

The Worldwide Diffusion of Market-Oriented Infrastructure Reform, 1977-1999

Running Head: Diffusion of Market-Oriented Reform

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ABSTRACT

Why do countries differ so much in the extent to which they adopt neo-liberal, market-oriented reform in their infrastructure industries? Building on world-society and neo-institutional theories in sociology, we argue that international pressures of coercion, normative emulation, and competitive mimicry strongly influence the domestic adoption of market-oriented reform. We consider the effect of such pressures on the adoption of four reform elements: the privatization of state-owned firms, the formal separation of the regulatory authority from the executive branch, the de facto elimination of executive political influence on the regulatory authority, and the opening of the retail market to multiple service providers. We find generally robust support for our arguments using a multivariate probit analysis of reform adoption in the telecommunications and electricity industries of as many as 71 countries and territories between 1977 and 1999. Our results also suggest that the coercive effect of lending by the IMF and World Bank differs for each reform element. We discuss the possibility that, by leading countries to adopt some reform elements but not others, international coercion may not produce ideal outcomes.

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INTRODUCTION

During the last two decades, dozens of countries around the world have implemented a series of neo-liberal policies aimed at redefining the role of the state in the economy. This trend has been particularly pronounced in infrastructure industries such as telecommunications, electricity, water, sanitation and transportation, in which state-owned enterprises long enjoyed monopolies. “Market-oriented” reform in these industries has included at least one of four elements: the privatization of state-owned firms, or simply “privatization”; the formal separation of the regulatory authority from the executive branch, or “regulatory separation”; the de facto elimination of executive political influence on the regulatory authority, or “depoliticization”; and the opening of the retail market to multiple service providers, or “liberalization.”

Economists argue that the joint adoption of privatization, regulatory reform, and liberalization increases efficiency and improves service standards (Megginson and Netter 2001). Yet, despite this normative rationale, countries vary substantially in their decision to initiate market-oriented reform in a given infrastructure industry, the timing of such reform, and the specific number and combination of reform elements.

In order to understand the intricate and incomplete pattern of worldwide diffusion of neo-liberal, market-oriented reform, we examine the factors that influence a country’s policy adoption decision. Research in economics and political science implicates several domestic economic influences, national political characteristics and the preferences of key interest groups and political actors. Other research, primarily in sociology, holds that as a result of the highly structured nature of the international system of states (Meyer, Boli, Thomas, and Ramirez 1997; Van Rossem 1996), cross-border influences partly—or even primarily—explain policy adoption (Simmons, Dobbin, and Garrett 2004).

Our analysis contributes to existing research in two ways. First, we distinguish among the independent effects of a more comprehensive set of international influences than existing research does. Neo-institutional theory in sociology (Campbell 2004; DiMaggio and Powell 1983; Jepperson and Meyer 1991) posits three distinct mechanisms of diffusion: international coercion, which results from power dynamics; normative emulation, whereby actors intensely related to each other within a social structure influence each other; and competitive mimicry, a process of social comparison stemming from the pressure to remain economically effective and efficient relative to relevant others. Existing empirical research on international coercion focuses on the role that dominant states (Kogut and Macpherson 2004; Swank 2004) and multilateral organizations (Brune, Garrett, and Kogut 2004; Frank, Hironaka, and Schofer 2000; Strang and Chang 1993) play as drivers of reform. Research on normative emulation and competitive mimicry both examine policy imitation among countries; the former emphasizes imitation among countries linked to each other through social ties (Guler, Guillén, and Macpherson 2002; Kobrin 1985; Pollilo and Guillén Forthcoming; Simmons and Elkins 2004) and the latter stresses imitation among countries competing for foreign capital (Guler, Guillén, and Macpherson 2002; Pollilo and Guillén Forthcoming).

Failure to account for all three of these mechanisms concurrently in empirical work may result in omitted variable bias. For example, some of the countries subject to coercive pressures exerted by dominant states and multilateral organizations may also have strong social ties as the result of trade relationships. Indeed, trade by the low-income countries most likely to be subject to international coercive pressures has increased substantially relative to trade by high-income countries during the past 25 years, by 15 percent of GDP (from 24 to 39 percent) versus seven percent of GDP (from 36 to 43 percent), respectively (World Bank, 2005). Moreover, many

countries that are dependent on dominant states and multilateral organizations are also likely to be in competition with each another for external resources such as foreign capital. As a result, inferences drawn from empirical analyses that include measures of coercive pressures but exclude measures of normative and competitive pressures may be incorrect. No published empirical study of which we are aware considers the international influences of international coercion, normative emulation and competitive mimicry simultaneously.¹

Our second contribution is to examine the adoption of privatization, regulatory separation, depoliticization and market liberalization jointly, in contrast to studies that examine the adoption of one element in isolation from the others. Most previous research has looked at either deregulation (Eising 2002; Levi-Faur 2005) or privatization alone (Brune, Garrett, and Kogut 2004). Investigating joint adoption is of special importance in light of the economic argument that privatization, regulatory reform and liberalization create benefits only when adopted in tandem. Indeed, it could well be the case that international forces that increase the likelihood of adoption of some elements but not others have a deleterious impact on performance and, ultimately, people's perceptions of market-oriented reform on the whole.

We begin our analysis by discussing the recent history of neo-liberalism and the domestic drivers of market-oriented policy reform. We then consider the effects that international coercion, normative emulation and competitive mimicry have on the adoption process and

¹ Three unpublished studies consider coercion, emulation and mimicry in tandem, those by Brune and Guisinger (2003) on capital account liberalization, Elkins, Guzman and Simmons (2004) on bilateral investment treaties, and Polillo and Guillén (2005) on the adoption of central bank independence.

formulate our hypotheses. We offer an empirical test using worldwide data on the four elements of market-oriented policy reform in two key infrastructure industries, telecommunications and electricity, over more than two decades.

THE DOMESTIC AND INTERNATIONAL CONTEXT OF MARKET-ORIENTED REFORM

Market-oriented reform in infrastructure industries has occurred in the context of the rise of the neo-liberal approach to policymaking. This school of thought first gained acceptance in Chile and Britain during the late 1970s. Essentially, it proposes to reduce the role of politics and the state in the economy so that markets may function unhindered. Although neo-liberalism is today the dominant paradigm of economic policymaking, it did not ascend simultaneously around the world, nor has it taken hold to the same degree in different countries (Campbell 2004; Campbell and Pedersen 2001; Fourcade-Gourinchas and Babb 2002).

Neo-liberalism arose as a direct response to Keynesianism and other forms of state intervention in the economy. During the 1970s, economists engaged in fierce theoretical and practical debates about the proper role of the state, as well as the effectiveness of the “demand-side” policies associated with the Keynesian approach, versus the “supply-side” initiatives espoused by neo-liberalism (Evans 1997). Although participants on both sides of the debate tended to emphasize the technical aspects of their arguments, the ideological and political undertones were readily apparent. Keynesianism favors the use of fiscal policy (e.g., government spending) as a way not only to manage the business cycle, avoid recessions and generate full employment, but also to achieve certain popular political goals such as social cohesion (which

the creation of a “social safety net” would allegedly foster). Neo-liberalism, in contrast, proposes to encourage entrepreneurship, investment, and long-run economic growth through reductions in subsidies, tax reform, tax cuts, stabilization of the money supply, the free flow of trade and capital, and, central to the current analysis, the market-oriented reform of state-owned industries.

