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International Coercion, Emulation and Policy Diffusion: Market-Oriented Infrastructure Reforms, 1977-1999

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ABSTRACT

Why do some countries adopt market-oriented reforms such as deregulation, privatization and liberalization of competition in their infrastructure industries while others do not? Why did the pace of adoption accelerate in the 1990s? Building on neo-institutional theory in sociology, we argue that the domestic adoption of market-oriented reforms is strongly influenced by international pressures of coercion and emulation. We find robust support for these arguments with an event-history analysis of the determinants of reform in the telecommunications and electricity sectors of as many as 205 countries and territories between 1977 and 1999. Our results also suggest that the coercive effect of multilateral lending from the IMF, the World Bank or Regional Development Banks is increasing over time, a finding that is consistent with anecdotal evidence that multilateral organizations have broadened the scope of the "conditionality" terms specifying market-oriented reforms imposed on borrowing countries. We discuss the possibility that, by pressuring countries into policy reform, cross-national coercion and emulation may not produce ideal outcomes.

Keywords: Privatization, deregulation, liberalization, infrastructure, International Monetary Fund (IMF), World Bank, Multileral Institutions, Development, Reform, Globalization, Adoption, International

JEL Classifications: O19, F02, F42, H11, L33, L96, L94, N70, P16, C41

INTRODUCTION

The last two decades of economic globalization have been accompanied—and perhaps fueled—by a set of market-oriented policies such as trade and capital account liberalization, privatization of state-owned enterprises, and deregulation or liberalization of competition in a variety of industries. This trend has been particularly pronounced in critical infrastructure sectors such as telecommunications, electricity, water, highways and airports. The efficiency gains that market-oriented reforms offer are often assumed to be substantial in size. Nonetheless, countries vary significantly in the time at which they have adopted market-oriented reforms in these sectors, and some have not adopted any such reforms at all. While multiple factors explain the diffusion patterns of such reforms, perhaps the most controversial involve the impact of international coercion and emulation. Coercive pressures are the result of power dynamics, while emulation takes place among actors that recognize one another as being part of a certain social structure. The cross-national study of policymaking is therefore sociologically meaningful because of the processes of power and influence that underlie diffusion.

While there exists a considerable body of empirical research on the cross-national diffusion of ideas, practices and policies,[1] no published study considers international coercion

[1] The policies whose adoption is analyzed include social security systems (Collier and Messick 1975), oil nationalizations (Kobrin 1985), decolonization (Strang 1990), the growth of the welfare state (Strang and Chang 1993), the bureaucratization of national science policy (Finnemore 1993), currency crises (Glick and Rose 1998), environmental protection (Frank, Hironaka, and Schofer 2000a; Frank, Hironaka, and Schofer 2000b), quality certification by firms (Guler, Guillén, and Macpherson 2002), deregulation (Eising 2002; Gilardi 2003), neoliberal macroeconomic policies (Yebra 2002a; Yebra 2002b; Yebra 2003), pension privatization (Weyland 2003), current account liberalization (Biglaiser and Brown 2003), capital account liberalization (Brune and Guisinger 2003), central bank independence (McNamara and Castro 2003), right to transparency laws (Roberts 2003) and privatization (Brune, Garrett, and Kogut 2004; Kogut and Macpherson 2004). Some of these studies emphasize the coercive role of multilateral organizations or strong states (Biglaiser and Brown 2003; Brune, Garrett, and Kogut 2004; Brune and Guisinger 2003; Eising 2002; Finnemore 1993; Frank, Hironaka, and Schofer 2000a; Frank, Hironaka, and Schofer 2000b; Glick and Rose 1998; Kogut and Macpherson 2004; McNamara and Castro 2003; Roberts 2003; Strang 1990; Strang and Chang 1993), while others highlight the role of emulation among peer countries (Collier and Messick 1975; Gilardi 2003; Guler, Guillén, and Macpherson 2002; Kobrin 1985; Simmons and Elkins 2004; Weyland 2003; Yebra 2002a; Yebra 2002b; Yebra 2003).

and emulation effects simultaneously.[2] In this paper, we approach the diffusion of market-oriented policy reform in the electricity and telecommunications industries from a unified framework drawing on neo-institutional theory. While our focus is on international explanations of policy reform, we necessarily take into account the domestic political-economic determinants of policy diffusion, which typically involve the government's relative costs and benefits from promulgating alternative sets of policies.

We begin by examining these domestic drivers of market-oriented policy reform. We then proceed to examine the effects that international coercion and emulation have on the diffusion process, and formulate our hypotheses. We offer an empirical test using data on market-oriented policy reforms in two key infrastructure sectors, telecommunications and electricity, over more than two decades, and find that international coercion and emulation are key drivers of the diffusion process.

THE DOMESTIC AND INTERNATIONAL CONTEXTS OF MARKET-ORIENTED REFORM

Market-oriented policy reforms became part of the international agenda in the wake of the oil crises of the 1970s. At least among economists, a consensus emerged that "structural rigidities" caused by government intervention and excessive regulation stood in the way of sustainable economic growth because they tended to misallocate resources. According to this view, a reduction in the presence of the state in the economy through privatization and deregulation was necessary to enhance economic performance. Chile was the first country to adopt the new set of policy prescriptions during the 1970s, followed by the U.K. and the U.S. (Fourcade-Gourinchas and Babb 2002). Market-oriented reforms diffused to other countries following distinct patterns shaped by both domestic and international factors. As of 1980, only 20 countries had started to deregulate and/or privatize their electricity sector (12 in the case of

[2] Only two studies, both unpublished, consider coercion and emulation in tandem, those by Brune and Guisinger (2003) on capital account liberalization, and Polillo and Guillén (2004) on the adoption of central bank independence.

telecommunications). By the end of 1999, the numbers had increased to 85 and 150, respectively. Thus, of the 205 countries and territories in the world, only 13 percent had engaged in some form of market-oriented reform in electricity or telecommunications as of 1980; by 1999, the figure had risen to 78 percent.[3]

The Domestic Context of Market-Oriented Reform

Much of the existing research on the diffusion of market-oriented reforms in infrastructure sectors such as electricity and telecommunications focuses on the domestic variables that influence a country's decision to country to adopt deregulation, privatization or liberalization. The arguments tends to borrow heavily from political economy, and highlight variables that affect policy adoption by altering policymakers' perceived costs and benefits of market-oriented reform. We group these factors into demand- and supply-side pressures (Li, Qiang, and Xu 2002).

