

Strategic Considerations for Improving Water Sector Performance

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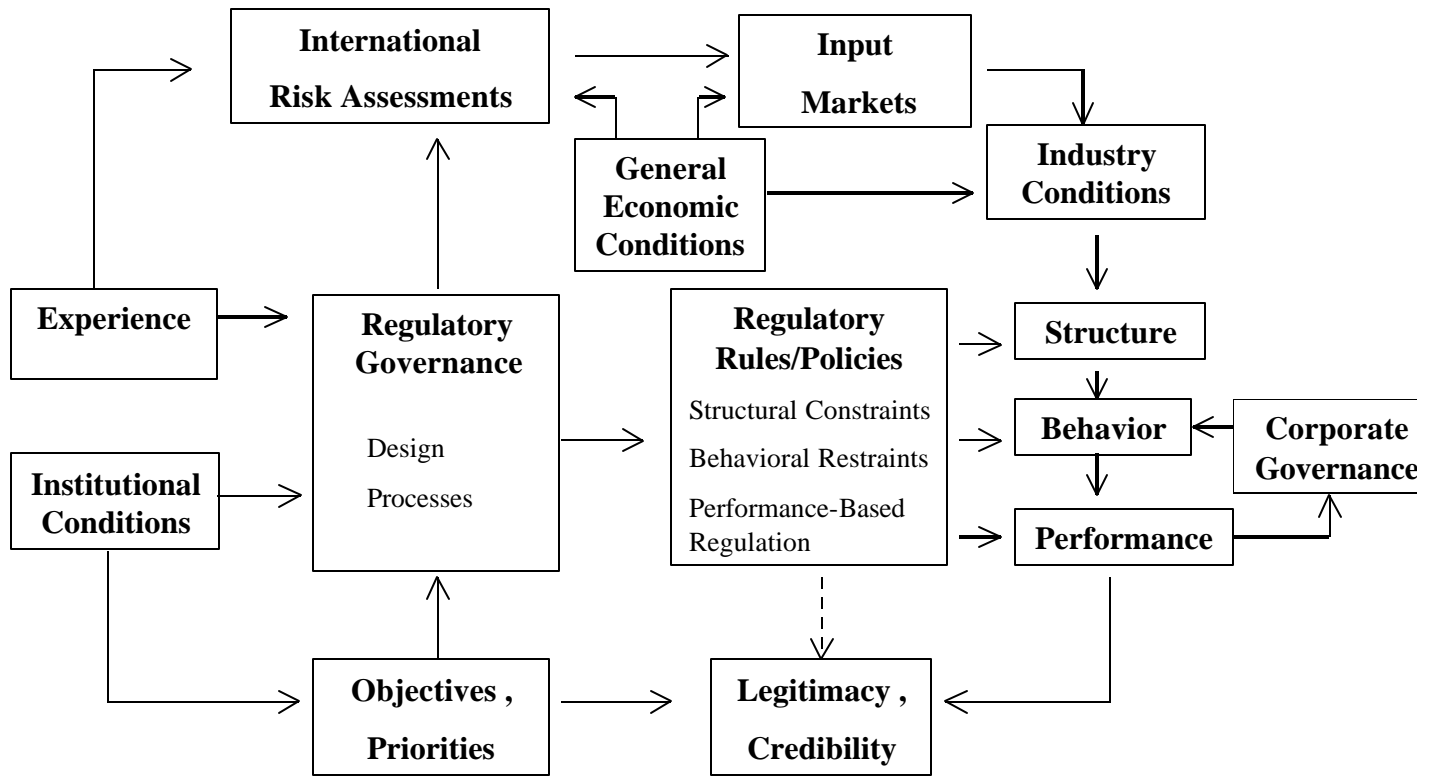
In a series of articles on "best practices" of independent regulatory commissions (IRCs), Sanford Berg and Lynne Holt have noted the ways regulatory processes and policies either promote or deter investments in water and sanitation utility systems. In this article, the authors describe the constellation of factors affecting infrastructure investments and water utility operations. IRCs exercise most direct control over two factors: governance (agency design and processes) and regulatory policies (or incentives). Other factors are generally outside the regulatory domain but may influence or be influenced by regulatory governance and policies. Ultimately, the legitimacy and credibility of the regulatory system depends on how closely water sector performance matches realistic national objectives.