Dozens of countries adopted elements of market-oriented reform between 1980 and 1999. Whereas in 1980 only 10 countries had adopted such an element in telecommunications and 44 had done so in electricity, these figures had respectively increased to 124 and 94 by the end of 1999. In the aggregate, only 40 countries, or 21 percent of the 190 countries and territories for which we have data, had engaged in some level of market-oriented reform in electricity or telecommunications as of 1980; by 1999 the figure had risen to 144 countries, or 76 percent.²

Market-oriented reform has often come under attack in recent years. The California electricity debacle, for example, is typically blamed on “deregulation.” Other prominent debacles, such as those involving Enron and WorldCom, are commonly associated with the private ownership of utilities. Nonetheless, a substantial body of empirical evidence suggests that private ownership, deregulation and liberalization do, in many cases, improve the economic performance of industries previously owned by the state (Megginson and Netter 2001).

Recent critiques of the neo-liberal reform paradigm’s failure to recognize complex institutional interdependencies help to reconcile these ostensibly conflicting perspectives. Specifically, some observers argue that privatization, regulatory reform and liberalization must be adopted in tandem in order to produce economic benefits (D’Souza and Megginson 1999; Megginson and Netter 2001). For example, regulatory reform is of limited value when the regulatory agency is charged only with monitoring a state-owned monopoly. In the case of a

² At the end of 1999 there were 205 countries and territories in the world.

privatized monopoly, regulation that has not been depoliticized typically leads to corruption. Moreover, whereas competition among multiple private operators may result in improved service and increased efficiency, entry into a “liberalized” market is unlikely in the presence of a politicized regulatory authority with close ties to a (current or previously) state-owned utility or powerful foreign investor.

Anecdotal evidence supports this conceptual logic. For example, the 1997 East Asian financial crisis is attributed in large part to the rapid liberalization of East Asian financial markets (resulting among other things in entry by international investors) without concurrent depoliticization of the regulation of these markets. Similarly, in Latin American and former Communist countries, reforms have been thwarted by the sale of state-owned assets to privileged insiders on favorable terms, without the full-scale elimination of existing entry restrictions or depoliticization of the regulation of newly-privatized firms. Systematic empirical analyses also find a positive link between the joint adoption of reform elements and performance (Fink, Mattoo, and Rathindran 2002; Levy and Spiller 1994; Wallsten 2001).

Countries vary considerably in the comprehensiveness of their reform efforts. In 1986 Chile became the first country to have privatized a majority of its state-owned electric utility, formally separated regulatory authority from the executive branch, depoliticized the regulatory authority in actuality, and liberalized its electricity industry. In 1984 the United Kingdom became the first country to have attained all four of these reform elements in telecommunications (Fourcade-Gourinchas and Babb 2002). Yet, by the end of 1999 just two percent of the 190 countries and territories for which we have data had attained all four elements in their electricity industry, whereas 12 percent had attained three elements, 18 percent had attained two, and 18 percent had attained just one. In telecommunications, the analogous figures are seven, 13, 22 and

14 percent, respectively.

As we demonstrate below, both domestic and international factors have shaped the cross-national adoption of the elements of market-oriented reform in the electricity and telecommunications industries. In our empirical analysis, we ascertain whether specific influences increase the likelihood of piecemeal adoption by allowing the independent variables to have a differential impact on each reform element. We first consider international influences—the focus of our analysis—and then provide an account of the domestic factors influencing reform.

The International Context of Market-Oriented Reform

We propose that international coercion, normative emulation and competitive mimicry are three basic mechanisms driving policy diffusion around the world above and beyond the domestic political, economic and technological factors identified in the literature. We base our arguments on the assumption that nation-states are in economic, political and cultural competition with one another. As a result, they are influenced by power dynamics, and borrow policy ideas and practices from each other in order to maintain their position and status in the global system of states (Elkins and Simmons 2005; Meyer, Boli, Thomas, and Ramirez 1997).

International Coercion: Theory and General Evidence

Neoinstitutional theory refers to the exertion of pressures for homogeneity by the state and other powerful actors as coercive isomorphism (DiMaggio and Powell 1983). Although much neo-institutional theorizing focuses on the domestic context, world-society scholars have also applied the concept of coercive isomorphism to the interactions among countries. Meyer et

al. (1997: 157) argue that “the expanding externally defined requirements of rational actorhood” increase the proclivity of less powerful actors or states in the global system to adopt formal structures or practices. Those countries (or groups of countries) with more power in the international system, or that are viewed as possessing high status, shape the policies adopted by countries that are less powerful or considered less legitimate (Gilpin 1987).

International coercion occurs when powerful actors influence the policy choices of governments directly or when such actors change the outcome of a domestic policy struggle by favoring the domestic coalition supporting a given policy. The former concept, “direct coercion,” implies that domestic groups or parties that set policy simply acquiesce to international pressures. This depiction may sometimes approximate reality, for example, in the case of intervention by the International Monetary Fund (IMF) in the wake of a macroeconomic or financial crisis. Despite the fact that governments “do not want to sacrifice their sovereignty and have conditions imposed... they need the IMF loan and therefore accept IMF conditions because they have no choice” (Vreeland 2003).

The concept of indirect coercion entails the more frequent and perhaps realistic assumption that sundry domestic groups in a country may hold different views about a market-oriented reform as a result of differences in ideology or economic interests.³ In this case, the intervention of an outsider or third party can tilt the balance of power toward the group (or groups) favoring reform by providing that group with more resources, legitimacy or rhetorical

³ Garrett’s (2000) study of the tendency of leftist governments to spend more and run higher deficits, despite greater product and factor market integration, highlights the persistent effect of ideology on policy outcomes.

arguments, and by prompting various groups to join the pro-reform coalition (Campbell 2004: 179; Elkins and Simmons 2005; Levi-Faur 2005). For instance, the literature on IMF lending practices argues that intervention by external actors that provide short-term resources conditional on the implementation of a reform, and threaten subsequent direct or indirect punishments if that reform is not implemented, may alter the domestic political balance of power in favor of reform (Dixit 1996; Putnam 1993; Vreeland 2003).

Simmel (1950: 145-169) theorizes more generally about the intervention of a third party in a preexisting relationship between two parties. In his terms, multilateral agencies like the IMF and World Bank facilitate market-oriented reform policies by functioning as a “*tertius gaudens*,” a third party that enjoys influence because “either two parties are hostile toward one another and therefore compete for the favor of a third element; or they compete for the favor of the third element and therefore are hostile toward one another” (Simmel 1950: 155). A domestic group or party favoring market-oriented reform may approach a multilateral agency in order to advance its goals (e.g., privatization), or the agency may approach this group or party itself. The multilateral agency does not necessarily have to exert a huge amount of influence; rather, “the only important thing is that [the third party’s] superadded power give one [of the two pre-existing parties] superiority” (Simmel 1950: 157).

Empirical research supports the contention that international coercion may affect policymaking. For example, Strang and Chang (1993) find that the signing of International Labor Organization conventions enhances subsequent welfare spending, providing evidence of direct coercion by powerful organizations. Studies linking domestic interest group composition to reform provide more limited empirical evidence of indirect coercion. (Bockman and Eyal 2002).

The Coercive Role of Multilateral Agencies

Much research on international coercion examines multilateral agencies, which control financial resources sorely needed by many countries and have a considerable amount of legitimacy. Multilaterals may use their financial and moral authority to coerce domestic policy actors to adopt otherwise unacceptable policies by attaching so-called “conditionality terms” to loan agreements, thereby promoting the diffusion of market-oriented reform. Such terms comprise a “complex policy covenant” that a debtor country’s government makes with a multilateral agency when the country’s lack of economic or political collateral precludes it from borrowing through conventional private channels. The countries that enter into such a covenant, it is argued, are typically those that direly need external funding to resolve an actual or impending macroeconomic crisis.