Demand

Sector Performance. A sharp change in economic conditions, such as a macroeconomic or sector-level crisis, often motivates major policy reform (Henisz and Zelner 2004). Because political actors are relatively certain about the outcomes that the status quo policy will produce but view reforms as creating uncertain long-run benefits in addition to large or uncertain short-run (political) costs, these actors are likely to maintain the status quo (Alesina and Drazen 1991; Drazen and Grilli 1993; Fernandez and Rodrik 1991; Nelson 1990; Tornell 1998; Williamson 1993). A sharp change in economic conditions may serve as a "focusing event" (Kingdon 1984: 106) that moves reform to the top of the policymaking agenda by increasing the short-run costs of inaction (Hoffman 1999; Seo and Creed 2002). Only in this circumstance is radical reform such as a shift to market-oriented policies likely to occur (Astley 1985; Jones, Baumgartner, and True 1998; Romanelli and Tushman 1994). For example, Fourcade-Gourinchas and Babb (2002) show that poorly mediated distributional conflict precipitated monetarist revolutions in Chile and Britain. Empirical support for this argument can also be found in sociological studies of how broad macroeconomic crises led to the adoption of market-oriented reform in Latin America

[3] See footnote 10 for sources.

(Armijo and Faucher 2001; Lora 2000; Remmer 1998), the adoption of trade reform also in Latin America (Biglaiser and Brown 2003), and the adoption of capital account liberalization (Brune and Guisinger 2003) or privatization programs globally (Banerjee and Munger 2002). Clarke and Cull's (2002) study of bank privatization in Argentina similarly implicates micro-level performance.

The domestic economic factors contributing to reform in many countries also include the large financial burden that state-owned and state-operated sectors had placed on governments at a time of increasing pressure for greater operating efficiency. Because governments used state-owned utilities as a vehicle for providing subsidies to politically important interest groups, e.g., labor or the middle class, an increasing fraction of capital investment had to be financed using general revenue rather than utility-generated profits. This imbalance became more pronounced as countries in Latin America, Southeast Asia and the former Eastern Bloc confronted trends such as input price increases, unprecedented demand growth and increased industrialization (Henisz and Zelner 2004).

Because many countries failed to respond to these trends, state-owned enterprise debt burdens grew to enormous proportions. In Thailand, for example, the debt held by the national electric utility (EGAT) grew to more than US $4 billion by 1990, equivalent to over one quarter of the total debt held or guaranteed by the government. In Argentina, public electricity debt issued during the 20 years preceding the Menem presidency of 1989-99 is estimated to have totaled US $25 billion, equal to more than one quarter of the government's total debt and one half of its foreign debt (Badaraco, Scholand, Erize, Perrone, and Werning 1996).

Governments turned to market-oriented reforms in large part because they expected such reforms—especially privatization—to avert impending financial catastrophe and create a basis for meeting demand growth. Several studies that estimate the effect of domestic economic conditions on the adoption of telecommunications or electricity reform support this conjecture. Petrazzini (1995) shows that poor sectoral performance was associated with market-oriented reforms in Latin American telecommunications. Ando and Palmer (1998), Damsgaard (2003) and White (1996) all find that incumbent performance increased the likelihood of adoption of retail price deregulation in electricity markets. Knittel (2003) finds a similar relationship in his study of U.S. state-level electricity regulation during the 20th century.

A larger body of empirical work provides more indirect evidence of the influence of sector-level performance on the decision to adopt market-oriented reforms by demonstrating that deregulation, privatization and liberalization enhance the operating and financial performance of public utilities (D'Souza and Megginson 1999a; Megginson and Netter 2001). In the context of telecommunications, D'Souza and Megginson (1999b) find that profitability, output, efficiency, capital expenditure, lines in service, and average salary per employee all increased following the privatization of 26 state-owned firms in 21 countries. The increase in these measures resulted from efficiency gains (as opposed to price hikes), which grow further when deregulation and liberalization accompany privatization (Gutierrez and Berg 2000; Levy and Spiller 1994). Fink, Mattoo and Rathindran (2002) show that the combination of the creation of an independent regulator, privatization and market liberalization is associated with an eight percent higher level of penetration and a 21 percent higher level of productivity relative to the levels found in non-reforming countries during a fifteen year event window. Using data on 30 countries in Africa and Latin America, Wallsten (2001) finds that privatization improved the performance of the telecommunications industry, especially when accompanied by with separation of the regulatory authority from the incumbent telecommunications company. Artana, Navajas and Urbiztondo (2001) find productivity gains of 196 percent in Argentina following deregulation and privatization, and Petrazzini and Clark (1996) find that deregulation was more beneficial than privatization in a sample of 26 developing countries.

Interest Groups. Regardless of the actual level of performance of state-owned utilities, the political strength of constituencies with intensive demand for infrastructure may also influence the incidence of reform. Chief among these constituencies are domestic industrial, foreign industrial and urban residential customers, all of which consume a disproportionately large quantity of infrastructure services yet also often pay relatively high rates in order to provide politically motivated cross-subsidies to agrarian and rural consumers (Henisz and Zelner 2004; Li, Qiang, and Xu 2002).[4] Faced with such costs, domestic industrial, foreign industrial and

[4] Business consumers typically represent a more stable source of demand than residential consumers do and are consequently less costly to serve. Thus, higher business rates are prima facie evidence of cross-subsidization. Even if business prices are lower than residential prices are, a cross-subsidy may still be present if the difference in prices does not fully reflect the difference in service costs.

urban residential customers may exploit their respective organizational or political advantages to exert concerted pressure on political actors for market-oriented infrastructure reform.

Domestic industrial consumers' organizational advantages follow from their relative concentration as a group and their possible pre-existing affiliation with one another through industry associations and trade groups.[5] Large industrial consumers may further be able to threaten self-supply, increasing their bargaining leverage and political influence. Foreign industrial customers, on the other hand, may be able to use their home country governments to sway domestic policy outcomes, or may possess scarce, inimitable technology or managerial capabilities that the host country government desires. Urban residential consumers derive their political influence from a different source, namely, their ability to militate for reform of infrastructure services through peaceful or violent protests, such as occurred in Indonesia in 1997 and Argentina in 2001.

Supply

Fiscal Position. Independent of the demand for market-oriented reforms by the public or key interest groups, the government may be predisposed to undertake such reforms when the added short-term revenue from doing so helps alleviate an adverse fiscal position that threatens to reduce support for incumbent political actors. Because virtually all governments employ a form of "cash" (as opposed to accrual) accounting,[6] the market-oriented reforms that facilitate the privatization of state assets generate short-term revenue without creating an offsetting balance sheet loss equal to the net present value of the future public revenues that state ownership of infrastructure assets would otherwise generate. 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 leads such investors to bid above the net present

[5] Indeed, "producers" such as industrial firms represent the quintessential organized interest group in the economic theory of regulation. Stigler (1971) and Peltzman (1976; 1989), addressing the US private ownership context, both conceive of producers exclusively as electric utilities, and "consumers" is typically taken to signify diffuse, unorganized interests such as residential consumers.

[6] Only the New Zealand government follows the conventional corporate practice of accrual accounting,

value of the assets under government ownership, creating an incentive for governments—especially cash-strapped ones—to undertake market-oriented reforms.

