

Institutions, Commitment and Public Policy: Electricity Regulation in Ontario and the U.S.

Professor Guy L. F. Holburn
Richard Ivey School of Business
University of Western Ontario

I. Introduction

The widespread reform of national electricity sectors across many countries provides a broad base of experience to assess the relative performance of various policy approaches in attracting private sector participation in the industry. Since 1980, when Chile commenced a radical restructuring, and later privatization program, over 60 countries have introduced reforms in the electricity sector. These reforms have been generally designed with the purpose of increasing the levels of private ownership and investment, thereby reducing the dominance of the state-owned vertically integrated enterprise, the traditional mode of organization. There is substantial variability in the nature of these reforms. Some jurisdictions have invited private investment in the generation sector only, financed by long-term supply contracts to state-owned utilities; some have vertically separated the industry but only privatized part of the sector; while others have privatized the entire industry and additionally created competitive generation markets.

The degree of private sector interest, however, has been markedly mixed across countries. There have been some notable successes in attracting significant levels of private investment in all sectors of the industry (e.g. Argentina, Australia, the U.K.). On the other hand, private investors have shown little interest in purchasing state-owned enterprises or in financing de novo infrastructure assets in countries such as Mexico, Turkey or the Ukraine, to name but a few. Indeed some countries, including Hungary and Venezuela, have had to postpone planned privatization programs due to lack of investor interest. In these countries, despite substantial state encouragement, governments have been unable to reverse sustained periods of under-funding in state ownership with large inflows of private capital.

As a consequence of the mixed experiences, and of the variety of alternative approaches undertaken, a debate has emerged on the design of “optimal” restructuring policies. Much of this debate has focused on classic industrial organization issues, such as the optimal degree of vertical integration between transmission, distribution and generation functions (Newbery, 1999), the extent of horizontal fragmentation, the design of competitive generation markets, the sequencing of reforms and so on. In practice, however, there is no clear empirical correlation between the method of restructuring implemented and the ultimate success of the reforms, casting some doubt on the notion of an “optimal” structural approach. Rather, the main lesson that emerges from the accumulated reform experience over the last two decades is different. Levy and Spiller (1994) argue that the sector’s “*regulatory governance*” regime is more important for attracting long-term private investment than the specific choice of industrial structure. In this approach, regulation has the features of an implicit contract between the government and the company. Under this contract, one of the

parties, the operator, undertakes heavy specific investments, while the other party, the government, has incentives to behave opportunistically for political or economic gain. In such an environment, *governance*, and in this case, regulatory governance, becomes crucial in order to motivate the operator to invest and to restrain the opportunistic behavior of the government. Thus, regulatory governance frameworks that provide a credible commitment to safeguard the interests of potential investors and customers alike, particularly when economic shocks create political pressure to shift the balance of power among competing interest groups, are better suited to attracting the levels of long-term private capital necessary for securing an adequate and reliable supply of electricity. Weak regulatory governance institutions, however, offering few or no credible assurances against direct or indirect expropriation of private property, have difficulty in encouraging private investment. Indeed, the disappointing experiences with sectoral reforms observed in various countries are generally the result of design flaws at the level of the regulatory governance regime, and also of weaknesses in national political, legal and administrative institutions, rather than the result of the chosen industry structure. For policy-makers, this analysis suggests that the key to successful reforms is first to establish a credible regulatory environment, and only then to ponder on refinements of the chosen organizational structure for the industry.

II. The Utilities' Problem: Regulatory Governance and Regulatory Incentives¹

In order to understand the relationship between the design of regulatory institutions and performance in the utility industries, it is helpful first to appreciate the particular features of the utilities sector that distinguish it from other industries: first, their technologies are characterized by large specific, sunk investments; second, their technologies also exhibit important economies of scale and scope; and third, their products are massively consumed. What separates the utilities sector from the rest of the economy is then the combination of three features: specific investments, economies of scale and widespread domestic consumption. These features are at the core of the contractual problems that have traditionally raised the need for governmental regulation of utilities. In turn, they make the pricing of utilities inherently political.