The first amendment to the IMF charter, passed in 1952, granted the agency the ability to seek policy changes in debtor countries. The actual imposition of conditionality terms by the IMF, World Bank and other multilateral development agencies was initially rare, and the terms imposed narrow in scope. However, the average number of terms imposed on a borrowing country has risen substantially in recent years, especially during the 1990s (Buirra 2003). Some observers attribute the change in multilateral agency behavior to ideological shifts that began in the 1980s (Buirra 2003).

In 1993 the World Bank explicitly extended conditionality agreements to the infrastructure sector by making evidence of market-oriented infrastructure reform a precondition for any project lending. Systematic data on specific loans are scarce because neither the IMF nor World Bank published the terms of loan agreements prior to 1996. However, Wamukonya finds that during the period October 1998 through February 2001, 32 countries signed letters of intent

to undertake such reforms as a condition of receiving loans from the Bank (Wamukonya 2003). Anecdotal evidence also abounds. For example, the Bank lent the Democratic Republic of Congo \$120 million only under the condition that the country “strengthen regulatory authorities in the telecommunication, transport and energy sectors through technical assistance and training” (World Bank 2004a). More recently, Afghanistan borrowed \$22 million “to set up an independent Regulatory Commission (RC) and [formulate] a Telecommunications Act... Plans for eventual privatization will be augmented by an institutional strengthening exercise to ensure administration procedures and accountability meet all international quality and performance expectations” (World Bank 2004b). Bangladesh also borrowed \$9 million in order “to improve the performance of [its] telecommunications sector through strengthening elements of the policy, institutional, and regulatory framework in order to promote the competitive provision of telecommunications infrastructure and services” (World Bank 2004c). These cases are but three among many.

Unpublished empirical studies find evidence of the coercive influence of multilateral agencies on individual countries’ or groups of countries’ probability of privatizing (Brune, Garrett, and Kogut 2004), liberalizing their capital account (Brune and Guisinger 2003), adopting a bilateral investment treaty (Elkins, Guzman, and Simmons 2004) and creating an independent central bank (Pollilo and Guillén Forthcoming). Yet, despite multilaterals’ strong focus on privatization, regulatory reform and liberalization, no existing empirical work considers the efficacy of conditionality agreements in achieving these arguably more challenging reform objectives.

In cases in which the multilateral agencies are powerful enough relative to a country’s government to impose market-oriented reform in exchange for funding, we expect direct

coercion to occur. In other cases, we expect indirect coercion to occur: the IMF or the World Bank works in concert with domestic parties favoring market-oriented reform to tilt the balance of power, especially when the country requires external funding to cope with a macroeconomic or financial crisis. Whether the operative mechanism is direct or indirect, we predict that:

Hypothesis 1: Adoption of market-oriented reform elements by a given country is positively associated with the country's exposure to multilateral lenders.

Normative Emulation

World-society and neo-institutional theories propose that, in addition to responding to coercive pressures, actors embedded in a social structure may adopt similar behaviors as they seek to conform to shared norms (DiMaggio and Powell 1983; Mizruchi and Galaskiewicz 1993). This concept of "normative emulation" builds on the Durkheimian insight that social density is a determinant of social cohesion and behavioral similarity (Collins 1994). In their quest to appear appropriate within their shared social context of dense social relationships (Coleman 1988; Strang and Tuma 1993), actors that are strongly connected to one another tend to imitate each other's behavior patterns.

World-society scholars have long applied the concept of normative isomorphism to the country level of analysis, finding that policymakers emulate each other as a way to conform to shared norms and appear legitimate (Jepperson and Meyer 1991; Meyer, Boli, Thomas, and Ramirez 1997). Case-study and historical research document that government officials and bureaucrats constantly assess policy and organizational developments in other countries. Empirical studies emphasizing policy emulation among peer countries include Collier and

Messick's (1975) study of the adoption of social security systems; Kobrin's (1985) study of oil nationalizations; Guler et al.'s (2002) study of the adoption of quality certification; Brune and Guisinger's (2003) analysis of capital account liberalization; Polillo and Guillén's (Forthcoming) study of central bank independence; Lee and Strang's (2004) study of the diffusion of public sector downsizing; Elkins, Guzman and Simmons' (2004) study of the adoption of bilateral investment treaties; and Fourcade-Gourinchas and Babb's (2002) study of the diffusion of neo-liberal macroeconomic policies. This research suggests that policies directly reflect the level of normative conformity within a relevant social structure linking countries to one another.

We propose that normative emulation is more likely to take place among countries that engage in transactions more intensely with one another. Sociologists studying globalization argue that the intensity of trade relationships reflects the density of the social network in which a given country is embedded (Albrow 1997: 25; Van Rossem 1996), and therefore the level of normative conformity within the network. Trade comes hand in hand with "cultural ties" (Waters 1995: 40), and thus contributes to "establishing a relationship of identification as well as interdependence." For example, Japanese success in exporting to the U.S. market prompted many American firms to experiment with such Japanese organizational techniques as total quality management and lean production (Strang and Macy 2001). Moreover, research has shown that globalization is associated with more cohesive trading relationships (Kim and Shin 2002). We argue that countries exhibiting more cohesive trade relationships are more likely to adopt similar patterns of behavior, including privatization, regulatory separation, depoliticization, and liberalization of competition in their infrastructure industries.

Hypothesis 2: Adoption of a market-oriented reform element by a given country is positively associated with the country's degree of trade cohesiveness with other countries that have adopted the same element.

Competitive Mimicry

Whereas normative emulation refers to the isomorphic impact of the norms shared by socially cohesive actors, competitive mimicry refers to individuals' and organizations' tendency to cope with poorly understood technologies, ambiguous goals and unclear cause-effect relationships by imitating others that they perceive as their competitors. Pressure to conform arises from the need to prevent erosion of one's market position and social and political status. Imitation becomes an effective strategy under conditions of uncertainty and bounded rationality because it helps decision-makers keep search costs within reasonable limits, sort out alternatives and legitimize their actions (DiMaggio and Powell 1983; Mizruchi and Galaskiewicz 1993).

Extending this argument to the country level of analysis and the case of market-oriented reform in infrastructure industries, we argue that countries embedded in the global economic and trading system face competitive pressures that may render the adoption of legitimized policies, which have been implemented or worked effectively elsewhere, a viable strategy for promoting their economic and institutional survival (Campbell 2004: 179), and for maintaining and enhancing their status within the economic system (Meyer, Boli, Thomas, and Ramirez 1997; Van Rossem 1996). Competition among actors (or states) in a social structure such as that created by trading relationships is, in the words of Burt (1987: 1291), driven by actors' desire "to live up to their image" and "to maintain their position in the social structure." Competitors are substitutes for each other, a fact that induces status as well as economic competition (Burt 1987:

1294; see also White 2002).

It is especially important to take competitive pressures into account when attempting to measure the coercive influence of multilateral lenders. Borrower nations are in distributive conflict with each other not only for international aid funds, but also for other international resources such as export markets and import sources. Failure to include a measure of competitive pressures in an empirical analysis thus poses the risk of conflating coercive influences with mimetic ones.