Technology. Changes in technology have reduced the validity of the economic argument that infrastructure industries are "natural monopolies" in which government ownership or strict price regulation is necessary to safeguard consumers' interests. A natural monopoly arises in industries characterized by large enough economies of scale relative to the level of demand that one single producer ends up monopolizing the market as a result of its continuously decreasing average unit costs over the entire necessary range of production. Innovations that reduce the impact of natural monopolies include advances in information services that permit tighter coordination between independent upstream and downstream stages of production, electricity generating technologies that reduce the minimum efficient scale of a generating plant, and new digital switching technology that facilitates the sharing of telecommunications infrastructure by multiple providers. These technological innovations have undermined traditional economic arguments for government intervention (Gilbert and Kahn 1996; Hirsh 1989; Joskow 1987).

Political Institutions. The structure of domestic political institutions affects policymakers' incentives (North 1990; Persson 2001; Tsebelis 2003) to adopt reforms through its influence on the costs of effecting actual policy change as well as investor perceptions of the credibility of reform (Henisz and Zelner 2001; Henisz 2002; Henisz 2004; Janeba 2001; Stasavage 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, i.e., an increased level of policy stability (Henisz 2000; Tsebelis 2003).[7]

Several cross-national empirical studies linking a country's level of policy stability to its number of veto points support this contention. Hallerberg and Basinger (1998), for example, find that in response to tax cuts enacted by the United States in the 1980s, OECD nations with fewer de facto veto points lowered their tax rates by a greater amount than did countries with more checks and balances. Taking a longer term view, Franzese (1999) and Treismann (2000) respectively find that countries with more veto points have more stable levels of government deficits and inflation. MacIntyre (2001) proposes a nonlinear relationship between veto points

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

and policy responses to the 1997 East Asian financial crisis and reports supporting qualitative evidence. Using an unbalanced panel of 92 countries over more than two decades, Henisz (2004) finds evidence that checks and balances reduce the volatility of fiscal expenditure and revenue. Accordingly, a higher level of checks and balances is expected to exert a negative influence on reform adoption by increasing policymakers' private costs of reform.

At the same time, an increased level of checks and balances should also exert a positive influence on reform adoption through its influence on investor perceptions. Investors provide capital more cheaply to countries whose domestic institutional environment offers a stronger safeguard against the future rollback or reversal of reforms (Henisz and Zelner 2004). The increased revenue-raising potential of market-oriented reforms in an institutional setting with strong checks and balances thus increases political actors' potential benefit from adopting such reforms.

Evidence on market-oriented reforms in telecommunications and electricity is consistent with the position that checks and balances promote successful reforms. A growing body of literature argues that a central driver of infrastructure reform is the ability of a political system to support credible government commitments not to intervene arbitrarily or capriciously in the operating practices of private infrastructure service providers (Heller and McCubbins 1996; Henisz and Zelner 2004; Holburn and Spiller 2003; Levy and Spiller 1994; Levy and Spiller 1996; Spiller 1993; Spiller 1996). Investors that perceive their returns to be at risk due to government discretion over relevant prices, regulation, taxation, labor policy and the like tend to invest less, front-load their returns, shun market-oriented competition or expend resources that would otherwise be operationally employed on non-market risk-reduction activities such as lobbying. Quantitative analysis of investment decisions in telecommunications (Henisz and Zelner 2001) and electricity (Henisz and Zelner 2002) reinforces the findings in the earlier qualitative studies.

In sum, governments tend to adopt market-oriented reforms in response to domestic factors such as falling sectoral performance, interest-group pressures, a deteriorating fiscal position and technological changes that reduce minimum efficient scale. The "net" effect of checks and balances on policymaking discretion on adoption is ambiguous. The empirical literature has found support for these arguments using data from a variety of industries and parts

of the world. In this paper, we measure and account for each of the domestic factors affecting market-oriented reforms, focusing our attention on the international context of policy diffusion.

The International Context of Market-Oriented Reform

Our theoretical arguments build on Ikenberry's (1990) observation that "privatization programs across developed and developing countries can be understood only with an appreciation of their international context." Following neo-institutional analysis in sociology, we propose coercion and emulation as the two basic mechanisms that underlie policy diffusion across countries. We base this argument on the assumption that nation-states are in economic, political and cultural competition with one another. Thus, they are influenced by power dynamics, and borrow policy ideas and practices from other countries in order to maintain their position and status in the global system of states (Gilpin 1987; Gilpin 2000; Meyer, Boli, Thomas, and Ramirez 1997).

Coercion

Neo-institutional 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, scholars have also applied the concept of coercive isomorphism to the interaction among countries. Meyer et al. (1997: 157) argue that "the expanding externally defined requirements of rational actorhood" increase the proclivity of more dependent actors or states in the global system to adopt formal structures or practices. In a global economy, most countries have become interdependent with (or dependent on) other countries in trade, credit and foreign investment. This interdependency induces status competition among states (Van Rossem 1996). 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 alter the outcome of a domestic policy struggle by favoring the domestic coalition supporting a given policy. The former concept of "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 there exists a diversity of views about market-oriented reforms in any given country. Domestic groups may hold different views about a market-oriented reform as a result of their ideology or their economic interests.[8] If groups have different positions on a prospective market-oriented reform, then the intervention of an outsider or third party can tilt the balance of power toward the group those favoring the reform by providing that group with more resources, legitimacy or rhetorical arguments, and by prompting groups to join the pro-reform coalition. The literature on IMF lending practices argues that intervention by external actors who 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 (Boughton 2003; Dixit 1996; Pierre 1997; Putnam 1993; Spaventa 1983; Vreeland 2003).

More generally, Simmel (Simmel 1950: 145-169) theorizes about the dynamics produced by the intervention of a third party in a preexisting relationship between two parties. The third party can play one of three roles, that of the (1) non-partisan arbiter that balances or seeks accord between the two parties (Simmel 1950: 146) ; (2) divider-and-ruler that "intentionally produces the conflict in order to gain a dominant position" (Simmel 1950: 162); or (3) tertius gaudens, a third 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). The last role is most

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[8] 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 effects of ideology on policy outcomes. Boix (2000) replicates Garrett's basic findings and extends them by incorporating an analysis of the structure of labor market institutions. Hallerberg and Basinger (1998), in their study of the adoption of tax reform, combine these two perspectives by considering the ideological preferences of the incumbent government as well as the policymaking structure. Murillo's (2002) study of the type of the different privatization programs that countries adopt also finds a strong role for incumbent ideology.

relevant to the impact of multilateral agencies like the IMF or World Bank on deregulation, privatization and liberalization policies. The group or party favoring market-oriented reform may approach the multilateral agency in order to advance its goals (e.g., privatization), or the agency may approach this group or party itself. The multilateral agency itself does not necessarily have to exert a huge amount of influence; "the only important thing is that [the third party's] superadded power give one [of the two preexisting parties] superiority" (Simmel 1950: 157).

