these models, leading to failures to capture the expected benefits. The success and failure of PSP in the water sector thus may depend critically upon the nature and extent of modifications and alterations made while transferring existing models to new contexts.

This paper focuses on difficulties in implementing concession projects in developing countries. In origin, concession projects can generally be traced to the "French model," whereby private water utilities provide water supply and sanitation services to municipalities or similar areas under long-term concession contracts (Chéret 1994; Foster 2005). Discussion here focuses on the challenges encountered in transferring the French model into the context of developing countries, by comparing two cases of concession projects in Jakarta and Manila.

Facing similar challenges, both Jakarta and Manila adopted the French model of concessions to dealing with water challenges in mid-1990s. But considerable differences emerged, not only in the ways in which the model was adapted to the cities' different circumstances but also in the consequences of water privatization for both cities. In the years since privatization came into effect in Jakarta in 1997, the price of water has risen to be among the highest in Asia (Jakarta Water Supply Regulatory Body 2009), yet water services remain poor: only about 43 percent of Jakarta has water connections, and households who do have connections have water only two-thirds of the time. Manila, in contrast, has seen a

significant increase in coverage, reduction of non-revenue water (NRW) distribution, and improvement in water quality (Marin 2009; Wu and Malaluan 2008).

Why have applications of the same model in these two cities resulted in such dramatically different outcomes? Our comparative analysis suggests that while the case for adopting the French model might be equally compelling in either case, successful applications of the model may have hinged upon substantial deviations from its typical forms, tailored to suit formal institutions and informal structures (such as norms and social practices) on the ground. Specifically, our findings point to three leading factors in successful private sector participation in water utility concessions in developing countries: the importance of the design of concession contracts, the institutional capacity in water sector, and the involvement of consumers and the general public in improving the performance of concession contracts.

The French Model: Origins, Potentials, and Pitfalls

France is a global leader in PSP in the water sector. Private companies provide more than 75 percent of the country's population with water and about 40 percent with sewerage service (Haarmeyer et al. 1998). Three French conglomerates (Veolia, Suez, and SAUR) are dominant players on the world stage, capturing 70 percent of the international private water market.

PSP in the water sector in France itself can be traced to the nineteenth century (Kraemer 1998). Because France has many small municipalities (about 36,000), it would be enormously expensive, as well as inefficient, for each one to run its own water utility (Clark and Mondello 1999; Hukka and Katko 2003). Municipalities are also prohibited by law from selling their water and sanitation assets to private companies (Brown, Stern, and Tenenbaum 2006). As a result, under traditional French concessions the state owns these assets, but the private operator manages and has full control over them until the end of the concession period (Guislain and Kerf 1995). This arrangement was thought to act as a constraint on the private sector, both in terms of ownership and in contractual terms. Nevertheless, over the years such contracts have come to be modified so as to allow private operators to build and finance large infrastructure projects that can be transferred to the state at the end of the concession period. The concessionaire may be regulated by the public authority that awarded the concession and to a lesser extent by that authority's supervising agencies. In the main, however, the contract is thought to be self-regulating, known as "regulation by contract" (Groom, Halpern, and Ehrhardt 2006), on the assumption that the litany of service standards and obligations will regulate compliance. Any variation to the contract is a matter between the two parties, a matter for mutual negotiation.

In contrast, under the "British model," originating in the United Kingdom, regulators may be highly independent and have discretion to set tariffs and service standards. Their independence means that the regulators can make decisions without consulting the government and, furthermore, that these decisions cannot be overruled other than by a court (Brown, Stern, and Tenenbaum 2006). It is believed that discretionary regulation can play a role in curbing private sector opportunism and in representing consumer interests, whereas competition is contained by the bidding processes under which companies compete, both to win the initial contract and to have it renewed (Gómez-Ibáñez 2003). This mechanism can be described as "competition for market."

From this rudimentary historical perspective the French model offers two main advantages. First, self-regulation and technocratic excellence may take the "politics" out of policies, sometimes considered as a normative virtue for governments (Peters 1996). This "small government" structure is considered appealing as a matter of fiscal prudence. The second advantage stems from economies of scale associated with large and highly competent private operators that are capable of providing high-quality service at a lower price.