We conceptualize competitive mimicry in terms of role equivalence (Winship and Mandel 1984). Rather than consider the specific identities of the nodes in the network (countries), we focus on the nature of the relationship between nodes, which we define as trade in a particular type of product. Following the sociology of the world-system (Smith and White 1992; Van Rossem 1996), we define a country's role set to include the total amount of each different product that it exports and each different product that it imports. Role equivalence is the overlap between two countries' role sets.⁴

We employ the concept of role equivalence rather than structural equivalence because the latter does not reflect meaningful competition in the context of trade. For example, if countries A and B each trade the same products to a different set of countries, they are role equivalent but not structurally equivalent. Conversely, if they each trade different products to the same set of countries, they are structurally equivalent but not role equivalent. Thus, two countries may be structurally equivalent (that is, trade with the same third parties) without trading in the same

⁴ Winship and Mandel (1984) define role equivalence using a nested pair of dyad-by-dyad distance measures but note that other approaches are possible.

goods (Guler, Guillén, and Macpherson 2002). In contrast, role-equivalent countries face present and potential competition with each other in the same category of products.

Countries that compete with each other in the same product markets are likely to adopt similar patterns of behavior in order not to lose ground to others (Elkins, Guzman, and Simmons 2004; Guler, Guillén, and Macpherson 2002; Pollilo and Guillén Forthcoming). Suppose that countries A and B trade with the rest of the world in the same product categories, and are thus role equivalent. Even when countries A and B trade with different third countries, the adoption of market-oriented infrastructure reform elements by country A will likely prompt country B to follow suit for two mutually reinforcing reasons. First, the two countries are more likely to monitor each other and seek to learn from each other if they are competitors in trade. In other words, competitive relationships create a social channel for comparison, communication, and mimicry. Second, because the adoption of market-oriented infrastructure reform sends a positive signal to the international financial and investment community, country B will likely imitate infrastructure reform by country A if the two are role equivalent, in an effort to maintain its economic status and social prestige in the network of trade. We therefore predict that:

Hypothesis 3: Adoption of a market-oriented reform element by a given country is positively associated with the country's degree of role equivalence with other countries that have adopted the same element.

The Domestic Context of Market-Oriented Reform

Although we emphasize the role that international influences play in a country's decision to adopt market-oriented infrastructure reform, domestic factors clearly matter as well. Indeed, much of the existing research on the diffusion of market-oriented infrastructure reform focuses

exclusively on such domestic factors. The arguments tend to borrow heavily from political economy, and highlight country-level characteristics that alter policymakers' perceived costs and benefits of such reform (Hallerberg and Basinger 1998; Murillo 2001; Murillo 2002).

Industry Performance. Because political actors are relatively certain about the outcomes that an existing policy will produce but view reform as creating uncertain long-run political benefits and large or uncertain short-run political costs, they are typically likely to maintain the status quo (Drazen and Grilli 1993; Fernandez and Rodrik 1991). However, the poor economic performance of a state-owned infrastructure industry (Henisz and Zelner 2005) may serve as a “focusing event” (Kingdon 1984: 106) that, by increasing political actors' short-run costs of inaction (Hoffman 1999; Seo and Creed 2002), moves major policy reform—such as the adoption of market-oriented policies—to the top of the policymaking agenda (Jones, Baumgartner, and True 1998).

Poor industry performance may result partly from exogenous factors. For example, beginning in the late 1980s countries in Latin America, Southeast Asia and the former Eastern Bloc confronted trends such as input price inflation, unprecedented demand growth and increased industrialization, all of which placed economic strain on state-owned utilities (Henisz and Zelner 2005). Yet, the core problem that ultimately triggered reform in most cases was endogenous (Campbell 2004) to the system of state ownership itself. Because many governments used state-owned utilities as a vehicle for providing subsidies to politically important interest groups (Henisz and Zelner 2006), such as labor and the middle class, they were forced to finance an increasing fraction of capital investment using general revenue rather than utility-generated profits. Exogenous factors only increased the difference between costs and revenues.

Studies examining the effect of industry-level performance on the adoption of telecommunications or electricity reform implicate the enormous debt burden that many governments bore as the result of state-owned enterprises' cumulative deficits (Petrazzini 1995; White 1996). Indeed, this burden was so large in some countries that it precipitated a full-blown macroeconomic crisis, which in turn led to the adoption of market-oriented reform. Empirical support for the positive effect of economic crises on the adoption of market-oriented reform can be found in sociological studies of the adoption of neo-liberal reform generally (Armijo and Faucher 2002; Remmer 1998).

Fiscal Position. Even when a government's poor fiscal position has arisen for reasons other than a struggling industry, incumbent political actors may choose to privatize because the added short-term revenue from doing so can alleviate fiscal problems and thus increase their popular support. Because virtually all governments employ a form of "cash" (as opposed to accrual) accounting, the sale of state-owned assets to private parties generates short-term revenue for the government without creating an offsetting reduction in balance sheet assets. Moreover, even when the loss of this revenue stream is implicitly noted, the increased operating efficiency that private owners of previously state-owned assets typically achieve (Megginson and Netter 2001) usually leads investors to bid above the net present value of the assets under government ownership, creating an incentive for governments—especially cash-strapped ones—to privatize.

Ideology. In addition to their individual incentives to maintain support, political actors also subscribe to broader ideologies that influence their propensity to adopt market-oriented reform. Murillo (2002) argues that when countries privatize their electricity and telecommunications industries and political actors' "partisan beliefs" favor high state intervention, a depoliticized ("autonomous") regulator results, whereas a politically subordinate

one results when such beliefs favor low state intervention. These beliefs are likely to be correlated with left-right measures of political actors' ideological orientation. Consistent with this proposition, Shleifer and Vishny (1994) argue that right-of-center political actors weigh total economic welfare maximization more heavily than they do income redistribution and thus favor less state intervention in the economy, suggesting a proclivity to adopt privatization, whereas left-of-center executives emphasize the negative impact of reform on income distribution and employment. Quinn and Toyoda's (2004) finding that a country's Communist party vote share is negatively associated with its adoption of financial liberalization supports this argument in the context of the diffusion of another neo-liberal reform

Longevity of Political Regime. The longevity of a political regime may affect political actors' incentives to adopt market-oriented reform. Banerjee & Munger (2002) argue that new political regimes or leaders have a greater propensity to undertake reform because they are more likely to be in office when its medium- and long-run benefits become visible (see also Williamson 1993 on the "honeymoon effect.") However, they also note that, as Cukierman and Leviatan (1992) suggest, it may be the case that longer-lived regimes have amassed the credibility necessary to undertake controversial market-oriented reform.

Political Institutions. The structure of domestic political institutions affects the costs that policymakers seeking reform must bear in order to effect actual policy change (North 1990; Persson 2001; Tsebelis 2002). Institutions that create effective checks and balances on individual and institutional political actors limit the ability of such actors to alter policy unilaterally, thereby

generating a status quo bias in policy (Henisz 2000; Tsebelis 2002)⁵ and reducing the likelihood of reform. Several cross-national empirical studies linking a country's level of policy stability to the number of veto points in its policymaking apparatus support this contention (Franzese Jr. 1999; Hallerberg and Basinger 1998; Henisz 2004; Treisman 2000).

At the same time, an increased level of checks and balances may exert a positive influence on reform adoption through its effect on investor perceptions. Investors are more likely to participate in infrastructure industries in countries whose domestic institutional environment offers a stronger safeguard against the future rollback or reversal of market-oriented reform (Henisz 2002; Henisz and Zelner 2001; Stasavage 2002). The increased revenue-raising potential of market-oriented reform in a country with strong checks and balances thus increases political actors' potential benefit from adopting such reform. Empirical evidence on market-oriented reform in telecommunications and electricity is consistent with the proposition that stronger checks and balances promote rather than deter successful reform, suggesting that the positive effect of increased credibility more than offsets the negative effect of the status quo bias created by greater checks and balances (Heller and McCubbins 1996; Henisz and Zelner 2005; Levy and Spiller 1994).