The available empirical evidence tends to support the argument that international coercion may affect policymaking either directly or indirectly. Empirical research demonstrates that decolonization (Strang 1990), currency crises (Glick and Rose 1998) and the adoption of policies to protect the environment (Frank, Hironaka, and Schofer 2000a; Frank, Hironaka, and Schofer 2000b) all exhibit distinct patterns of direct coercion. Dominant countries both define the desirable set of policies to which others aspire (Stone 1999), and can impose or encourage the adoption of these policies through direct financial channels such as conditional lending (Khan and Sharma 2001).

Other empirical studies focus on the direct coercive influence of specific powerful organizations. For example, the signing of International Labor Organization conventions enhances subsequent welfare spending (Strang and Chang 1993), and UNESCO membership increases that a government founds a formal science bureaucracy (Finnemore 1993). Guler et al. (2002) finds that the presence of the state and foreign multinationals in the economy accelerates the rate of diffusion of quality certification among local firms.

There exists limited empirical evidence of indirect coercion in the form of studies linking a country's fraction of output exported to subsequent trade liberalization (Biglaiser and Brown 2003) and demonstrating the negative impact of anti-capitalist sentiment on the adoption of financial market liberalization (Quinn and Toyoda 2003). Research highlighting the use by international interests of local actors sharing a common vision to achieve a given domestic policy outcome provides additional evidence (Biglaiser and Brown 2003; Bockman and Eyal 2002; Chwieroth 2003).

Much research on international coercion highlights the role of multilateral agencies, which control financial resources sorely needed by many countries, have a considerable amount of legitimacy, and typically enjoy the backing of the dominant states that contribute to them financially. These agencies may be able to use their resultant financial and moral authority to

coerce domestic policy actors to adopt otherwise unacceptable reforms. More specifically, they promote the diffusion of market-oriented reforms through the so-called "conditionality terms" that they can attach to loan agreements. These terms take the form of a "complex policy covenant" that a debtor country's government makes with the 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 aim of the covenant, according to two IMF economists, is to provide the lender with

> safeguards that the country will be able to rectify its macroeconomic and structural imbalances and will be in a position to service and repay the loan… Certain structural conditions may be necessary to signal the government's commitment to macroeconomic stability. Securing this depends not only on short-run macroeconomic management given an existing set of institutions, but also on the quality of the institutions themselves… Institutional development and reform require a variety of structural policy changes and this is a justification for including them in programs (Khan and Sharma 2001: 6).

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 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. The IMF imposed an average of six terms in 1970, 10 in the 1980s, and 26 by 1999, with a maximum of 140 in the case of Indonesia in 1997. The average for the World Bank rose from 32 in 1980-83 to 56 by 1990 (Buira 2003).

Some observers attribute the change in multilateral agency behavior to ideological shifts that began in the 1980s. According to Buira (2003), "since the early 1980s, as the Thatcher and Reagan doctrines gained ascendancy in the UK and the US, both [the IMF and the World Bank] adopted a more neo-liberal economic stance and increasingly favored policies aimed at reducing the role of the state, the reduction or elimination of subsidies, of market liberalization and privatization of public enterprises." As Kapur and Webb (2000) report, the dominant ideology at the World Bank during the 1980s revolved around the theme that countries should do more with

less—that is, "downsize"—and evolved during the 1990s to include broad privatization programs, regulatory reform and the implementation of checks and balances as recognition of domestic institutional factors grew.[9]

The World Bank explicitly extended this macroeconomic ideology to infrastructure sectors in 1993, when it made evidence of market-oriented infrastructure reform precondition for any project lending. One example is the Democratic Republic of Congo, which borrowed $120 million under the condition that it "strengthen regulatory authorities in the telecommunication, transport and energy sectors through technical assistance and training" (The World Bank 2004b). Another example is Afghanistan, which recently 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" (The World Bank 2004a). Similarly, Bangladesh 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" (The World Bank 2004c). The Democratic Republic of Congo, Afghanistan and Bangladesh are but three of the countries that have received infrastructure loans under the condition of market-oriented reform since the IMF and World Bank began to publish the terms of their loan agreements in 1997. Wamukonya (2003) shows that 32 countries signed letters of intent with the World Bank for lending in the electricity sector that included similar terms over the period from October 1998 to February 2001.

Unpublished empirical studies find evidence of the coercive influence of multilateral agencies on the likelihood of capital account liberalization (Brune and Guisinger 2003), the adoption of central bank independence (McNamara and Castro 2003), the promulgation of a national right to information or transparency laws around the world (Roberts 2003), and the adoption of tariff reform in Latin America (Biglaiser and Brown 2003).

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[9] From a conceptual perspective, it is possible to conjecture that changes in development agency behavior may also have resulted from the growing legitimacy of agencies' conditionality practices over time, both internally and throughout the field of development agencies. However, the identification of the precise explanation for changes in development agency behavior is, however, beyond the scope of this paper.

We expect direct coercion to occur in cases in which the multilaterals (and the states that dominate their decision-making) are powerful enough relative to a country's government to impose market-oriented reforms in exchange for funding. In other cases, we expect indirect coercion to occur: the IMF or the World Bank and domestic parties in favor of market-oriented reform work in concert to tilt the balance of power, especially when the country requires external funding to cope with a macroeconomic or financial crisis. Whichever coercive mechanism is operative, external intervention still affects the policymaking process. Based on the foregoing, we predict that:

> Hypothesis 1a: The rate of adoption of market-oriented reform increases with exposure to multilateral lenders.

Consistent with the anecdotal observations reported above regarding the increased scope of multilateral conditionality over time, we also predict that

> Hypothesis 1b: The magnitude of the positive correlation between the rate of adoption of market-oriented reform and exposure to multilateral lenders is increasing over time.

Emulation

In addition to coercion, a social structure may induce emulation or mimetic behavior (DiMaggio and Powell 1983). Mimetic isomorphism refers to the tendency of actors to seek legitimacy by emulating the behavior or practices of other actors. This process occurs more frequently when there is uncertainty about the effectiveness of practices or policies, and when the range of possible alternatives becomes so large that rationally-bounded actors find it difficult or impractical to assess each possible alternative against the others. As Strang and Macy (2001) note, adaptive emulation combines problem-driven search (March and Simon 1958) and organizational imitation (DiMaggio and Powell 1983).

Social contact is the best documented channel through which mimetic isomorphism occurs. Actors tied to one another share a culture or set of norms that invites them to behave similarly; socially cohesive actors influence each other and hence tend to adopt similar patterns

of behavior (Coleman 1988). The extent of imitation thus depends on patterns of interaction between pairs of actors, which is in turn a function of social density. Empirical evidence supporting this argument comes from studies examining the diffusion across organizations of practices such as corporate acquisitions (Haunschild 1993), poison pills (Davis 1991), golden parachutes (Davis and Greve 1997), technological innovations (Ahuja 2000), total quality management techniques (Westphal, Gulati, and Shortell 1997), and the multidivisional form (Palmer, Jennings, and Zhou 1993). This body of research emphasizes the importance of such interorganizational ties as interlocking directorates and the transfer of managerial personnel, which provide channels for the exchange of information.