The French model also has several shortcomings. In France the report of the Cour des Comptes, the official audit body, in 1997 cited a lack of competition, lack of transparency, corruption, water price rises, and unequal powers (*Cour des Comptes* 1997, cited by PSI 2000). In practice, the only real bargaining chip the municipality has is the threat of return to direct management (Hukka and Katko 2003).

The concession contracts scheme for managing the water sector has been increasingly adopted in recent years in many developing countries, particularly in large cities because of the large investments required to meet increasing demands due to urbanization, along with shortages in fiscal budgets. In this connection it should be noted that the primary form of the French model as applied in France itself is actually lease-affemage contracts, under which private water companies have a limited role in capital expenditure. Concession contracts as commonly implemented in developing countries are thus fundamentally different from those most widely employed in France, because these countries generally need to draw private investment to help fund infrastructure and services. It is ironic that although challenges in handling tariff increases in order to cover capital expenditure are often the root cause of failure for concession contracts in developing countries, the French model as applied in France can offer little by way of empirical experience to resolve the problem.

Water Privatization in Jakarta

Water supply services in Jakarta had suffered from poor service and high losses before privatization in the mid-1990s. PAM Jaya, the government-owned water utility, could provide piped water connections to only 41 percent of its population (10 million), and non-revenue water (NRW) loss had risen to 57 percent (Lanti 2006). Quality of service was also poor: about 30 percent of consumers with piped water connections received water less than 24 hours a day. During the 1990s the government decided engage PSP in its water/sanitation provisions in hopes of injecting significant investment into the sector at a point when PAM Jaya's financial condition was not sufficiently viable to obtain large loans from the banking sector to finance expansion of services (Tutuko 2001).

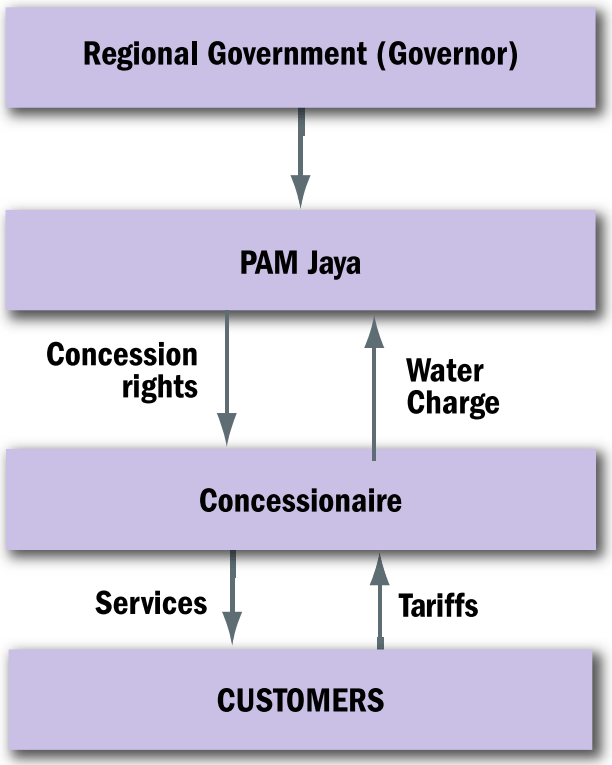
In 1997 the municipal government of Jakarta signed cooperation agreements with two consortia, one comprised of Suez Lyonnaise des Eaux and a local company, Garuda Dipta Semesta (GDS), and the other comprised of Thames Water Overseas Ltd. and a local company, Kekarpola Airindo (KATI), to operate Jakarta Raya waterworks and sewerage system for 25 years. Under the cooperation agreements, the two private water companies were expected to invest a total of $318 million to expand the pipeline network over the first five years, serving 70 percent of the metropolitan population by adding 1.5 million customers to the piped water system. In addition, the proportion of unaccounted-for water was to be reduced from 50 percent in 1998 to 35 percent by 2002.