Technology. Specific beliefs about the economics of infrastructure also affect political actors' propensity to adopt market-oriented reform. The traditional neoclassical economic rationale for state ownership or price regulation is that infrastructure industries are a form of "natural monopoly" in which government intervention is necessary to protect consumers'

⁵ In macroeconomic jargon, strong institutional constraints on policymaking enhance the credibility of policy initiatives by increasing their "time consistency."

interests. However, technological innovations have reduced the validity of this argument. In electricity, new generation technologies have reduced the minimum efficient scale of a generating plant while information technologies permit tighter coordination between independent upstream and downstream stages of production. In telecommunications, digital switching technologies have eased the sharing of infrastructure by multiple providers. These innovations have facilitated the adoption of market-oriented reform, especially privatization and liberalization (Gilbert and Kahn 1996)

EMPIRICAL SETTING, DATA, AND METHODS

The telecommunications and electricity industries provide an excellent empirical setting in which to examine the impact of domestic and international factors on the adoption of the market-oriented reform elements of privatization, regulatory separation, regulatory depoliticization and liberalization. As noted above, a trend of adoption began to gather speed during the 1980s, and by the end of the 1990s, 65 percent the 190 countries and territories for which we have data had introduced at least one of these four elements in telecommunications, while 49 percent had done so in electricity (see Table 1). The countries that adopted early, and those that have adopted most comprehensively (that is, all four reform elements), represent a variety of geographic regions, income levels and development levels. Table 2 lists the first 15 adopters of any element and all of the countries that have attained all four elements in each industry.

Data

We test our hypotheses using an unbalanced cross-national panel data set on the adoption of market-oriented reform elements in up to 71 countries between 1977 (when Chile, the first modern reformer, adopted an element of reform) and 1999 (the last year for which we have complete data). The unit of analysis is the country-year. Country is a natural choice for the cross-sectional unit in this study because the decision to adopt market-oriented reform in electricity or telecommunications is typically made at the national level, and in most countries around the world telecommunications and electricity were historically organized as state-owned monopolies. Table 1 shows the number of countries that had enacted each reform element by year during the period 1977 – 1999. (Supplemental Table 1 displays the data by country.)

Data on the timing of adoption are drawn from multiple secondary sources, including the International Telecommunications Union (ITU), the International Energy Agency (IEA), other international agencies, national regulatory agencies, press reports and third-party analyses.⁶ These data are combined with macroeconomic information from the World Bank's World Development Indicators, sector-specific information from the ITU and IEA, and political data from the Political Constraints Database.

⁶ The telecommunications reform variables come from the ITU. For the electricity reform variables, we supplement information available from the IEA with data from the OECD International Regulation Database, the World Bank's International Directory of Utility Regulatory Institutions, and the websites of national regulatory agencies and ministries. In instances where our data conflicts with those from Levi-Faur (2003) and Murillo (2000), our coding has been validated using multiple independent sources.

Dependent Variables. We run separate regressions for telecommunications and electricity in order to ensure that our results are robust to choice of industry. Our data include the year (if any) in which a country attained each of the four reform elements. We identify the year in which privatization occurred in each industry as that in which the government first sold a majority stake in the relevant state-owned utility (and examine alternate definitions in our robustness analysis). We identify the year in which regulatory separation occurred as that in which the regulatory authority was formally separated from the executive branch, and the year in which regulatory depoliticization occurred as that in which the regulatory authority is judged in actuality to have become wholly independent or autonomous from the influence of this branch. We identify the year of liberalization of telecommunications as that in which competition in long distance telephony first occurred, and the year of liberalization of electricity as that in which private generation for sale first occurred. Thus, there are four potential reform element adoptions for each country-year in each industry.

Coercive Pressures. We measure the strength of the coercive pressures that multilateral lenders exert on a country as the ratio of the country's level of borrowing from the World Bank and IMF to the country's gross domestic product (GDP). Compared to the alternative measure of actual infrastructure project-based loan agreements, this measure has two advantages. First, it is relatively independent from the domestic political economic factors that may generate pressure for reform at a given point in time. Second, it reflects possible extra-sectoral linkages in country loan packages that the alternative measure would not. For example, in the prominent cases of a \$46 billion Indonesian lending program in 1997 and a \$2.6 billion program to the Ukraine in 2001, a multilateral refused to disburse loan funds to a country in the midst of an exogenous macroeconomic and financial crisis until the government reluctantly agreed to undertake market-

oriented infrastructure reform. Even if we were to set aside issues of endogeneity and unobserved extra-sectoral linkages, data on the contents of individual loans are publicly available for only a limited time period and number of countries (Goldstein 2001).

Normative Pressures for Emulation. We measure normative pressures for emulation by constructing a country-specific trade cohesion measure that, for each market-oriented reform element, assigns greater weight to the prior adoption decisions of more closely-tied countries. The weight assigned to the adoption decision of each of a given country's trading partners is the share of the focal country's total trade that trade with that partner represents. Table 3 reports, for the full sample for each industry and two subsamples, a country's average trade cohesion measure with other countries that have adopted a given reform element. Countries in the subsample of those that have adopted a given reform element do more trade on average with other countries that have adopted the same element, relative to the average level of trade with such countries for the entire sample. Conversely, countries in the subsample of those that have not adopted a given reform element do less trade on average with other countries that have adopted that element. Our measure of trade-based cohesion has been used by sociologists studying international diffusion patterns (Guler et al. 2002; Polillo and Guillén, 2005).

Pressures for Competitive Mimicry. We measure pressures for competitive mimicry by constructing another country-specific measure, in which the weights on the prior adoption decisions of other countries reflect the extent to which they are role-equivalent with the focal country, i.e., compete in similar international export and import markets (excluding petroleum markets). Role-equivalent country-pairs need not be cohesive. For example, country-pairs trading in similar products to third countries in 1999 include Azerbaijan-Iran, Guatemala-Honduras, United States-Mexico and United States-United Kingdom. Of these four pairs,

Azerbaijan-Iran is the least cohesive: only 3.6 percent of Azerbaijan's total trade is with Iran, and less than 0.5 percent of Iran's trade is with Azerbaijan. In contrast, the United States and Mexico are the most cohesive, accounting for 81.1 percent of and 11.3 percent of trade with each other, respectively.

Table 4, which reports average role-equivalence measures by subsample, is analogous to Table 3. The figures in the former are necessarily smaller than those in the latter because there do not exist any perfectly role equivalent countries. However, as can be seen, the clustering of adoption decisions is even more dramatic. On average, countries that have adopted a given reform element are considerably more role-equivalent than are countries in the full sample, and those that have not adopted a given reform element are considerably less role-equivalent than are countries in the full sample. Like our measure of trade-based cohesion, our measure of role equivalence has been used by sociologists studying international diffusion patterns (Guler et al. 2002; Polillo and Guillén, 2005).

Other independent variables. We include additional independent variables to reflect domestic factors including industry performance, fiscal position, technological change, ideology, regime longevity, and checks and balances. We proxy for performance with two commonly employed measures, the ratio of the number of customers waiting for telecommunications services to the number of customers currently served (Petrazzini 1995) and the percentage of electricity that is generated but lost in transmission or distribution. A high value of either measure indicates a clear performance shortfall in the sector. Each measure is more widely available than potential alternatives such as the percentage of calls completed, hours of brownouts or blackouts, and various productivity metrics. In order to capture fiscal strain on the government as a whole, we include the public sector budget balance.