Some neo-institutional sociologists apply the concept of mimetic isomorphism at the country level of analysis, arguing that policymakers emulate each other as a way to reduce search costs 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. Westney (1987) provides historical evidence for the Japanese case during the period of Meiji reform in the late 19th and early 20th centuries. Guillén (1994) and Djelic (1998) show that governments in Western Europe sought to emulate American productivity programs before and after World War II. Using more recent evidence, some researchers show that the "menu" of known policy options from which policymakers choose today is considerably larger than that available to their counterparts several decades ago. Recognition that the range of options has grown over time is critical for predicting the timing of adoption of a given reform. Empirical studies emphasizing policy emulation among peers include Collier and Messick's (1975) study of the adoption of social security systems, Knoke's (1982) analysis of the adoption of municipal reform in the 267 largest US cities, Kobrin's (1985) study of oil nationalization, Weyland's (2003) work on the diffusion of pension privatization, Guler et al.'s (2002) study of the adoption of quality certification, Brune and Guisinger's (2003) analysis of capital account liberalization, and Fourcade-Gourinchas and Babb's (2002) and Yebra's (2002a; 2003) studies of the diffusion of neoliberal macroeconomic policies.

Sociologists studying globalization argue that the intensity of trade transactions 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 formalized 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 or lean production (Strang and Macy 2001).

Policies directly reflect the level of formalized conformity within a trade network. In a world characterized by uncertain cause-effect relationships, the policy initiatives undertaken by "relevant others" such as trade partners represent a normative model that lends credence to analogous domestic policy innovations and may trigger a cross-national diffusion process. Imitation is an effective policymaking 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. Thus, we predict:

> Hypothesis 2: The rate of adoption of market-oriented reform by a given country increases with the incidence of adoption of such reforms by trade-related countries.

EMPIRICAL SETTING, DATA, AND METHODS

The empirical focus of our analysis is the wave of market-oriented reforms that have taken place in the global telecommunications and electricity industries since the late 1970s. As in the case of other infrastructure industries, telecommunications and electricity providers in most countries were traditionally state-owned monopolies. Even where several firms were allowed to operate, competition on price or product offerings was rarely allowed to occur.

During the 1960s and 1970s, fewer than half a dozen countries initiated major reforms in the regulation of, degree of private ownership of or extent of competition among telecommunications and electricity providers. Market-oriented reforms began to gather speed in the 1980s. During the 1990s over two thirds of all countries and territories in the world introduced at least one major market-oriented reform in telecommunications, while over one third did so in the case of electricity (see Table 1). Early adopters and the countries that have adopted the most comprehensive reforms represent a wide variety of geographic regions, income levels and development levels. Table 2 lists the first 15 adopters in both sectors and the 15

countries that most rapidly adopted the most wide-ranging and comprehensive set of reforms including deregulation, privatization and liberalization.

Data

We test our hypotheses using an unbalanced cross-national panel data set of reforms in up to 205 countries during the period 1960-1999. The unit of analysis is the country-year. Data on the timing of reforms in infrastructure services are drawn from multiple secondary sources including intergovernmental organizations (The International Telecommunications Union, known as the ITU, and The International Energy Agency, known as the IEA), national regulatory agencies, press reports and third-party analyses.[10] 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.[11]

Dependent Variables. We run separate regressions for telecommunications and electricity. Our data include the year in which a country adopted a specific reform in the areas of deregulation, privatization and liberalization. For the former, we consider four possible reforms: (1) separating the regulatory authority from the ministry with oversight of the sector; (2) separating the regulatory authority from the state-owned operator; (3) creating a semi-autonomous regulator; and (4) creating an autonomous regulator. For the privatization variables, we consider three possible reforms: (1) undertaking a privatization of a minority of the shares of the state-owned provider; (2) undertaking a privatization of the majority of shares of the state-owned provider; and (3) undertaking a complete privatization of the state-owned provider. For the liberalization variables, we consider two reforms in each of the respective cases of telecommunications and electricity: (1) allowing competition in long distance telephony, or autoproduction in electricity; and (2) allowing competition in local telephony, or generation for

[10] The telecommunications reform variables come from the International Telecommunications Union. For the electricity reform variables, we supplemented data available from the International Energy Agency with the OECD International Regulation Database, the World Bank's International Directory of Utility Regulatory Institutions, and the websites of national regulatory agencies and ministries.

[11] http://www-management.wharton.upenn.edu/henisz/POLCON/ContactInfo.html

external sale in electricity. We thus have nine potential adoption decisions in each sector and in each country-year.

Table 1 shows the number of countries that have enacted each reform by decade, the number of left-censored cases (those countries that had already enacted a given reform prior to 1960) and the number right-censored cases (those countries that had not yet enacted the reform as of 1999). Appendix Tables 1 and 2 provide the year in which each of the 205 (196) countries in our dataset undertook each of the above reforms in telecommunications (electricity).

Independent Variables. We measure the leverage of multilateral lenders using the ratio of a country's level of borrowing to Gross Domestic Product. Compared to the alternative measure of actual infrastructure project-based loan agreements, the total exposure measure that we use is not limited by a country's short-term need for infrastructure borrowing nor is it associated with a country's desire to implement market-oriented infrastructure reforms, and is therefore both robust to possible unobserved extra-sectoral linkages in country loan packages and more independent from the domestic political economic factors which may generate pressure for reform. 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, disagreements about the attainment of or commitment to market-oriented infrastructure reforms delayed a lending package for a country in the midst of an exogenous macroeconomic and financial crisis. Even were we to set aside issues of endogeneity, data on the contents of individual loans, were made public beginning only in 1998.

The countries with the highest overall exposure to multilateral lenders were São Tomé & Principe, Guyana, Malawi, Zambia, Guinnea-Bissau, Gambia, Burundi, Mauritania, Togo, Ghana, Mali and Sierra Leone. The country-years in which the multilateral lending agencies had the highest leverage according to this measure were São Tomé & Principe from 1992-99, Guinea-Bissau from 1995-99, Malawi from 1995-99, Guyana from 1992-94 and Zambia in 1987. Country-years in which multilateral leverage increased by the greatest amount were Malawi in 1994, Rwanda in 1994, Bosnia in 1994, Sao Tome & Principe in 1991 and Malawi in 1998. Anecdotal support in the form of case studies or news stories about the effect of multilateral lending (H1a) can be found in the telecommunications reform adoption decisions of São Tomé & Principe (1997), Malawi (1998), Guyana (1991), Zambia (1994), Guinea-Bissau (1989), Burundi

(1997), Mauritania (1999), Togo (1999), Ghana (1996), Rwanda (1996) and Bosnia (1999). Guyana (1998), Ghana (1997) and Zambia (1997) also adopted electricity sector reforms.