Introduction - The Regulatory Environment

Government policymakers often formulate water and sewerage infrastructure plans; however, policymakers do not act unilaterally. IRCs reporting to those policymakers can establish the necessary conditions for water network expansion and improved operating efficiencies. For example, regulators provide incentives through tariff structures and benchmarking that influence a water utility's behavior and, ultimately, industry performance. Like policymakers, regulators do not operate in a vacuum; rules and regulations promulgated by environmental agencies and determinations by watershed managers on access to raw water supply may impact their rate decisions and the measures used to benchmark utility performance. Public and private investors may impose conditions on contractual arrangements with policymakers that result in changes to regulatory governance and policies.

Although it may be overly simplistic, Figure 1 below depicts the circular dynamics of the larger decision-making environment in which government policymakers, IRCs, investors, and water utilities operate and interact.

Figure 1. Factors Affecting Performance and Regulatory Credibility



Government Objectives and Priorities

Government policymakers identify objectives and set priorities for water and sewerage infrastructure expansion and maintenance, ideally with citizen input. These plans could be part of a concession or other arrangements with the private sector. As noted in an earlier article (Berg and Holt 2002), policymakers can clarify objectives with surveys that weight citizens’ priorities. In a sense, elections represent a “voter survey,” but water issues bundled into party platforms or into the priorities of individual candidates may not mesh with the priorities of citizens, and opposition can result. For example, the aborted concession contract between the Bolivian government and Aguas del Tunari to expand water services to Cochabamba residents in April 2000 reflected a serious "disconnect" between residents and government priorities.

The Bolivian government viewed the concession as a means of accessing otherwise unavailable financial resources to extend water and sanitation networks to poor households lacking connections. Local opposition stemmed from several factors that were either ignored or unanticipated by the government. First, large and high-income

consumers experienced a significant rate increase of as much as 106 percent. Second, farmers thought that their pre-existing rights to use groundwater for irrigation were threatened by the concession. Finally, low-income and large users feared that the exclusive rights over water supply granted the concessionaire would reduce their existing service options. Large customers were afraid they would no longer be able to use their own wells, while low-income households wanted to ensure continued access to alternative water vendors until the network connections were installed (Nickson and Vargas 2002).

The example of Cochabamba illustrates that the Bolivian government's policy objective to improve and expand the city's water and sewerage networks did not adequately consider the concerns of some affected parties. A lack of local trust in the regulatory process, coupled with the national government's failure to garner support for tariff restructuring, compromised the legitimacy of the concessionaire's proposed operations and plans.

Regulatory Governance

The aborted reform effort in Cochabamba shows that a poorly conceived regulatory scheme can impede a government's realization of its objectives and priorities. Therefore, when creating a new regulatory commission, policymakers should give careful thought to regulatory governance in terms of both commission design and processes.

Agency design. A regulatory commission's design relates to the clarity of its role in relation to other government institutions and specifically to the division of responsibility between the commission and the government ministry responsible for developing broad policies. If the roles of those two entities are not clear, conflicts may result and stakeholders will not be able to predict how policies will be implemented in the future.

A regulatory commission's autonomy and accountability are interlocking design features. When regulatory commissions are vulnerable to political pressure, their credibility can be undermined. Political interference for short-term gains threatens the durability of existing contracts with the private sector and prospects for new investments. One such example is the independent regulatory commission, the Ente Tripartito de Obras y Servicios Sanitarios (ETOSS), in Argentina. The commission was created in May 1993 to regulate Aguas Argentinas, the concessionaire operating the Buenos Aires sewerage and water network. ETOSS was responsible for monitoring the company's compliance with the terms of the concession. Partly because of inexperience and partly because much of its staff came from the former public water company, ETOSS became politicized and several of its decisions were reversed by the government. The commission also was viewed as unresponsive to the public and an obstacle to service delivery rather than a crucial part of a good water system (Loftus and McDonald 2001). In addition to an inadequate staff (it initially reported only four economists and four accountants), the commission had a deficient

information base for its regulatory decisions (Alcazar 2000). These deficiencies created an asymmetry of information that adversely affected its regulatory process.