We rely on the Database of Political Institutions (Beck, Clarke, Groff, Keefer, and Walsh 2001) for measures of the ideology of the chief executive and regime durability. We allow for the impact of technological change with a linear time trend variable that takes a value of zero in the base year of our analysis (1977) and increases by one each year. Our results are also robust to less restrictive time fixed effects.

We measure checks and balances using the Political Constraints Index (*POLCON*) developed by Henisz (2000).⁷ The first step in constructing this time-varying index is the identification of the number of independent branches of government (executive, lower and upper legislative chambers, judiciary and sub-federal institutions) with veto power over policy change in each country. Countries lacking any formal veto points receive a score of 0. For all other countries, the majority preference of each of these branches and the status quo policy are then assumed to be independently and identically drawn from a uniform, unidimensional policy space [0,1]. This assumption allows for the derivation of a quantitative measure of institutional constraints using a simple spatial model of political interaction. This initial measure is then modified to take into account the extent of alignment across branches of government using data on the party composition of the executive and legislative branches. Alignment across branches increases the feasibility of policy change, thereby reducing the level of political constraints. The measure is then further modified to capture the extent of preference heterogeneity within each legislative branch. Greater within-branch heterogeneity increases (decreases) the costs of

⁷ Data and codebook are available from

<http://www-management.wharton.upenn.edu/henisz/POLCON/ContactInfo.html>

overturning policy for aligned (opposed) branches. The final measure of *POLCON* can take on values ranging from zero (least constrained) to one (most constrained).

In order to account for the role of any scale economies (or diseconomies) as country size increases, we include the log of a country's population as well as the percentage of the population that resides in urban areas. Additionally, we include the log of per capita GDP as a rough measure of resources and economic structure.

Table 5 provides summary statistics for the dependent and independent variables in our analysis for the full sample (190 countries) and the subsamples used in the primary specification for telecommunications (up to 69 countries) and electricity (up to 71 countries). Unfortunately, the data on bilateral trade, sector performance and the government budget balance are available for less than half of the total cases in our dataset. The subsamples that result from casewise deletion of missing observations disproportionately contain wealthy and populous countries with stable political regimes (see Table 5). Supplemental Table 2 provides a correlation matrix for the full sample. We lag all independent variables one period to reduce the potential for endogeneity.

Methods

We estimate policy reform adoption rates using a multivariate probit analysis, a technique that assesses the influence of a set of covariates on the incidence of multiple possible events, where the errors across the equations may be correlated and the strength of these correlations is estimated. Each of the four dependent variables is a binary indicator that takes a value of one if the country has adopted a given reform element by the end of a given year, and zero otherwise. The multivariate probit model thus has a structure similar to that of a seemingly unrelated regression (SUR) model, except that the dependent variables are dichotomous indicators.

More formally, for each industry we estimate:

$$\begin{aligned}
 y_1^* &= \beta_1' x_1 + \varepsilon_1, y_1 = 1 \text{ if } y_1^* > 0, 0 \text{ otherwise} \\
 y_2^* &= \beta_2' x_2 + \varepsilon_2, y_2 = 1 \text{ if } y_2^* > 0, 0 \text{ otherwise} \\
 y_3^* &= \beta_3' x_3 + \varepsilon_3, y_3 = 1 \text{ if } y_3^* > 0, 0 \text{ otherwise} \\
 y_4^* &= \beta_4' x_4 + \varepsilon_4, y_4 = 1 \text{ if } y_4^* > 0, 0 \text{ otherwise} \\
 E[\varepsilon_1] &= E[\varepsilon_2] = E[\varepsilon_3] = E[\varepsilon_4] = 0 \\
 \text{Var}[\varepsilon_1] &= \text{Var}[\varepsilon_2] = \text{Var}[\varepsilon_3] = \text{Var}[\varepsilon_4] = 1 \\
 \text{Cov}[\varepsilon_1, \varepsilon_2] &= p_{1,2}; \text{Cov}[\varepsilon_1, \varepsilon_3] = p_{1,3}; \text{Cov}[\varepsilon_1, \varepsilon_4] = p_{1,4}; \\
 \text{Cov}[\varepsilon_2, \varepsilon_3] &= p_{2,3}; \text{Cov}[\varepsilon_2, \varepsilon_4] = p_{2,4}; \text{Cov}[\varepsilon_3, \varepsilon_4] = p_{3,4}
 \end{aligned}$$

in Stata using the `mvprobit` command.⁸ The `mvprobit` command implements this model using a simulated maximum likelihood (SML) estimator, which, “under standard conditions... is consistent as the number of observations and the number of draws tend to infinity, and is asymptotically equivalent to the true maximum likelihood estimator as the ratio of the square root of the sample size to the number of draws tends to zero” (Cappellari and Jenkins 2003). The specific simulator that `mvprobit` uses is the Geweke-Hajivassiliou-Keane (GHK) simulator, which “exploits the fact that a multivariate normal distribution function can be expressed as the product of sequentially conditioned univariate normal distribution functions, which can be easily and accurately evaluated” (Cappellari and Jenkins 2003). We cluster the standard errors by country in order to address the lack of independence of multiple observations from the same cross-sectional unit.

⁸ Data analysis was performed using version 7.0 of `mvprobit` in Stata 7.0, Stata 8.2 and intermediate releases.

EMPIRICAL RESULTS

The International Context of Market-Oriented Reform.

International Coercion. Table 6 displays our empirical results. We report separate parameter estimates and significance tests for each of the four dependent variables for the electricity and telecommunication industries. These results provide partial support for Hypothesis 1. The coefficient estimates for multilateral exposure in each of the eight equations are positively signed, but not all are statistically significant. In electricity, exposure to multilateral lenders is positively and significantly associated with majority privatization and regulatory separation. In telecommunications, exposure to multilateral lenders is positively and significantly associated with regulatory separation, and positively and weakly significantly ($p = 0.077$) associated with majority privatization.

The magnitude of the effects is substantial. For example, as shown in the lower panel of Table 7, a country borrowing from multilateral institutions in an amount one standard deviation above the sample mean level is 1.52 times as likely to formally separate regulatory authority from the executive branch in the telecommunications industry (14.68 percent) as is a country with exposure equal to the sample mean (9.65 percent). For severely indebted countries whose borrowing from multilaterals is equal to half of their gross domestic product, the likelihood of adoption is 4.46 times greater (43.06 percent versus 9.65 percent). The positive effects of multilateral borrowing on the adoption of majority privatization in telecommunications and regulatory separation in electricity are of similar magnitude. Multilateral borrowing has the greatest impact on privatization in the electricity sector (see Table 7).

A likely explanation for the positive association between multilateral exposure and the reform elements of majority privatization and regulatory separation, but not regulatory depoliticization and market liberalization, involves the lower observability and enforceability of the latter two elements. Majority privatization is relatively easy for the multilateral lenders imposing conditionality terms to observe, as is the formal separation of the regulatory authority from the executive branch. In contrast, the reform element of regulatory depoliticization—the de facto elimination of executive influence on the regulatory authority (as opposed to de jure separation)—is more difficult to observe and enforce, and market liberalization—the actual entry of competitive service providers—is more difficult to enforce. The multilateral agencies may therefore be favoring the imposition of de jure conditionality terms at the expense of bona fide reform, or at least are considerably less effective at attaining the latter. This interpretation is consistent with the oft-noted increased difficulty that multilateral agencies have had in obtaining compliance with the structural policy objectives specified in relatively recent conditionality agreements (such as improvement in financial market supervision, stronger enforcement of antitrust laws and the creation of an independent regulatory authority) relative to their success in obtaining compliance with the terms specified in early conditionality agreements (such as reduced public borrowing, the retardation of money supply growth, the raising of interest rates, reduced public sector employment, the lowering of tariffs, simplification of the tax code and the termination of import quotas).