We measure the legitimacy attributed to a given reform—and thus its mimetic appeal—using the prior reform decisions of other countries. Rather than just count prior adoptions of an analogous reform in the telecommunications or electricity sector, we construct a country-reform specific policy index that accords more weight to the prior adoption decisions of more closely-tied (i.e., peer) countries about a specific reform, as measured by the share of their total trade that occurs with the focal country (Yebra 2002b). This indicator reflects the notion that, because of uncertainty and bounded rationality, policymakers take into consideration their peers' decisions.

The differences between the means of these variables in the entire sample as opposed to the subsample of adopters and non-adopters reflect the strong clustering of adoption decisions. In the case of the nine telecommunications reforms, 20.4 percent of the average country's trade during the sample period was with countries that had adopted a given reform. For countries that had already adopted a reform, however, this figure was 46.8 percent, as opposed to 17.8 percent for non-adopters. Similarly, in the case of electricity the figure of 34.1 percent fell in between the figure for adopters of 78.9 percent and non-adopters of 24.5 percent.

Control Variables. We include additional independent variables to reflect domestic factors such as sectoral performance, interest-group pressures, fiscal position, technological changes, and checks and balances. We use the ratio of the number of customers waiting for telecommunications services to the number of customers currently served as a proxy for the quality of telecommunications services (Petrazzini 1995), and the percentage of electricity that is generated but lost in transmission or distribution as a proxy for the quality of the electric system. 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. The countries with the worst performance according to these metrics (Afghanistan, Albania, Syria, Cambodia, Nepal, Eritrea, Honduras, Libya, Vietnam, Tanzania and Tonga in the case of telecommunications; and Armenia, Haiti, Latvia, Mozambique, Myanamar, Bangladesh, Cyprus, Angola and the Dominican Republic in the case of electricity) are plausible candidates for having poorly performing state-owned enterprises. We measure interest group pressures using the value

added in industrial production as a share of gross domestic product, the ratio of foreign direct investment to gross domestic product, and the percentage of the population living in urban areas.

Turning to supply-side factors, we include the public sector budget balance to capture fiscal strain. We allow for the impact of technological change by permitting the hazard rate of adoption to increase over time as a function of an estimated parameter in our specification, as described below. Finally, in order to account for the role of any scale (dis)economies as country size increases, we also include the log of a country's population. Additionally, we include the log of per capita GDP as a crude measure of resources and economic structure.

Table 2 provides summary statistics for the dependent and independent variables in our analysis. We lag all independent variables one period to help alleviate concerns regarding potential endogeneity.

Methods

We estimate policy reform adoption rates using an event history analysis, a technique that assesses the influence of a set of covariates on the incidence of an event using a longitudinal record of events in a sample from a population. Our focal event is the adoption of a reform by a country in a given year. In our model, each country *x* is at risk of adopting reform *i* in each time period *t*, or until adoption occurs. This technique models the rate of a transition from an origin state to a destination state (adoption) as a function of the covariates. Its general form is:

$$h(t) = \rho\lambda t^{\rho-1}, \lambda = e^{X_{jt}\beta}$$

where *h(t)* is the hazard function for a reform to transition from non-adoption to adoption at time *t*, with the observed covariate row vectors X_{jt} and parameters to be estimated ρ and β (Blossfeld and Rohwer 1995).

In our primary specification, we combine all nine possible reforms in each sector of each country into a single, pooled, cross-national, sector-level regression, although we examine results at individual reform level in our robustness tests. We allow for each type of reform to have an independent baseline hazard and a different sensitivity to the passage of time, i.e., ρ is subscripted by reform type (Wei, Lin, and Weissfeld 1989), resulting in a vector $\boldsymbol{\rho}$. In order to test support for Hypothesis 1b (the time-varying effect of multilateral lending), we also include the multilateral lending variable in $\boldsymbol{\rho}$. The effect of all other independent variables is assumed to be constant across time *t*. We explicitly test this assumption in our robustness analysis by

permitting the effect of the multilateral lending variable and other independent variables to affect individual reform types differentially. Finally, we cluster the standard errors by country in order to address the lack of independence of multiple observations from the same cross-sectional unit.

Based on a review of the dates of initial reform in each sector across countries, we choose 1977 and 1978 (when Chile adopted market-oriented reforms) as the base year for analysis of the telecommunications and electricity generation sectors, respectively, reflecting an assumption that the adoption of sectoral reform was not a relevant policy option prior to that year. In our robustness tests we also examine the sensitivity of our results to this assumption.

Finally, 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 adopt an IMF program, we allow for the possibility that countries' choices to ask multilateral lenders for a loan and adopt market-oriented infrastructure reforms are 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 of a multilateral lending program, and whose second stage includes the variables listed above in addition to the predicted probability of seeking a multilateral loan from the first-stage regression.

EMPIRICAL RESULTS

Model 1 of Table 4—the first-stage equation—shows that we replicate Vreeland's (2003) main findings that low official reserves, large government budget deficits, high debt service obligations, new governments and a smaller number of checks and balances in the nation's political institutions are all associated with a greater predicted probability of a country's increasing its multilateral exposure. We also find that smaller ($p = 0.06$) and poorer countries are more likely to increase their exposure. Columns 2 – 5 of Table 4 present the results of our analysis of the telecommunications (columns 2 – 3) and electricity sectors (columns 4 – 5). The second model for each sector (Columns 3 and 5) allow for a time-varying effect of multilateral lending.

We find strong support for the coercive effect of multilateral lending and reform adoption in both telecommunications and electricity (H1a). That is, the World Bank and International

Monetary Fund's conditional lending practices increase the rate at which countries adopt market-oriented infrastructure reforms. When we restrict the effect of multilateral lending to be constant across time (columns 2 and 4), a country borrowing the sample mean level from multilateral institutions is predicted to be approximately 38 percent more likely to adopt a reform in the telecommunications sector as compared to a country with no exposure to multilateral institutions (the analogous result is not significant in the case of electricity). A country with exposure one standard deviation above the mean is predicted to be 50 percent more likely to adopt a reform than is a country with exposure at the mean level, or 107 percent more than is a country with no exposure. For severely indebted countries, i.e., those whose borrowing from multilaterals exceeds the value of their gross domestic product, the total predicted increase in the rate of reform adoption is 1,233 per cent.