Regulatory process. Citizen participation, transparency, and predictability in decision-making characterize an effective regulatory process (Berg 2001a, Berg and Holt 2001). As noted, citizen participation can help governments set priorities for infrastructure projects, and citizens are more likely to accept regulatory decisions when there are formal mechanisms for their participation in regulatory decision-making. An example is the Ofwat National Customer Council and regional committees in England and Wales (now called WaterVoice). Similarly, if the regulatory process is transparent and the public has access to commission reports, the commission will be less likely to promulgate arbitrary rules. Finally, the consistency of decisions over time gives stakeholders, including investors, some confidence that facts and the law, not political pressures, form the basis of regulatory decisions.

Investor Considerations

Before making long-term funding and technical commitments to major water and sewerage infrastructure projects, investors consider certain factors, including the following.

Institutional Conditions in a country, such as the strength and independence of the judicial system, the administrative capacity and expertise within government ministries, the nature and stability of political processes, and the nature and historic enforcement of property rights and laws governing policies for water infrastructure development. Clear legal authority for expansion plans is a crucial prerequisite for obtaining new investment. For example, in past years states and municipalities in Brazil were mired in a dispute about which entity had the constitutional and legal authority to award water and sanitation concessions in metropolitan areas that extend beyond the borders of municipalities. Such lack of legal clarity was considered to be a significant impediment to private investments in water supply and sanitation projects in Brazil (Soares 2001).

Risk Assessments. Because participants in financial markets face a wide array of investment opportunities, they tend to favor infrastructure projects in countries with predictable regulatory conditions. In making risk assessments of proposed water projects, they utilize information on country risk from sources, such as WaterInvestment.com, Standard & Poor's, and Schwab Capital Markets. As Figure 1 suggests, an IRC should reduce investors' perceptions of risk. Creation of an IRC may also be a precondition of support from non-government organizations.

Economic Conditions and Input Markets. Investors' assessments of project risks are also affected by a country's economic conditions, including the employment, savings, and inflation rates; the strength, stability, and diversity of

the economy; the country's balance of trade; and the strength and stability of its capital markets. These conditions affect the markets, resources, and incentives that influence a water utility's cost of doing business or its inputs. By inputs, we mean the availability of skilled labor (economists, engineers, accountants, and lawyers), capital equipment, and availability of natural resources.

Water utilities are highly capital-intensive and politically sensitive industries, which makes financing more difficult to secure than for other types of utilities. In developing countries, investments in infrastructure projects in the water and sewerage sector that involve private participation accounted for \$36.7 billion during 1990-2000, compared to \$292 billion in telecommunications and \$196.9 billion in electricity (Gray 2001; World Bank PPI Database).

To the extent that water utility managers can curb input costs and obtain capital at lower rates, more resources become available to improve quality of service and expand supply networks. Benchmarking of input data, such as the cost of imported water, energy, equipment, and employment costs, will help utility managers identify and curb input costs. Moreover, competition in input markets can potentially reduce costs for both companies and consumers. In the UK, for example, Ofwat (2002) has recently proposed requiring water companies to allow developers to organize and undertake most of the work involved in installing new water mains and service pipes. (Service pipes supply water from a water main to any premises).

Basic Industry Conditions

As Figure 1 illustrates, economic conditions and input markets affect the conditions of water utilities in terms of supply, demand, information, and ownership of assets.

Supply is determined by input prices and available technologies. Water utilities may find it necessary to adopt new technologies because of consumer protection mandates or environmental laws. For example, water utilities in the United States, the European Union, and Japan must reduce lead levels in one of three ways - corrosion control, source treatment, or elimination of lead sources in the distribution system. If the latter option is selected, five technologies exist for rehabilitating or replacing small diameter pipes used for water service lines: open trench replacement, replacement on another route, replacement using the existing route, slip lining, and pipe coating. Each technology, along with other related factors, has implications for costs (Boyd et al. 2001).