No regulatory agency was established during the first three years after the private operators took over. On the basis of the operating principle of the French model, it was believed that the concession contracts themselves would be sufficient to govern the implementation of the agreements and that the two contracting parties—the government and the private operators—could rely on legal mechanisms to adjudicate in the instance of disagreements. From this standpoint no regulatory agency was deemed necessary (Figure 1).

However, two crucial deviations from the norm of the French model came into play in Jakarta that may have undermined the efficacy of its application. First, the concession contracts were awarded without competitive bidding, leaving little chance for the government and consumers to reap any efficiency gains from "competition for the market," a key premise of the French model. Although the lack of competitive bidding might not be surprising (the two foreign companies had partnerships with businesses closely tied to then President Suharto—Thames with Sigit Harjojudanto, Suharto's eldest son;

and Suez with Salim Group, a close ally of Suharto— it may have been responsible for the highly lucrative return that these companies enjoyed from their investments: an internal rate of return (IRR) of 22 percent for the duration of the contract.

Figure 1: Institutional Structure in Jakarta pre-2001



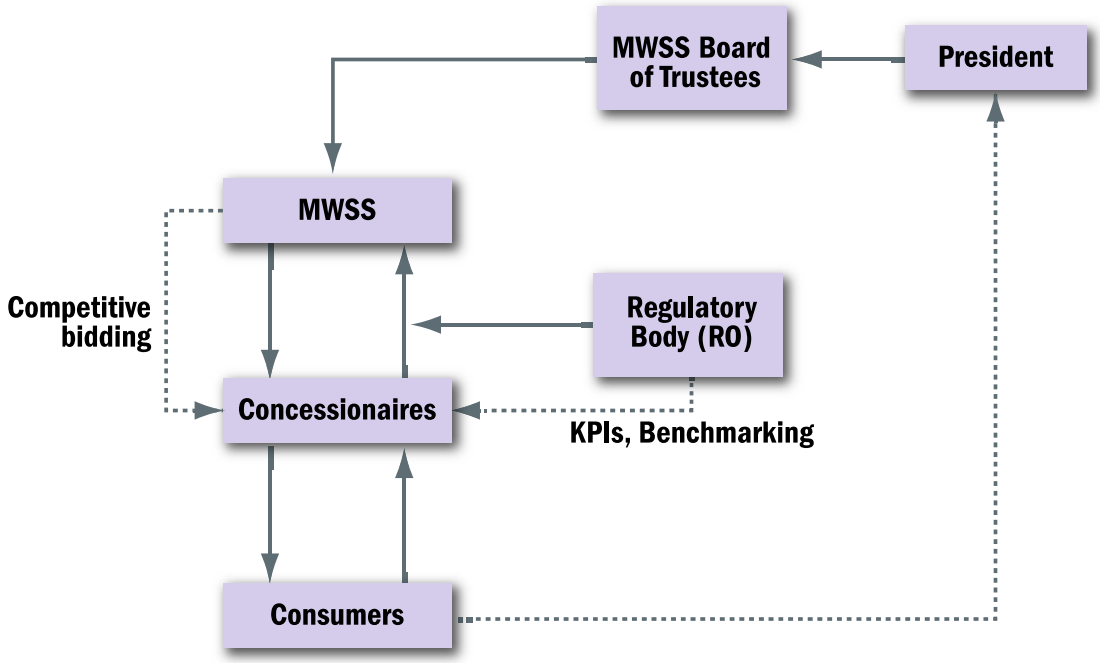
The second deviation from the standard French model was Jakarta's introduction of a water charge as its tariff mechanism. A water tariff is the price charged to consumers; a water charge is the unit cost (per cubic meter) of providing water determined by the need for full-cost recovery and the need for investment return (22% IRR), together representing the financial obligation of government to the concessionaires based on the concession agreements. It could be argued that the introduction of a water charge helps to de-politicize the rate-setting process and provides government with more flexibility in the timing of rate increases. But the use of a water charge also effectively shields private operators from any revenue risks due to difficulties and uncertainties surrounding tariff increases, because the government is responsible for any shortfalls in the case that water tariff falls below water charge.