Consistent with H1b, the economic magnitude of the effect of this coercive mechanism varies substantially with time. According to the coefficient estimates in columns 3 and 5, from the specifications in which the effect of multilateral lending is permitted to vary over time, countries whose exposure to multilateral institutions in 1987 is at the mean, one standard deviation above the mean, or greater than gross domestic product are respectively predicted to be 27 percent, 60 percent and 606 percent more likely to adopt a reform in the telecommunications sector, when compared to countries with no multilateral exposure. These figures increase to 36 percent, 103 percent and 1,191 percent in 1997. In the case of the electricity sector, the effects are now statistically significant and comparable in magnitude to those of the telecommunications sector. Specifically, countries whose exposure to multilateral institutions is at the mean, one standard deviation above the mean, or equal to their gross domestic product are predicted to increase their adoption rates by 42 percent, 123 percent and 2462 percent in 1987 and 51 percent, 151 percent and 621 percent in 1997, as compared to countries with no multilateral exposure.[12]

Hypothesis 2 posits a positive relationship between peer countries' adoption of a reform and a focal country's adoption rate. We find strong support for this hypothesis in both sectors and the economic significance is again substantial. In the case of telecommunications, countries

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[12] The predicted rate of increase in reform adoption for severely indebted countries in 1997 is lower than it is in 1987 because the model predicts that all countries with such exposure would initiate a reform by the early 1990s, thus reaching the upper bound on the rate of adoption above which there are no possible predicted increases.

with trading partners that have undertaken a specific sector-level reform at a rate one standard deviation above the mean level for that year exhibit predicted adoption rates that are 89 percent higher than are those of countries whose trading partners exhibit the mean level of reform. The analogous figure for the electricity sector is 145 percent. Thus, we obtain robust, statistically significant support for the presence of both international coercion and emulation. Moreover, the effects are large in magnitude.

In contrast, we find mixed support for the role of domestic demand and supply factors, which we included in our analyses as control variables. The models support the expected positive relationship between performance shortfalls and the adoption of reforms in both sectors. Consumers facing waiting lists for telecommunications services or whose electric utilities are able to supply only a fraction of the electricity generated are more likely to militate for reform. The predicted adoption rate for sectoral reform in a country whose sectoral performance indicator is one standard deviation lower than the mean level is 115 percent higher in the case of telecommunications and 84 percent higher in the case of electricity than in an otherwise identical country at the mean level of the performance indicator.

The flexibility of the Weibull specification permits us to infer that the baseline adoption rate is initially much higher for telecommunications, but the rate of change over time for electricity reforms is much more rapid (i.e., the coefficient estimate for the time-varying constant for electricity is equal to 40 percent of the time-varying constant for telecommunications), suggesting that technological change has played a larger role in enabling market-oriented reforms in the latter sector. Although this finding may appear counterintuitive at first blush, it is important to recall that our empirical analysis examines fixed-line telecommunications infrastructure that supports voice services, not the overlapping data or cellular markets in which technological change has played a much greater role. In the electricity sector, the substantial decline in the minimum efficient scale of generating plants has radically altered the economics of generation during the past few decades, enabling the vertical disintegration that is a crucial component of market-oriented the reforms to occur.

We do not find a statistically significant relationship between interest group pressures (value added by industry, urban population or foreign direct investment) or political institutions (political constraints) and the adoption of reforms. Countries with larger budget surpluses are more likely to reform in the case of telecommunications, highlighting the need for slack

resources to fund the necessary transformation of the sector rather than suggesting that resource scarcity drives the government to reform.[13] Larger countries are more likely to reform, although the statistical support is within conventional confidence intervals only in the case of the electricity sector.

Another way of examining the predictive power of our model is to review the post-1999 experience of non-adopting countries with the maximum predicted probabilities of adopting a given reform in 1999. In the telecommunications sector, the International Telecommunications Union dataset contains observations beyond the 1999 threshold that we use in our analysis. In 1999, the countries with the highest probability of making their regulator independent from the Ministry of Telecommunications that had not yet done so were Uruguay, Romania and Latvia. Uruguay and Latvia adopted this reform in 2001, and Romania did so in 2002. For the case of making the regulator independent from the incumbent, the non-adopters with the highest predicted adoption rate were Azerbaijan, Uruguay and Belarus. Uruguay adopted this reform in 2001 while Azerbaijan and Belarus have yet to do so. For the subjective measures of deregulation, Mexico, Chile and Tunisia had the highest probability of making their regulator autonomous, and Tunisia did so in 2001. Estonia, Lithuania and Azerbaijan had the highest predicted probability of initiating a privatization program, and Estonia did so in 2000, followed by Lithuania in 2001. The highest predicted rates of adoption of competition in long distance telephony among non-adopters were those for Poland, the Czech Republic and Estonia. The latter two countries adopted this reform in 2000, and Poland followed in 2001. Finally, for non-adopters of competition in local services, the highest predicted rates of adoption were those for Mexico, Estonia and Hungary, each of which adopted the reform in 2000.

[13] This result exclusively reflects the impact of the size of a country's budget deficit on the probability of reform, i.e., net of the impact of the budget deficit on the probability of the country's increasing its multilateral institutions. The latter effect is captured in the first stage of the econometric model, which indicates that the budget deficit is a crucial determinant a country's choice to increase its multilateral exposure.

Robustness Analyses

We examine the robustness of our results to the inclusion of additional variables, different choices of base year, different time-varying effects and the disaggregation of our dependent variable.

Omitted Variables. We check for omitted variable bias by adding to our core specifications covariates that could plausibly influence the dependent variable, including the level of democratization, the durability of the political regime, any change in political leadership, the ideology of the political leadership, two measures of the openness of the host country economy (trade and portfolio investment), two measures of the level of debt service (as a percentage of GDP and exports), two measures of the size of government (expenditure and revenue), and two measures of host country growth prospects (population and income). Given the stability of our coefficient estimates, we present an abbreviated version of the results in Table 5, which includes the coefficient estimates of theoretical interest and the coefficient estimate for the rotated variable for each of the twelve different equations for electricity and telecommunications, in specifications that both restrict the effect of multilateral lending to be constant across time and also allow it to vary over time (a total of 48 regressions). For telecommunications, democratic countries (column 1, panels 1 and 2) and (weakly) countries in which the government plays a smaller role in the economy, as measured by expenditure or revenue (columns 9-10, panels 1-2), are more likely to initiate market-oriented reforms. Only population growth (column 11, panels 3-4) is associated with market-oriented reforms in the electricity sector. Except in the case of ideology (column 4), the coefficient estimate for which is not itself significant and whose inclusion reduces our sample size by over forty percent, the inclusion of any these variables does not substantively alter the results of primary interest. We do not include these variables in our primary specification due to the reduction in sample size that doing so would necessitate.

Assumptions about Initial Reform Year. We examine the sensitivity of our results to varying assumptions about the initial year in which reform was a feasible policy option by setting the initial year in our analyses to 1960 (the earliest year for which we have data) for both sectors, and also to the years of the second and third significant reforms in each sector (1979 and 1984 for telecommunications, 1986 and 1987 for electricity). The coefficient estimates for the multilateral exposure variable in Table 6 increase as we move the initial date of our analysis

forward in time. This change is consistent with the support for Hypothesis 1b (the time-varying effect of multilateral lending); the predicted effect of a given quantity of lending is increasing as we restrict our sample to include only more recent years. We do, however, lose some statistical power as we restrict the sample size to the 1984-1999 period for telecommunications and 1986-1999 for electricity. All of the other results for both sectors are robust to changes in the base year of analysis.