Additional support for our interpretation of the differential effects of multilateral exposure on the attainment of specific reform elements comes from the results of an alternative specification for each industry that is identical to the main specification in every respect except that the dependent variable in the depoliticization equation is a weaker measure (reflecting a

judgment that the regulatory authority is semi-autonomous, as opposed to fully autonomous).⁹ As in the main electricity specification, exposure to multilateral lenders is positively and significantly associated with majority privatization and regulatory separation, but not with liberalization. Similarly, in telecommunications, exposure to multilateral lenders is again positively and significantly associated with regulatory separation, and positively and weakly significantly ($p = .086$) associated with majority privatization. However, multilateral exposure is now positively and significantly associated with depoliticization in electricity, and positively and weakly significantly ($p = .070$) associated with depoliticization in telecommunications. In each case, the magnitude of the multilateral exposure coefficient in the depoliticization equation is similar to that of the multilateral exposure coefficient in the regulatory separation equation (between 2.74 and 3.09). Thus, the multilaterals appear to have been roughly as effective at attaining a small degree of de facto depoliticization as they have been at attaining de jure separation. Because this smaller degree of de facto depoliticization (“semi-autonomy”) is likely easier to observe and enforce than the larger degree of de facto politicization (“full autonomy”) measured by the variable used in the main specification for each industry, the multilaterals’ greater efficacy in attaining the former is consistent with our interpretation of the results from our main industry specifications as reflecting differences in observability and enforceability.

Normative Emulation and Competitive Mimicry. We find some support for Hypothesis 2 (normative emulation) in the case of telecommunications, where regulatory separation and market liberalization by trade-related peer countries boost adoption. In the case of electricity, our results indicate that privatization by trade-related peer countries reduces adoption, but as shown in Table 7, the estimated magnitude of this effect is quite small. We also find a

⁹ These and all additional results reported below are available from the authors.

weakly statistically significant association ($p = .072$) for the adoption of regulatory separation by trade-related peer countries.

We find some support for Hypothesis 3 (competitive mimicry) as well. In the case of telecommunications, one element (depoliticization of the regulatory authority) shows evidence of competitive mimicry, whereas in the case of electricity, two of the four reform elements (separation of regulatory from operational authority and depoliticization of the regulatory authority) do. The magnitude of these effects is substantial (see Table 7).

Given the differing importance of the trade cohesion and role equivalence measures in explaining adoption of the four reform elements and the high correlation between the two measures, it is useful to consider the results of regressions including only one of the measures. Removing the trade cohesion measure increases the number of equations with a marginally significant coefficient estimate on the role equivalence measure by one for each industry, and removing the role equivalence measure increases the number of equations with a marginally significant coefficient estimate on the trade cohesion measure by one for each industry.

We attempt to shed additional light on the relative effects of normative emulation and competitive mimicry by omitting from our estimating equations independent variables (other than those of theoretical interest) whose missing values substantially reduce the sample size. Doing so increases the statistical power of our analysis, albeit at the expense of increased omitted variable bias. The results obtained show a more consistent pattern of support for the effect of prior adoption of reforms by role-equivalent countries than for that of prior adoption by trade-cohesive countries. Thus, we find slightly stronger support for the presence of competitive mimicry than we do for the presence of normative emulation.

It also instructive to examine the results of regressions that omit both the trade cohesion and the role equivalence measure. As discussed in the Introduction, analyses that include measures of coercion but exclude these other two international influences may produce biased results. This possibility is especially significant in the context of ongoing academic and policy debates about the moral propriety and effectiveness of conditionality programs, which revolve around the issue of coercion. When both the trade cohesion and role equivalence measures are eliminated from our model, the coercive effect of multilateral borrowing continues to be significant in the case of regulatory separation in both sectors and of privatization in electricity. In addition, it exerts a significant effect on liberalization in telecommunications, and the marginally significant effect on privatization vanishes.

Finally, Supplemental Table 3 summarizes the results from a model that excludes all domestic influences and one that excludes domestic political influences (but includes domestic economic influences). In both cases, the results are generally consistent with those that we report for the full model in Table 6.

The Domestic Context of Market-Oriented Reform.

Turning to the independent variables that capture the economic motivations for reform, we find that our proxy for industry performance in the electricity sector (line losses in transmission and distribution) is positively associated with regulatory separation, majority privatization and market liberalization. We do not obtain similar results in the telecommunications sector. In both cases, our inability to measure costs of production and the prices charged to various consumer classes reduce our ability to identify performance effects more precisely. Contrary to our expectations, we find no evidence of a link between budget

deficits and reform, and in two cases (regulatory separation and liberalization in telecommunications), we find that countries are more likely to undertake reform when they possess a budget surplus. One potential explanation for these findings is that in addition to the financial incentive to privatize discussed above, political actors may also recognize the costly and long-term nature of the reform process, and only initiate it when they have sufficient slack resources. Our empirical results are consistent with the possibility that these offsetting incentives balance each other out.

The results from our independent variables intended to capture the impact of domestic political factors are also mixed. Ideology plays no apparent role in the likelihood of reform, except that a left-leaning government is less prone to engage in privatization of electricity, and that longer-lived political regimes are more inclined to engage in liberalization of telecommunications. We find a positive association between the level of checks and balances in domestic political institutions (i.e., political constraints) and the adoption of market liberalization in both telecommunications and electricity, suggesting that in the absence of such checks and balances, regulatory reforms designed to protect small entrants are not perceived as credible. We also find a weak ($p=0.066$) positive association between checks and balances and privatization in the electricity sector.

Finally, the passage of time, which proxies for the impact of technological change, is positively associated with all four reform elements in telecommunications, and (weakly) with regulatory separation in the case of electricity.

Forward-Looking Predictions

Another way of examining the predictive power of our model is to review the post-1999 experience of the non-adopting countries with the highest predicted probability of adopting a given reform element in 1999. The ITU dataset contains information from after 1999, the threshold that we use in our analysis. Our results indicate that the countries that had the highest probability of separating operational from regulatory authority in 1999 but had not yet done so were Uruguay, Romania, Algeria and Latvia. Algeria adopted this reform element in 2000, Uruguay and Latvia did so in 2001, and Romania followed in 2002. In the case of depoliticization, the non-adopters that had the highest predicted probability of adoption in 1999 are Argentina, Poland, Thailand and Turkey. Turkey adopted this reform element in 2000 and Thailand followed in 2004. Among non-adopters, Uruguay, Singapore and Australia had the highest predicted probability of privatizing the majority of their state-owned telecommunications firm in 1999; Australia is now considering doing so in 2005. Argentina, Turkey and Portugal were the non-adopters in 1999 that had the highest probability of adopting competition in long distance telephony; Argentina and Portugal adopted this reform element in 2000, and Turkey followed in 2003. Thus, our model quite accurately predicts the adoption of reform elements beyond the final year of our sample.

Robustness Checks

Our results are robust to the inclusion of additional variables, different definitions of cohesion and role equivalence, different lag structures, and the possibility that financial or other crises are simultaneously influencing increases in multilateral exposure and market-oriented reform.