The reason for the politicization of infrastructure pricing is threefold. First, the fact that a large component of infrastructure investments is sunk implies that once an investment is undertaken the operator will be willing to continue operating as long as operating revenues exceed operating costs. Since operating costs do not include a return on sunk investments (but only on the alternative value of these assets), the operating company will be willing to operate even if prices are below total average costs. Second, economies of scale imply that in most utility services there will be few suppliers in each locality. Thus, the whiff of monopoly will always surround utility operations. Finally, the fact that utility services tend to be massively consumed implies that politicians and interest groups will care about the level of utility pricing. Thus, massive consumption, economies of scale and sunk investments provide governments (either national or local) with the incentive and opportunity to behave

¹ This section draws heavily from Holburn and Spiller (2002).

opportunistically vis-à-vis the investing company. For example, after the investment is sunk, the government may try to restrict the operating company's pricing flexibility, it may require the company to undertake special investment, purchasing or employment patterns, or it may try to restrict the movement of capital. All these are attempts to expropriate the company's sunk costs by administrative measures. Thus, expropriation may be indirect and undertaken by subtle means.

Expropriation of the firm's sunk assets, however, does not mean that the government takes over the operation of the company, but rather that it sets operating conditions that just compensate for the firm's operating costs and the return on its non-specific assets. Such returns will provide sufficient ex-post incentives for the firm to operate, but not to invest. Indeed, the expropriation of sunk assets has been more prevalent in Latin America than direct utility takeovers or expropriation without compensation. While the government may uphold and protect traditionally conceived property rights, it may still attempt to expropriate through regulatory procedures.

The Political Profitability of Expropriation

Sunk assets' expropriation may be profitable for a government if the direct costs (reputation loss vis-à-vis other utilities, lack of future investments by utilities) are small compared to the (short term) benefits of such action (achieving re-election by reducing utilities' prices, by challenging the monopoly, etc.), and if the indirect institutional costs (e.g., disregarding the judiciary, not following the proper, or traditional, administrative procedures, etc) are not too large.

Thus, incentives for the expropriation of sunk assets should be expected to be largest in countries where indirect institutional costs are low (e.g., there are no formal or informal governmental procedures -checks and balances- required for regulatory decision making; regulatory policy is centralized in the administration; the judiciary does not have a tradition of, or the power, to review administrative decisions, etc.), direct costs are also small (e.g., the utilities in general do not require massive investment programs, nor is technological change an important factor in the sector), and, perhaps, more importantly, the government's horizon is relatively short (i.e., highly contested elections, need to satisfy key constituencies, etc). Forecasting such expropriation, private utilities will not undertake investments in the first place. Thus, government direct intervention may become the default mode of operation.

The Implications of Government Opportunism

If, in the presence of such incentives a government wants to motivate private investment, then it will need to design institutional arrangements that will limit its own ability to behave opportunistically once the private utility has undertaken its investment program. Such institutional arrangements are the design of a regulatory framework, stipulating, inter alia, price setting procedures, conflict resolution procedures (arbitration or judicial) between the parties, investment policies and so on. In other words, regulation, if credible, solves a key contracting problem between the government and the utilities by restraining the government from opportunistically expropriating the utilities' sunk investments. This, however, does not mean that the utility has to receive assurances of a rate-of-return nature, or that it has to receive exclusive licenses. In some countries, however, such assurances may be the only way

to limit the government's discretionary powers.

Unless such a regulatory framework is credible, though, investments will not be undertaken or, if undertaken, will not be efficient. Investment inefficiencies may arise on several fronts. A first order effect is underinvestment. Although the utility may invest, it will do so exclusively in areas where the market return is very high and where the payback period is relatively short. Second, maintenance expenditures may be kept to the minimum, thus degrading quality. Third, investment may be undertaken with technologies that have a lower degree of specificity, even at the cost of, again, degrading quality. Fourth, up-front rents may be achieved by very high prices which, although they may provide incentives for some investment, may be politically unsustainable.

A non-credible regulatory framework then, by creating strong inefficiencies and poor performance, will eventually create the conditions for direct government take-over. Thus, government ownership may become the default mode of operation, reflecting the inability of the polity to develop regulatory institutions that limit the potential for opportunistic government behavior.