Demand depends on the population of water consumers, their preferences, user demographics, and household income. Economists equate demand with "willingness to pay," so demand is basically the relationship between the price and quantity demanded. Low quality of service implies low willingness to pay. A high percentage of the population with low income also implies low willingness to pay. Given the

importance of clean water for health, a government may decide to subsidize some groups who otherwise could not afford one or more of those services.

Information also affects market structure since local water utility managers have better information than national policymakers or regulators regarding demand patterns and the potential for cost containment. Regulators can use benchmarking to partly offset this information asymmetry. However, when designing incentives, they need to recognize that their information is limited.

Ownership affects both number and size of firms, in conjunction with geographic and demographic conditions. Public ownership has historically involved territorial (and vertically integrated) monopolies. Government failure to include a role for alternative providers when entering private-sector partnerships, such as in the Cochabamba case, can result in higher-cost water options and lack of consumer support for infrastructure expansion plans.

Effects of Regulatory Rules and Policies on Water Industry

Regulatory processes yield rules and policies that influence the structure and behavior of suppliers, as well as water sector performance. All have implications for corporate governance (the internal operations of water utilities).

Market Structure is related to regulatory rules governing entry of suppliers. In general, water utilities are natural monopolies and competition, for the most part, is not included in national governments' objectives and priorities. However, in the UK, for example, the government has proposed extending competition by allowing large-scale industrial and commercial water consumers to purchase water from new entrants granted licenses to use the distribution networks of the statutorily authorized and licensed water companies. Entrants could market water from those networks to large users (Department of Environment, Food & Rural Affairs 2002).

Corporate Behavior is related to regulatory policies governing price caps, reliability mandates, service standards, and network modernization requirements. Water utilities make decisions about the price, quality, and geographic availability of their outputs. In the case of infrastructure, service to rural regions may be much more expensive than service to more densely populated areas. Thus, the extent of service penetration becomes an important decision with ramifications for corporate cash flows and cost of service. Regulatory rules are often directed at constraining price levels or tariff structures. In addition, regulators set targets for reliability, expansion, and other dimensions of service quality. Utility benchmarking is a means of assessing the extent to which such targets have been met (Berg and Holt 2002).

Industry Performance is related to regulatory rules regarding how utilities and consumers will share the upside or downside returns on investment, and to penalties imposed on utilities for missing targets for network expansion. Ultimately, politicians and consumers care that the country's water supply and sanitation networks perform

well. They care that prices are in line with costs and that appropriate innovations are adopted so that service is comparable to that in peer countries. If citizens are dissatisfied, governments may press for reforms. Sometimes reform efforts are precipitated by a crisis: the failure of a water utility's service coverage to meet expectations, excessively inefficient operations, or financial problems that place an unsustainable drain on government resources.

Corporate Governance characterizes the decision rights, implementation responsibilities, incentive programs, and auditing/reporting systems of publicly or privately owned organizations. With the Enron debacle, the collapse of a number of international telecommunications firms, and problems with water concession contracts in some major cities, it is clear that investors (and citizens) cannot take manager-provided information for granted. Investors are affected by lack of credible information, poor internal incentives, and cozy relations among subsets of stakeholders, particularly in emerging markets. Thus, the behavior and performance of firms depend on corporate governance. Regulatory policies can improve the situation by providing investors with some kinds of data that might otherwise be unavailable—via yardstick comparisons across firms and comprehensive reporting requirements.

Conclusion – Legitimacy and Credibility

We come full circle when we compare actual water sector performance against the expected performance implicit in a government's well-conceived objectives and priorities for infrastructure development. When those objectives are realized, policymakers, regulators, managers, and consumers are likely to be content with the outcome. A record of accomplishment yields broad support for the industry and for government. A widely accepted regulatory system can move a nation away from the low-level equilibrium described in the first article in this series (Berg 2001a). With improved performance, stakeholders gain confidence in the regulatory system, which can lead to a high-level equilibrium that is "win-win".

Authors' note: The concepts used in this paper are also described in a modified form in Berg (2001b).

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