Omitted variable bias. We check for omitted variable bias by adding to our core specifications covariates that could plausibly influence the dependent variable, including two measures of the openness of the host country economy (trade and foreign direct investment), two measures of the level of debt service (as a percentage of GDP and exports), a measure of financial vulnerability (central bank reserves as a percentage of imports), two measures of the size of government (expenditure and revenue), two measures of host country growth prospects (population and income) and indicator variables for contemporaneous or one-year lagged changes in the political leadership (as opposed to durability of the political regime, which is included in the primary specification), for post-1989 transition economies and for members of the European Union or Organization for Economic Cooperation and Development. We also redefine trade cohesion and role equivalence to take into account exports alone instead of total trade. Additionally, we recalculate these measures to include petroleum products. The coefficient estimates of theoretical interest are stable in each of these permutations (results available from authors upon request).

Lag Structure. A potential explanation for our results demonstrating that multilateral exposure has a stronger effect on privatization and the separation of regulatory from operational authority is the short lag (one year) that we use in our primary specification. Specifically, it may take more than one year to create a depoliticized regulatory authority or a competitive infrastructure service industry. We address this potential concern by extending our lag to three and five years and still find no support for a relationship between multilateral exposure and regulatory depoliticization or liberalization in either industry

Relevant Sample Period. As noted above, since 1993 the World Bank has explicitly tied infrastructure lending to the adoption of market-oriented reform. Results for the period 1979 –

1992 only are similar to those for the period 1993 – 1999, with the effect of coercion larger in economic magnitude during the latter period. Changing the base year of the analysis to 1960 does not alter the pattern of significant results either.

Simultaneity. Given our acknowledgement of the role of domestic economic and political factors in reform adoption, and the role ascribed to these same factors in Vreeland's (2003) analysis of a government's decision to seek an IMF program and the IMF's decision to grant this request, we allow for the possibility that a country's choices to ask multilateral lenders for a loan and adopt market-oriented infrastructure reforms may be simultaneously determined. Specifically, we employ a two-stage model whose first stage mirrors Vreeland's (2003) depiction of the domestic economic and political factors that influence the adoption and granting of a multilateral lending program, and whose second stage includes these variables as well as the predicted probability that a government will seek a multilateral loan, and that multilateral lenders will grant this loan, as estimated in the first-stage regression. We find no substantive change in the results reported above.

Sample selection bias. To insure that the bias in our estimating sample relative to the population of countries undertaking reforms is not influencing our results we ran a two-stage estimation in which we predicted the probability of a country's being in the estimating sample, and then used the predicted value of the dependent variable from this first stage regression as an independent variable in our primary specifications. None of the results reported above changed in any substantive manner. The predicted probability of being in the sample did, in some specifications, exhibit a negative association with the incidence of reform, suggesting that, were we to possess data on the omitted countries, they would be more likely to have undertaken reform. From the first-stage regression we also know that these countries would tend to be small

and poor and have a young political regime and, as a result, would be more likely to have a high degree of multilateral exposure. Thus, the potential bias in our estimating samples would produce conservative estimates of the economic magnitude of the effects of interest.

DISCUSSION AND CONCLUSION

We simultaneously assess the impact of three international influences (international coercion, normative emulation and competitive mimicry) on the adoption of privatization, regulatory separation, regulatory depoliticization and market liberalization in two infrastructure industries, telecommunications and electricity. We find that, after taking domestic political and economic factors into account, international forces have a strong effect on the domestic adoption of market-oriented infrastructure policies. Moreover, this effect varies by reform element. International coercive pressures increase the likelihood of majority privatization and regulatory separation, but not of regulatory depoliticization and liberalization of competition. Normative emulation among countries increases regulatory separation and market liberalization in telecommunications only. Competitive mimicry increases the likelihood of regulatory depoliticization in both electricity and telecommunications, and of depoliticization in telecommunications.

Our analysis provides a more nuanced perspective than does prior work that either champions (Sachs 2000) or challenges (Garrett 1995; Garrett 2000; Guillén 2001a; Guillén 2001b) the effect of capital market integration on policy convergence, or questions whether multilateral lending packages actually influence domestic policy outcomes (Przeworski and Vreeland 2000; Ul Haque and Khan 1998). It also further illuminates the debate about the

blanket desirability of market-oriented reform. Citizens in a country pressured into market-oriented infrastructure reform when poor industry performance does not create demands for such reform, or when the national policymaking apparatus lacks sufficient checks and balances to support a well-organized market, may fare worse than those in a country adopting reform as the result of clear performance shortfalls and in the presence of domestic institutional support. The adoption of policies in response to international pressures may thus help explain resistance to market-oriented reform, both domestically and globally.

Perhaps the most important implication of our analysis involves the differential effects of international pressures on individual reform elements. Despite the normative policymaking prescription espoused by the World Bank, the International Monetary Fund and some academics that countries should undertake privatization, regulatory reform and market liberalization in tandem, we find that multilateral exposure has a positive effect on privatization and formal regulatory separation, but not on de facto regulatory depoliticization and market liberalization. Privatization of state-owned utilities coupled with de jure regulatory reform only, and unaccompanied by any true competition, imbue private (and often foreign) investors with unchecked market power and is thus likely to have a deleterious effect on consumers and citizens. In such a case, citizens in “reformed” countries may end up worse off, fueling a domestic political backlash against market-oriented reform. Indeed, the current backlash against neo-liberalism in many parts of the world is driven partly by the fact that local and foreign investors have benefited from reforms disproportionately.

Our analysis is limited in two primary respects. First, we opt to conceptualize and assess the impact of macro-level variables on the history of market-oriented reform in a large sample of countries. Thus, some of our empirical measures are relatively coarse indicators of the micro-

level influences at work. In-depth comparisons of a handful of countries, or intensive case studies of individual countries, enable a more thorough understanding of political dynamics and decision-making, but at the cost of reduced external validity. Although we choose to emphasize generality rather than detail, we acknowledge the value of more specific comparisons and case studies, and view these approaches as complementary to ours. In the current paper, we incorporate the insights of more detailed case studies and comparisons to the extent feasible, and seek to ameliorate measurement problems by conducting a battery of robustness checks involving different industries, variable definitions, lag structures, and simultaneous cause-effect relationships. The fact that such additional tests yield similar results enhances the credibility of our findings.

The second limitation involves our inability to distinguish between direct and indirect coercion effects, both of which contribute to the adoption of reform. This problem, too, relates to the trade-offs between large-sample research and more detailed case studies or comparisons. To wit, analyses of the latter two types are better able to identify and measure complex cause-effect relationships operating through multiple channels. Future research can perhaps develop more detailed indicators and provide more precise tests of the central proposition that international coercion, whether direct or filtered through domestic dynamics, exerts a major influence on policymaking.

Our analysis speaks to broader questions about globalization. Clearly, domestic policymaking cannot be understood without an appreciation of cross-national dynamics, as world-system and world-society theorists have long emphasized. Put simply, globalization is affecting the domestic affairs of countries. Historically, the interaction of societies has produced a great diversity of outcomes, ranging from mutual enrichment to decline, and even to

destruction of one or more parties. Our results suggest that it is precisely the heterogeneity in the effects of globalization that makes cross-national dynamics so important to study.

Our study is but the first step in a research program examining the extent to which the exertion of pressures for market-oriented reform produces desirable outcomes. Future studies of reform adoption should include the institutional forces emphasized by neo-institutional sociology and world-society scholars as well as the economic and political forces highlighted by scholars in political economy. Attempting to identify the determinants of market-oriented infrastructure reform without acknowledging the importance of the forceful espousal of this notion by the World Bank and International Monetary Fund ignores the leverage that multilateral lenders possess as well as the power of ideas. Similarly, the assessment of policy reform in countries subject to similar levels of international coercion, normative emulation and competitive mimicry must take into account differences in domestic economic and political factors to produce meaningful conclusions.

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