Sources of Regulatory Commitment

In Levy and Spiller (1994) it is argued that the credibility and effectiveness of a regulatory framework --and hence its ability to facilitate private investment-- varies with a country's political and social institutions. Political and social institutions not only affect the ability to restrain administrative action, but also have an independent impact on the type of regulation that can be implemented, and hence on the appropriate balance between commitment and flexibility. For example, relatively efficient regulatory rules (e.g., price caps, incentive schemes, use of competition) usually require granting substantial discretion to the regulators. Thus, unless the country's institutions allow for the separation of arbitrariness from useful regulatory discretion, systems that grant too much administrative discretion may not generate the high levels of investment and welfare expected from private sector participation. Conversely, some countries might have regulatory regimes that drastically limit the scope of regulatory flexibility. Although such regulatory regimes may look inefficient, they may in fact fit the institutional endowments of the countries in question, and may provide substantial incentives for investment.

Levy and Spiller (1994) look at regulation as a "design" problem. Regulatory design has two components: regulatory governance and regulatory incentives. The governance structure of a regulatory system comprises the mechanisms that societies use to constrain regulatory discretion, and to resolve conflicts that arise in relation to these constraints. On the other hand, the regulatory incentive structure comprises the rules governing utility pricing, cross- or direct-subsidies, entry, interconnection, etc. While regulatory incentives may affect performance, one of the main insights from Levy and Spiller (1994) is that the impact of regulatory incentives (whether positive or negative) comes to the forefront only if a regulatory governance framework has successfully been established. Regulatory governance is a choice, although a constrained one, since the institutional endowment of the country limits the menu of regulatory governance mechanisms available. Thus, regulatory commitment has two sources: the institutional endowment and regulatory governance.

Institutional Endowment

The institutional endowment of a nation consists of five elements (Levy and Spiller, 1994): first, a country's legislative and executive institutions. These are the formal mechanisms for appointing legislators and decision makers, for making laws and regulations (apart from judicial decision making); for implementing these laws, and for determining the relations between the legislature and the executive. Second, the country's judicial institutions. These comprise the formal mechanisms for appointing judges and for determining the internal structure of the judiciary, and for resolving disputes among private parties, or between private parties and the state. Third, custom and other informal but broadly accepted norms that are generally understood to constrain the action of individuals or institutions. Fourth, the character of the contending social interests within a society, and the balance between them, including the role of ideology. Finally, the administrative capabilities of the nation. Each of these elements has implications for regulatory commitment. We focus here on the first two.

The form of a country's legislative and executive institutions influences the nature of its regulatory problems. The crucial issue is to what extent the structure and organization of these institutions impose constraints upon governmental action. The range of formal institutional mechanisms for restraining governmental authority includes: the explicit separation of powers between legislative, executive and judicial organs of government; a written constitution limiting the legislative power of the executive, and that can be enforced by the courts; two legislative houses elected under different voting rules; an electoral system calibrated to produce either a proliferation of minority parties or a set of parties whose ability to impose discipline on their legislators is weak; and a federal structure of power, with strong decentralization even to the local level. Utility regulation is likely to be far more credible -- and the regulatory problem less severe -- in countries with political systems that constrain executive discretion. Note, however, that credibility is often achieved at the expense of flexibility. The same mechanisms that make it difficult to impose arbitrary changes in the rules may also make it difficult to enact sensible rules in the first place, or to efficiently adapt the rules in the face of changing circumstances. Thus, in countries with these types of political institutions, the introduction of reforms may have to await the occurrence of a drastic shock to the political system.

Legislative and executive institutions may also limit a country's regulatory governance options. In some parliamentary systems, for example, the executive has substantial control over both the legislative agenda and legislative outcomes. In such countries, if legislative and executive powers alternate between political parties with substantially different interests, specific legislation need not constitute a viable safeguard against administrative discretion, as changes in the law could follow directly from a change in government. Similarly, if the executive has strong legislative powers, administrative procedures and administrative law by themselves will not be able to constrain the executive, who will tend to predominate over the judiciary in the interpretation of laws. In this case, administrative procedures require some base other than administrative law.

