

Does Internationalization of Infrastructure Imply Internationalization of Regulation?

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Abstract: Although the internationalization of infrastructure raises the issue of internationalization of regulatory governance, there is no pressing need to internationalize additional regulatory institutions for infrastructure. However, in a time of constant change, there is a need to leverage the co-evolution of service providers, customers, and governance institutions to learn through experimentation.

Introduction

Recent trends in internationalization of utility infrastructure raise the issue of whether there is a need to realign regulatory institutions (Künneke 2008). There are several examples of internationalization of infrastructure. Telecommunications is an increasingly global business (Jamison, 1998; Chan-Olmsted and Jamison, 2001) and electricity and natural gas cross national boundaries. Environmental issues related to infrastructure, most recently climate change, also seem not to respect national boundaries. The California energy crisis earlier this decade demonstrated what can happen with regulatory rules do not align with economic and technological realities (Borenstein 2002).

It is not obvious, though, that regulatory institutions' geographic boundaries need to align with those of the industries they regulate. Below I describe the principles and issues that determine the design of regulatory institutions. I also explain why internationalization of infrastructure¹ does not necessarily call for an internationalization of regulation, although in today's changing economic, political, and technological climates, some experimentation would be appropriate.

Internationalization of Infrastructure

Internationalization of infrastructure occurs through interconnections or links that bring about interaction among infrastructures. Jamison (forthcoming) identifies seven forms of interconnection. The most recognized form, physical interconnection,

¹ I limit my attention to the traditional utility sectors of electricity, natural gas, telecommunications, and water.

includes telecommunications networks, electricity grids, natural gas pipelines, and the like. The cross-border issues include technical standards, geographic locations, and payments. Logical interconnections, such as telecommunications numbering and Internet naming conventions, provide system intelligence and controls across national boundaries. Financial interconnections include those where a multinational infrastructure firm's finances are affected by international operations and where firms seek to over recover costs through transactions with international affiliates. Here the cross-border issues include financial ring fencing and constraints on regulators' behaving opportunistically by, for example, excluding certain costs from recovery.

Strategic interconnections are those where decisions that cross jurisdictions are strategically interrelated. For example, natural gas pipelines and supply across Eastern Europe have been used in a larger economic and geopolitical engagement involving suppliers' and customers' home nations. Policy interconnections include spillovers of jurisdictional decisions. For example, liberalization of telecommunications in Western economies led to the creation of multiple global telecommunications firms that influenced policy makers in non-liberalized markets to open their markets. Internationalization of customers led some telecommunications operators to secure local networking in countries where their customers had operations (Jamison 2001). Environmental interconnections – where infrastructure operations in one country impact the environment in another country – are largely spillovers and externalities. Examples of concerns would include acid rain, greenhouse gases, and water extraction.

Purposes of regulation

Utility regulation developed for several reasons, including controlling market power, ensuring industry stability, redistributing wealth, and extracting rents from service providers. The first two reasons – controlling market power and ensuring stable supply – have their roots in the public interest theory advanced by economists such as Martin Glaeser and Harry Trebing.² The central idea is that inefficiencies and instabilities in infrastructure have unusually disproportionate, cascading effects throughout the rest of the economy (Phillips 1993: 1-2, 83-121; Glaeser 1927: 170-171). For example, the California energy crisis cost the state millions of dollars in lost economic activity. Research has consistently supported the idea that advancing telecommunications infrastructure is important for economic development.³ Furthermore, the rapid economic growth of China and India provides evidence that such expansion goes hand in hand with utility infrastructure growth. It is generally believed that high fixed costs lead to destructive competition and supply uncertainties for utilities (Sharkey 1982: 24-28).

Anyone involved in regulation knows that stakeholders try to use it to their advantage, but it was Peltzman (1976) and Posner (1971) who formalized the notions

² See, for example, Glaeser (1927) and Trebing (1984, 1987).

³ See, for example, Van Ark and Inklaar (2005), Röller and Waverman (2001), Waverman et al. (2005), and Crandall et al. (2007).

of rent seeking and taxation by regulation. Trying to explain why self-interested government actors, such as politicians, might create regulatory institutions, these ideas hold that regulation occurs because of its ability to transfer wealth from less politically powerful stakeholders to more politically powerful ones. Peltzman's and Posner's ideas have been substantiated by studies showing that it is the wealthy, not the poor, who benefit most from universal service subsidies (Estache 2006; Hazlett 2006).

Design of regulatory institutions

While there are clear ideas about why regulation occurs, it was actually other problems – namely the need to limit opportunism and help overcome information asymmetries – that moved regulation out of the courts and political bodies and into expert regulatory institutions.

There is substantial empirical support for the idea that regulation limits political opportunism, for both privately-owned and publicly-owned utilities (Henisz and Zelner 2001a and 2001b; and Gutiérrez 2003). Utilities are especially vulnerable to opportunism because the technologies generally require large, sunk investments that are specific to the purpose of providing the utility service, the production methods often have economies of scale and scope, and the services are consumed by large portions of the population (Spiller 2005).