These deviations from the French model soon proved to be deadly. A month after the contracts were signed, the Asian financial crisis of 1997 began to unravel the Indonesian economy, and anti-Suharto riots erupted nationwide. After Suharto stepped down, there was mounting pressure to cancel the contracts, but the Habibie government, concerned that a fight with two major multinationals would scare off future foreign investors, decided to renegotiate the concession contracts. When the cooperation contracts were renegotiated, the links with the two local companies were severed, and the two

reconstituted concessionaires were renamed Thames PAM Jaya (TPJ) and PAM Lyonnaise Jaya (PALYJA).

Under the new contract, or so-called Restated Cooperation Agreement (RCA), targets for coverage and leakage reduction were significantly reduced; the financial crisis made the original targets highly unrealistic. Between 1998 and 2001, because of the crisis, the Provincial Government of DKI Jakarta had decided not to introduce any tariff increase, although the water charge, adjusted every semester in accordance with inflation, continued to rise (Lanti 2006). More importantly, the new contract set forth a radical departure from the French model: the Jakarta Water Supply Regulatory Body (JWSRB) was created in November 2001, four years after the initial contracts were signed (Figure 2). The establishment of JWSRB indicates that the self-regulation inherent in the "pure" French model was an insufficient safeguard for the implementation of concession contracts in a major city in a developing country.

Figure 3: Institutional Structure in Manila



The establishment of this regulatory body, however, came too late to steer water privatization in Jakarta toward a more stable path. Under its mandates, JWSRB can recommend new water rates, monitor the Jakarta waterworks, and mediate disputes between PAM Jaya and the contracting private companies. It also can recommend rate increases, but because final decisions on increases are in the discretion of the governor of Jakarta, a number of cases have arisen in which the governor ruled against JSWRB's recommendations due to concerns regarding the political costs involved. JWSRB's effectiveness has also been constrained by its main role, which is to mediate disputes between the contracting parties, because

its function in such a capacity would be called upon only if there were disputes between the parties; it has rarely been called upon to perform such a role.

JSWRB's limited role in rate-setting is especially detrimental when contending with the gap between water charge and water tariff. Water tariffs were first increased in April 2001 (35%), and subsequently in April 2003 (40%) and in January 2004 (30%). An automatic tariff adjustment (ATA) mechanism was introduced in 2005 to increase the tariff automatically each semester (Lanti 2006). As a result, revenue collected through the water tariff exceeded the water charge after 2003. However, when the ATA expired in 2007, the government decided not to renew it , and there has been no further increase. The gap between water charge and water tariff began to grow rapidly, because the water charge continues to increase. According to a JSWRB , PAM Jaya and the Jakarta local government would accumulate a staggering Rp 18.2 trillion in debt if the contracts were to continue unmodified until 2022.

The predicament confronting the water system in Jakarta may not be surprising given the introduction of a water charge as a part of the tariff mechanism and incentive structure it has created. While much attention has been focused on the tariff change, as it is politically sensitive, the determination of the water charge has received much less scrutiny in comparison. Political leaders in Jakarta, the governor in particular, can score points politically by blocking initiatives for tariff increases, but a potentially countering force, the concessionaires, may not have any incentive to defend tariff increase initiatives, because their payment is calculated based on the water charge. PAM Jaya is indeed sinking deeper into debt as a result of the growing gap between water charge and water tariff, but these debts are eventually borne by the Provincial Government of DKI Jakarta.

In the years since water privatization, while Jakarta's price of water has risen to be among the highest in Asia, water services have remained poor: only about 43 percent of the city has water connections, and households who do have connections only have water two-thirds of the time. In fact, according to a recent study by JWSRB, average annual consumer growth after privatization is lower than that before the privatization.

Water Privatization in Manila

In January 1997, in what was known as the world's largest PSP deal, competitive bidding was held to privatize Metropolitan Waterworks and Sewerage System (MWSS), a government corporation responsible for water supply and sewerage service to all Metro Manila. As with Jakarta, this decision was driven primarily by concerns over a water crisis, due mainly to the inefficiency of MWSS and its failure to expand coverage for a growing population (Dumol 2000). By 1997 MWSS had only been able to supply water to about two-thirds of the residents in its service areas and to provide sewerage connections to less than 10 percent of households. Residents faced low water pressure and intermittent supply, an average of only 16 hours a day, and non-revenue water (NRW) stood at as high as 60 percent of total water distributed. MWSS had to rely on periodic government subsidies to service its debts (David 2000).