A strong and independent judiciary could serve as the basis for limiting administrative discretion in several ways. For example, the prior development of a body of administrative

law opens the governance option of constraining discretion through administrative procedures. Also, a tradition of efficiently upholding contracts and property rights creates the governance option of constraining discretion through the use of formal regulatory contracts (licenses). This option is particularly valuable for countries where the executive has a strong hold over the legislative process. Further, a tradition of judicial independence and efficiency opens the governance option of using administrative tribunals to resolve conflicts between the government and the utility within the contours of the existing regulatory system. Finally, it provides assurances against governmental deviation from specific legislative or constitutional commitments that underpin the regulatory system.

The regulatory challenge therefore lies not just in designing regulatory incentive structures that restrain utilities' monopoly behavioral tendencies but also in designing regulatory governance frameworks that constrain the political and administrative actors who have ultimate jurisdiction over the industry. Designing regulatory institutions that are *flexible* enough to make balanced policy decisions in response to unanticipated events but that are also *rigid* enough to insulate policy from political pressures is a difficult task, however.

III. Electricity Regulation in the United States

In the United States, the country with the longest history of private ownership in the utilities sector, the regulatory solution that emerged in the electricity industry during the beginning of the twentieth century was to move regulation one step up from local politics. Regulatory authority over electric distribution utilities was moved away from the highly politicized municipal environments, towards state-wide independent administrative agencies (state Public Utility Commissions, hereafter "PUCs") with statutory authority to monitor utility performance and to set final rates. Since PUCs normally operate in systems where legislative power is divided among the executive and two legislative chambers, they generally have substantial autonomy to determine regulatory policy without the threat of legislative override or overwhelming political interference. While PUCs operate under vague statutory objectives ("reasonableness" is the typical criterion for rate structures) and have the power to disallow imprudent or anti-competitive managerial behavior, their decisions cannot be made in an arbitrary fashion. First, the evolution of constitutional interpretation implies that utilities are allowed to earn a fair return on their investments. Second, due process requirements enshrined in states' Administrative Procedure acts also ensure that PUC rulings must be based on the facts and evidence of the case (Vanden Bergh, 1998). In the event of disputes, utilities are able to challenge the PUC on both statutory and constitutional grounds in State and Federal courts which, given the nature of judicial appointments (and in the state courts, of the reelection process), normally operate independently of the political establishment (Spiller and Vanden Bergh, 1997). In the electricity sector, a second level of protection against local opportunistic behavior resides in that wholesale electricity generation markets, given the interconnection across states of transmission grids, are regulated at the federal rather than at the state level. Given their independence and nation-wide range of interests, federal agencies are less able to be manipulated by local or state officials. Private investors thus have some assurance that regulatory policy will be protected from immediate political pressures as well as from agency arbitrariness. Although hard to assess, it appears that this regulatory

arrangement has balanced utility and political tensions reasonably well: electricity costs, for example, are low compared to most other countries (IEA, 2000), and investment levels in generation, distribution and transmission capacity have usually ensured reliable network operations.

Implementing regulatory reforms at legislative and administrative levels in the U.S. is frequently a difficult and lengthy exercise, lending considerable weight to status quo policies. First, as a result of the nation's federal structure, as well as of its separation of political powers, legislative policy changes require the agreement of multiple institutions, all of which are subject to judicial review. Thus, in the presence of divergent interests it can be difficult to find mutually preferable new proposals that also survive judicial review. Consequently, drastic changes in regulatory policy – those that entail a redistribution of wealth among competing interest groups – are difficult to implement as the losing coalition will lobby against adoption. Thus, when political interests are fragmented, dramatic legislative proposals tend to be watered down with compromises reflecting political rather than economic logic.

Second, while the U.S. system of political checks and balances insulates interest groups against unfavorable *legislative* reforms, the logic of political delegation also ensures that regulatory agencies do not rapidly implement substantial policy changes against the wishes of their political principals through *administrative* means. A variety of governance mechanisms are used to safeguard against rapid administrative decision making which may distort legislators' preferences. Legislators undertake committee hearings, appointments of officials are reviewed, and agencies are subject to administrative procedures and due process requirements that provide interest groups with a role in decision-making procedures. Thus, even if the threat of legislative override is not credible, agency decisions cannot drift too far too fast from the status quo.