Regulation by independent⁴ agencies helps effect a system of checks and balances that limit politicians' abilities to expropriate at least some of the value of sunk infrastructure investment for short-term political gain. For example, the Philippines fared better than some of its neighboring countries during the Asian financial crisis of 1997 because regulatory institutions protected private property rights (Henisz and Zelner 2001b). To achieve independence, it is often the case that regulatory commissioners serve fixed terms that do not coincide with political terms, cannot be removed from office except for cause, such as violating ethical rules, and may not engage in anything that might be a conflict of interest.

Expert regulatory agencies address the problem of utility providers having private information, such as their innate abilities and unobservable efforts. Expert agencies have better skills than politicians for observing at least some of the private information and for establishing economic incentive mechanisms, such as price cap regulation, that can reward service providers for using their private information in a way that benefits customers (Sappington and Weisman 1996: 2-4). Regulatory institutions almost always have ratemaking authority and often have authority to require a uniform system of accounts and financial reporting. Some agencies can impose financial quality standards on a utility, such as liquidity requirements.

The evolution of U.S. regulatory agencies illustrates how institutional design is used to avoid capture, exploit scale economies, and effect a correspondence of control.

⁴ Independence simply means that the agency operates under laws rather than decrees; manages its budget, subject to legal limits; and makes decisions that are reviewable only by an independent judiciary and not by ministries, parliament, or the government

Cities were the initial regulators of utility services. But in the early 1900s, most states chose to form state regulatory agencies for three reasons. First, there were instances of corruption because a single operator would serve an entire city and so would have a strong interest in influencing city politics to its advantage. A second reason was to gain scale economies that permitted the development of a highly expert staff. Third, state regulatory agencies could oversee activities such as affiliate transactions and the creation of service bottlenecks that were beyond the jurisdiction of cities. This is the correspondence of control issue, namely, that the regulatory agency should have authority to protect ratepayers from adverse decisions made by the utility, its affiliates, or its allied organizations. Federal regulation of utilities formed in part because of this correspondence issue. In some instances, utilities engaged in transactions that were beyond the jurisdiction of the states, such as the selling of electricity or gas across state boundaries.

Dominica, Grenada, St. Christopher (Kitts) and Nevis, St. Lucia, and St. Vincent formed a supranational regulator, the Eastern Caribbean Telecommunications Authority (ECTEL), for scale economy reasons. Each member state was small⁵ and so lacked resources that could be dedicated to certain telecommunications issues. The formation of ECTEL allowed the countries to share work and collaborate on the company they each regulated Cable & Wireless.

Regulatory agencies have a long history of errors and evolutions: In the United States, municipal regulation provided lessons that led to the formation of state regulation, and the limitations of state regulation led to the formation of federal regulation. ECTEL's successes have led to an interest in regional electricity regulation.

Systems learning and adaptation

None of the reasons for the development of regulation – controlling market power, providing stability and reliability, and rent seeking – nor the issues driving the design of regulatory institutions – effecting checks and balances, overcoming information asymmetries, avoiding capture, exploiting scale economies, and effecting correspondence of control – point to a need to internationalize regulatory institutions in the face of internationalization of utility providers.⁶ However, I could be wrong because my knowledge and comprehension of the myriad of situations are limited and the economy, political situation, and technologies are always changing. In the presence of that uncertainty and constant change, how can we provide a system where people grow in knowledge together and adapt when circumstances change? Jamison and Castaneda (2009) suggest three themes that should be followed:

⁵ The country populations are Dominica, 73,000; Grenada, 91,000; St. Christopher (Kitts) and Nevis, 41,000; St. Lucia, 160,000; and St. Vincent, 105,000.

⁶ For a more complete treatment of this issue, see Jamison (forthcoming).

*Focus on next practices, not best practices.*⁷ Best practice is about imitation and is important for following in someone else's footsteps. A focus on next practice is needed when venturing into areas where no one has gone before.

*Concentrate on why rather than on what.*⁸ When we ask ourselves "What should we do next?" we emphasize practice. But the practice needs as a foundation of basic principles and values. So we should ask ourselves "Why have certain practices or experiments been successful or unsuccessful?" so that we engage in an analysis of our underlying priorities and of our context.

Emphasize leadership over leading. A leader provides direction, which is proper when the right direction is known with a high probability. In contrast leadership mobilizes people to tackle difficult and often ambiguous problems and circumstances. (Heifetz 1994: 15)

Conclusion

There is no pressing need to reform regulatory institutions to address the increasingly international nature of infrastructure, but experiments and learning with regulatory structures are important. It seems that there are several opportunities for adaptive learning in utilities regulation, not all of which are driven primarily by internationalization of infrastructure. But while the adaptive learning is going on, through focusing on next practices, on the why question, and on leadership, it is important to hang onto the things that are true. As Peter Drucker said, "It is precisely because change is constant that our foundations must be strong" (Drucker 2004).

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⁷ This idea is developed by Heifetz, Grashow, and Linsky (2009).

⁸ This idea is developed by Collins (2009: 36-42).

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