The Water Crisis Act was passed in 1995, providing then-President Ramos a one-year emergency power to address the looming water crisis, as well as a legal basis for the privatization of MWSS. There was little suspense in choosing a concession to privatize MWSS after the French Embassy provided a million-dollar grant to conduct a technical feasibility study (Dumol, 2000) The service areas of MWSS were divided into two zones: the concession contract for the West Zone was awarded to Maynilad, a joint venture between Suez Lyonnaise des Eaux and Benpres Holdings Corporation (controlled by the Lopez

family) and Manila Water, a joint venture formed by United Utilities, Bechtel, and Ayala Corporation, won the concession contract for the East Zone. Both contracts were set to last 25 years, with ambitious targets in improving supply continuity, drinking water quality standards, wastewater treatment, and water and sewerage coverage. The winning bidders took over MWSS operations on 1 August 1997. The water tariff obtained through competitive bidding was extremely low. For Manila Water, in the East Zone, the initial tariff was merely one-fourth of that charged by MWSS before the privatization (Table 1).

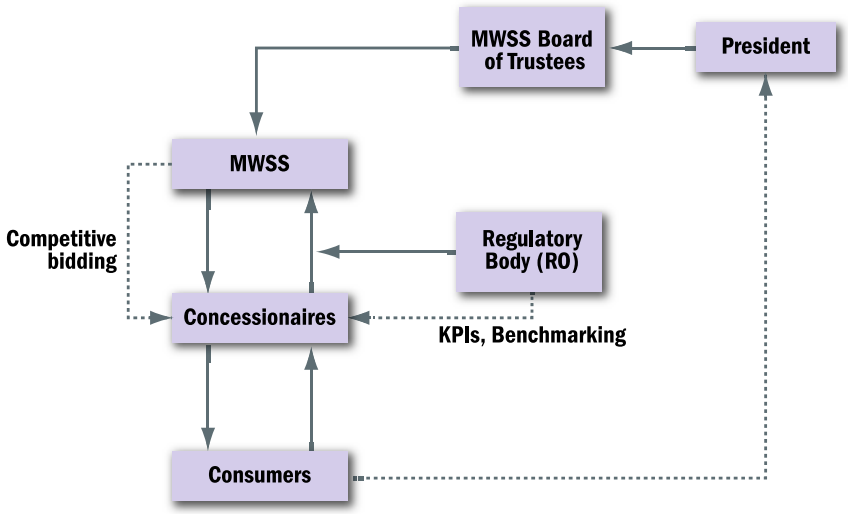
Table 1. Summary of rate bids, privatization in Metro Manila

MWSS Rate Per Cubic Meter, pre-Privatization		PhP8.56
	Percent Bids	**Peso Bids**
WEST ZONE		
Ayala–International Water	28.6333	PhP2.5140
Benpres–Lyonnaise des Eaux	56.5922	4.9688
Aboitix–Compagnie Générale des Eaux	56.8800	4.9941
Metro Pacific–Anglian Water	66.8998	5.8738
EAST ZONE		
Ayala–International Water	26.3886	2.3169
Benpres–Lyonnaise des Eaux	62.8800	5.5209
Aboitix–Compagnie Générale des Eaux	64.5080	5.6638
Metro Pacific–Anglian Water	69.7888	6.1275

Source: Dumol (2000)

Unlike in Jakarta, in the Manila privatization a Regulatory Office (RO) was set up right at the start, as a part of concession agreements (Figure 3). It consists of a chief regulator and four deputy regulators, each responsible for one of the four functional departments —technical, financial, customer service, and administration and legal matters—and today has about 60 employees. Its role at first, however, was minimal: to implement the agreement on rates and to monitor information, reporting, and audit provisions. The types and mechanisms for tariff adjustments are well specified in the concession agreements, and regulation seemed to be a routine and uncontroversial task.