The combination of multiple legislative veto points, administrative controls and independent judicial review tend to insulate status quo public policies and the interests of stakeholder groups from dramatic reform.

IV. Electricity Regulation in Ontario

In contrast to the United States, regulatory governance in Ontario is less insulated from political control, exposing the utilities sector to a greater degree of direct political intervention. The Ontario Energy Board, which has primary responsibility for regulating the electricity sector, is under the control of the Ministry of Energy. Since 1998 additional regulatory agencies have been created with specific mandates, including the Ontario Power Authority, the Conservation Bureau, the Electrical Safety Authority and the Ontario Electricity Financial Corporation. Further, as part of Bill 21 in March 2006, the government announced its intention to establish an additional agency, a 'Smart Meter Entity', which will have responsibilities regarding the implementation of new metering technology. With multiple agencies, administrative responsibilities and capabilities are thus relatively fragmented.

In a parliamentary system, legislative and executive powers are centered in the cabinet, of which the Minister of Energy is a member. Primary legislative authority resides within the legislative assembly and, within that, the cabinet. The concentration of legislative power in a single institution in Ontario provides a strong incentive for agencies to adhere to political wishes in their policy decisions. Deviating too far may trigger overriding legislation that reverses the specific decision, modifies future decision-making criteria, or trims the agency's jurisdictional scope or future budget.

The relative ability of politicians to directly intervene in regulatory affairs is evidenced by political reactions to two sector shocks since 2000. First, after wholesale power market rates in Ontario spiked during the summer of 2002, the government rapidly enacted legislation (Bill 210) that re-regulated rates, imposing a new rate cap for electricity sold by distribution utilities to residential consumers. As part of the same legislative act, the minister required any retail rate changes proposed by the distribution utilities to obtain his authorization rather than that of the OEB as before. It was not until 2004 that the OEB regained this authority. Second, after regional blackouts in 2004, the minister imposed new requirements on the utilities in order for them to obtain financial rates of return, implemented through phased rate increases, that were agreed to in 2000. Specifically, the minister required the utilities to make new investments in conservation and demand management programs to be eligible for the scheduled rate increases.

The appointment process of board members to the OEB provides a further mechanism for the elected government to induce compliance in regulatory decisions. Appointments are made by the cabinet. The OEB must have a minimum of five members but there is no maximum. In 2006 there were nine members. Initial appointments are for a two year period though re-appointments can be for any length of time. Theoretically, a government could readily pack the OEB with carefully selected appointees who would form a voting majority on the OEB board. It could also shorten re-appointment periods to a six month or one year time frame in order to increase pressure on specific board members.

Again, there is a strong contrast to the United States, and also the U.K., where appointment procedures have been specifically designed to create a degree of agency independence from short-term politics. In the U.S., the typical PUC has three members who serve fixed five-year, overlapping terms. They are appointed by the state governor with the consent of the state senate. They may not be removed from office apart from negligence or other extreme circumstances. At any one point in time, only a single commissioner's term will be due to expire, enabling the remaining majority to take a longer time horizon in their policy rulings and orders. The fixed five year term further reinforces this, encouraging PUC commissioners to invest in building their own policy expertise. Similar appointment procedures apply in the U.K. where appointments are made by the prime minister.

Under the current regulatory governance regime in Ontario, private investors in the sector will demand a higher rate of return and/or shorter payback periods than otherwise, given the perceived risks of political intervention. Inducing private investment in generation, for instance, will then be relatively costly. Risks are especially acute for large scale

investments (for instance, new power generation stations) and for low carbon generation technologies that are costly relative to conventional fuel technologies. As the analysis here suggests, one way to overcome this problem is to undertake fundamental structural reform of the sector's policy-making institutions with the goal of limiting the channels through which short-term political forces operate. While a full consideration of such options is outside the scope of this paper, one immediate recommendation would be to reform the appointment procedures of the OEB, making them closer to those of the U.S. and U.K.