Figure 3: Institutional Structure in Manila



There is little doubt that the RO is far from independent. Because it was established as part of the concession agreements, it has no legal or statutory independent status (Fabella 2006). The government initially considered the option of setting up an independent regulatory agency by legislation, but it was anticipated that more than a year would be required to complete the legislative process and build the political compromises necessary for passing the legislation, a delay that could potentially undermine the entire privatization process (Wu and Malaluan 2008). Instead, the contract provides that the Board of Trustees of MWSS, the asset owner and contracting party for the concession agreements, is to appoint the regulators, and RO's decisions require approval from the board. The Appeals Panel, an arbitration body likewise created under the concession agreements to settle disputes that cannot be resolved through consultation and negotiation, also exercises regulatory functions of an appellate character.

Despite the RO's lack of independence, the benefits of having a regulatory mechanism in place can be seen from the very beginning. In March 1998, less than a year after MWSS was privatized, Manila Water requested a rate increase of P 3.23 per cubic meter (an enormous amount, considering its bidding rate) under the Extraordinary Price Adjustment (EPA) clause in the concession agreement, based on an Appropriate Discount Rate (ADR) of 18 percent. The RO conceded that the 18 percent ADR in Manila Water's application was substantially higher than the ADR implied in its original bid of 5.2 percent (based on RO's calculation), and it granted P 0.04 per cubic meter, or only 6 percent of the increase sought by Manila Water. The dispute over the ADR was due to an ambiguity in a clause in the contract with regard to the determination of ADR, and its interpretation. Although the Appeals Panel ruled in favor of the claim made by Manila Water that the ADR be determined by current market (RO held that it should instead be determined by the rate implied in the original bidding, according to a sentence in the contract), the incident demonstrated that despite its many limitations the RO was strongly committed to protecting the integrity of the concession contracts.

The importance of including a regulatory mechanism when applying the French model was further illustrated in the RO's dealings with a nonperforming concessionaire. According to the concession agreements, rate rebasing exercises would be conducted every five years to determine any water tariff

changes necessary for the concessionaires to recoup their costs and earn a faire return while meeting the targets of service expansions and quality improvements specified in the contract. In the first rate rebasing exercise, the RO recommended a tariff of P 17.00 per cubic meter for Manila Water, slightly lower than the P 19.54 per cubic meter requested, and P 26.75 for Maynilad, substantially lower than the P 34.72 per cubic meter requested; this substantial cut was interpreted as suggesting that Maynilad's operations were grossly inefficient. Over acute contestations by Maynilad, this time the Appeals Panel ruled in favor of MWSS and upheld RO's decision. Having lost money from the outset and having failed to pay concession fees to MWSS since 2001, Maynilad declared bankruptcy in 2004, and MWSS had no choice but to take back the operation (Wu and Malaluan 2008).

Overall, the RO's role in the first rate rebasing demonstrated how a well-designed regulatory mechanism is essential for concessions, as "regulation by contract" under the French model may not be sufficient. Notably, the modest disallowances imposed on Manila Water, the more efficient operator, indicated that the RO was able to exert pressure on private sector operators in a monopoly position, in order to improve efficiency. The strategy of dividing MWSS service areas into two zones, which had been introduced during the design phase of the privatization plan, likewise seems to have paid off, as benchmarking allowed the RO to defend its technical assessments more rigorously against various accusations made by Maynilad. The rate rebasing also provided financial incentives for concessionaires to make necessary investments. The significant rate increases awarded to Manila Water allowed the firm to improve its performance substantially in NRW reduction and service expansion. On March 18, 2005, Manila Water was listed on the Philippine Stock Exchange as the first IPO in the Philippines after the onset of the Asian financial crisis. Since 2005 Manila Water has expanded its services to other cities in the Philippines, such as Laguna, Boracay, and Clark, as well as internationally.

Positive progress was also made in the West Zone, where Maynilad had failed. In December 2006 MWSS re-privatized Maynilad through a new round of competitive bidding, and a consortium including DMCI Holdings, Inc. (DMCI) and Metro Pacific Investments Corporation (MPIC) emerged as the new owners of the concession. The reconstituted Maynilad has made a profit since its first year in operation, , a feat it had not been achieved in seven years (1997–2004) under the ownership of Suez and Benpres, and NRW was reduced from 66% to 42% by the end of 2011. The turnaround of Maynilad implies that the regulatory mechanism established for water privatization in Manila has been able not only to evict an inefficient operator but also to provide the flexibility to furnish the affected concession with a more efficient replacement operator.

The completion of the first rate rebasing exercise also fundamentally altered the regulatory roles of the RO, which had used the concession agreements as its primary regulatory mechanism in dealing with the concessionaires as well as with other key stakeholders. Although the expansion targets and other NRW reductions specified in the original contracts might still be enforced, the tariff adjustments necessary for achieving those targets would increasingly become subject to discretionary decisions by the RO, based on "efficiently and prudently" incurred expenditures and a "reasonable" rate of return for concessionaires. The new challenge for the RO became how to exert pressure upon concessionaires to continuously improve efficiency without reverting frequently to a competitive bidding process.

The RO has responded to this challenge by introducing a system of key performance indicators (KPIs) and business efficiency measures (BEMs). These measures establish baselines that can be referred to in subsequent rate rebasing exercises and also will enable the agency to monitor concessionaires' performance continuously so as to avoid politically costly showdowns during rate rebasing exercises. The concessionaires have embraced these changes wholeheartedly, because staying on track with KPIs and BEMs minimizes the possibility of major unwelcome surprises during rate rebasing exercises. Most important, any potential adjustments to KPIs and BEMs can be made through negotiations with the RO

informally and on an incremental basis, rather than in forced reconciliations of differences during politically charged rate rebasing exercises. In practice, the targets for KPIs and BEMs have been based primarily on proposals made by the concessionaires themselves and in that sense might be presumed "realistic and feasible."

By 2011, fifteen years after the privatization, water service coverage had increased from around 60 percent in 1997 to 99 percent in the East Zone and 93 percent in the West Zone, especially impressive given that the population of Manila increased by 25 percent during the same period. Much of that expansion of services occurred in economically distressed areas, directly benefiting the urban poor, who had formerly relied on more expensive water supply alternatives. Worker productivity in water system operations increased significantly after privatization. The number of staff per 1,000 connections dropped from 9.4 in 1996 to 1.3 for Manila Water and 2.2 for Maynilad in 2011. Both concessionaires managed to resolve over-employment from pre-privatization levels through early retirement programs, with little or no social disruption in the corporate setting.

Comparative Analysis of the Two Cases

The case studies presented above show that the French model has fallen short in areas where the assumed conditions of its conventional form were not satisfied, in particular, in regard to competition through the tender process (Table 2). In the case of Jakarta, deviation from the conventions of the model proved to be costly. The lack of competitive bidding, in conjunction with a high level of corruption, led to concession contracts guaranteeing a hefty return (22%) for private operators at the expense of the city's consumers as well as its government. As a result, the price of water in Jakarta is now among the highest in Asia, after Singapore and Hong Kong, and the Jakarta municipal government finds itself deep in debt. In comparison, the competitive bidding process adopted in Manila forced bidding consortia to lower profit targets in order to win contracts. Consumers and the city's government were given a chance to reap the benefits of "competition for market" as intended in the French model.

Table 2. A comparison of applications of the French model in Jakarta and Manila

	Jakarta	Manila
Deviations from the French Model	No competitive bidding Separation of water tariffs and water charges	Regulatory mechanism
Conformation to the French Model	No regulatory mechanism	Competitive bidding

Contract incompleteness has been a common problem in applying the French model, even in its original milieux, due to uncertainty about the future and the long-term nature of concession contracts; the problem becomes especially pronounced when the model is transferred to developing countries. There are often significant information gaps about network conditions. In the case of Manila, for example, the concessionaires found, only after they took over the utilities, that the network was in much worse shape than expected. In addition, weakness in rule of law in developing countries may expose concession contracts to opportunistic behaviors by private operators and political leaders alike. One result is that adjustments to contracts may be inevitable but difficult to implement. Contract incompleteness is another factor that makes adequate regulatory mechanisms an essential ingredient in any sustainable concession

arrangements. In the case of Manila, the government's establishment of the RO, a deviation from the "pure" French model, was a critical factor in dealing with contact incompleteness as well as with opportunistic behaviors. Although the RO's discretionary power was initially quite limited, the agency was not without teeth, as can be seen in its success in the dispute over ADR and in the first rate rebasing exercise. More importantly, the RO has gradually become transformed into a credible regulatory authority with increased capacity and with its development of new regulatory instruments such as KPIs and BEMs. In comparison, the need for a regulatory mechanism was largely overlooked in Jakarta's concession contracts, as it was believed that "regulation by contract" was sufficient—in fact, there was no regulatory agency in the first four years after the private operators took over. When JWSRB was eventually set up in 2001, the effort proved to be too little and too late, and JWSRB was never given a chance to function as regulatory authority.

Public resistance to tariff increases has often been a contentious issue responsible for the failure of water concessions in many developing countries. In the case of Jakarta, the strategy adopted to avoid this source of tension was the introduction of water charge, a deviation from the French model, to eliminate revenue risks for concessionaires. This deviation from the conventional model might in fact have helped to reduce tensions over the determination of the water tariff, but it merely postponed the problem by allowing a widening gap between water charge and water tariff to reach crisis proportions. More importantly, although the water charge is determined by the efficiency level and appropriate return, it has largely escaped scrutiny while much attention has been fixed on the water tariff. As a result, there is a lack of pressure for private operators to increase efficiency.

Concluding Remarks

The advantage of the French model has been increasingly challenged even in France, the heartland of private water concessions. In 2001, a corruption scandal in Grenoble led to re-municipalization of the water supply, and since then several municipalities, including Paris, have followed suit either by canceling concession contracts or not renewing them. A major criticism of the private water concessions is their poor value for the amount of money invested, as their water tariffs are higher than rates in publicly owned water utilities (Chong et al. 2006; Lobina and Hall 2007).

The comparative analysis presented here, of applications of French model in Jakarta and Manila, reveals a fundamental deficiency of the model: inadequate attention to need for regulation. On the premise of the "pure" French model, concession contracts themselves would be sufficient to govern the implementation of agreed-upon rates, services, and procedures, and no regulatory agency is deemed necessary. Yet it is unrealistic to expect that such contracts can be made to specify all possible contingencies, given changing circumstances over time. The problem of inattention to regulatory provisions in concession contracts is especially acute in developing countries, where the most appealing feature of concessions is that they attract private investments. Manila's establishment of the Regulatory Office, a deviation from the "pure" French model, was a critical factor in its success with municipal water concession contracts, and Jakarta's neglect in installing a regulatory mechanism proved to be a costly shortcoming.

But not all deviations from the conventional French model are equally favorable. "Competition for market," whereby companies compete with one another, both to win the initial contract and to have it renewed, is essential for the success of concessions. Jakarta introduced a major deviation from the model by awarding concession contracts without competitive bidding, even though, in the model, the bidding process is intended to reap the benefits of competition among different bidders. In France, where the model originated, the potential for genuine competition might be limited because of high market share

accruing to the three main French conglomerates (Veolia, Suez, SAUR) that participate in concessions for large infrastructure projects.

The findings from this competitive analysis of the applications of the French model in Jakarta and Manila have yielded several important policy implications. First, concessions will continue to be the primary form of private sector participation (PSP) in the water sector in developing countries, due to needs for capital investments and for improvements in efficiency. Our analysis points to the importance of appropriate institutional arrangements if such projects are to succeed. Second, many outstanding concession contracts are currently in operation, some of which are experiencing difficulties of one kind or another. Perhaps our analysis will shed light on potential improvements that could make these concessions sustainable. Third, the lessons from applications of the French model in developing countries may shed light on some inherent problems in the model itself and in turn inform applications in developed countries as well, including France.

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