Time-Varying Coefficient Estimates. In Table 7 we examine whether our result that multilateral lending has a time-varying effect of could be an artifact of a poorly specified hazard function or other mishandling of the effect of the passage of time. Specifically, we allow the effect of trade-weighted peer adoption (columns 1 and 7) and the sector-level performance indicator (columns 2 and 8) to vary over time. We also test models in which each of these variables as well as the multilateral lending variable is allowed to have a time-varying effect (columns 3, 5, 9 and 11), and in which all three variables are allowed to have a time-varying effect (columns 6 and 12). While we find some weak evidence of a time-varying effect for peer adoption, the loosening of any of these restrictions does not alter the support for our hypotheses.

Disaggregation of the Dependent Variable. In Tables 8 and 10, we disaggregate our dependent variable to focus on five types of market-oriented reforms (deregulation, objectively-measured deregulation, subjectively-measured deregulation, privatization and liberalization). Tables 9 and 11 report results for each of the nine individual reforms in each sector. As we are no longer pooling our nine reform types together for each country year but are rather looking at smaller groups of reforms (Tables 8 and 10) or single reforms per country year (Tables 9 and 11), the samples are substantially smaller than our primary estimating sample, resulting in a substantial loss of statistical power, particularly in Tables 9 and 11.

In both telecommunications and electricity, multilateral lending is most strongly associated with the subsequent adoption of objectively-measured deregulation (the separation of the regulator from the ministry and from the incumbent state-owned operator, as indicated in columns 3 of Tables 8 and 10 and columns 1 and 3 of Tables 9 and 11). In the case of telecommunications, this effect increases over time (column 4 of Table 8 and columns 2 and 4 of Table 9).

The effect of multilateral lending on other reforms varies more between sectors. In telecommunications, there is no impact on the aggregated subjectively-measured deregulation

(columns 5 – 6 of Table 8). There is weak evidence of an initially negative association between multilateral lending and regulatory semi-autonomy, which diminishes over time and eventually becomes positive (columns 5 – 6 of Table 9), and an increasingly positive effect on regulatory autonomy over time (column 8 of Table 9). Other results for the telecommunications sector include a strong, time-invariant impact on the aggregated privatization measure (column 7 of Table 8), which seems to be concentrated on minority rather than majority privatizations (columns 9 – 14 of Table 9), no impact on the aggregated liberalization measure (columns 9 – 20 of Table 8), and evidence of a positive and declining effect on liberalization of local telephony (columns 17 – 18 of Table 9).

In the electricity sector, there is a positive but time-invariant effect on subjectively-measured deregulation (columns 5 – 6 of Table 10) that appears concentrated on regulatory semi-autonomy (columns 5 – 8 of Table 11); mixed evidence of a positive effect on aggregate privatization (columns 7 – 8 of Table 10) that, when unpacked, shows a strong negative association between multilateral lending and minority privatization (columns 9 – 10 of Table 11) and a strong positive association with majority and full privatization that declines over time (columns 11 – 14 of Table 11); and an initially negative effect on liberalization that declines in magnitude and eventually becomes positive (columns 9 – 10 of Table 11), which is concentrated on the existence of private generating companies (columns 17 – 18 of Table 11) as opposed to autogeneration (columns 15 – 16 of Table 11).

The effect of trade-weighted peer adoption is relatively robust in the telecommunications sector with a loss of statistical support only in the cases of liberalization (columns 9 – 10 of Table 8) particularly of local telephony (columns 17 – 18 of Table 9), regulatory semi-autonomy (columns 5 – 6 of Table 9) and full or majority privatization (columns 11 – 14 of Table 9). The positive aggregate effect of peer adoption in the electricity sector is, however, entirely concentrated in the adoption of liberalization reforms (columns 9 – 10 of Table 10) specifically, the allowance of autogeneration (columns 15 – 16 of Table 11).

Disaggregating the results also uncovers some additional statistically significant relationships between several of our control variables and types of reforms or individual reforms. For example, the effect of sectoral performance is concentrated on objective measures of deregulation in telecommunications (columns 3 – 4 of Table 8), particularly making the regulator independent from the incumbent (columns 3 – 4 of Table 9) as well as supporting full

privatization (columns 13 – 14 of Table 9). In the case of electricity, poor performance is again associated with objective measures of deregulation (columns 3 – 4 of Table 9 and columns 1 – 4 of Table 11) as well as regulatory semi-autonomy (columns 5 – 6 of Table 11) and the existence of private generators (columns 17 – 18 of Table 11).

We now find evidence of interest group effects on telecommunications privatization (columns 7 – 8 of Table 8), wherein the industrial lobby favors minority privatization (columns 9 – 10 of Table 9), foreign investors favor full privatization (columns 13 – 14 of Table 9) and urban consumers prefer privatization in the aggregate (columns 7 – 8 of Table 8). Foreign investors, similarly prefer privatization in electricity (columns 7 – 10 of Table 10) particularly majority privatization (columns 11 – 12 of Table 11). Industrial consumers again prefer minority privatization (columns 9 – 10 of Table 11) and are now opposed to majority privatization (columns 11 – 12 of Table 11). Urban consumers prefer majority or (weakly) full privatization (columns 11 – 14 of Table 11).

There is also evidence that countries with strong checks and balances in their political institutions are more likely to adopt privatization (columns 7 – 8 of Table 8) and liberalization (columns 9 – 10 of Table 8) reforms in telecommunications. The effect of checks and balances on privatization appears concentrated on minority privatizations (columns 9 – 10 of Table 9), whereas the effect on liberalization is significant for both long distance (columns 15 -16 of Table 9) and local service (columns 17 – 18 of Table 9), albeit much stronger in the latter case. Checks and balances are again positively associated with minority privatization in the case of the electricity sector (columns 9 – 10 of Table 11), although now they are negatively associated with full privatization (columns 13 – 14 of Table 11). Finally, larger countries are more likely to adopt telecommunications privatization (columns 7 – 8 of Table 8), particularly full privatization (columns 13 – 14 of Table 9) and liberalization (columns 9 – 10 of Table 8 and 15 – 18 of Table 9).

DISCUSSION AND CONCLUSION

The theoretical and empirical analysis in this paper extends prior work on the impact of coercion and emulation in an international setting by demonstrating that these institutional forces affect policy outcomes in conjunction with domestic economic and political factors. Countries

adopt market-oriented policy reforms in telecommunications and electricity as external actors with coercive power gain leverage over the domestic policymaking apparatus, and as the legitimacy of reforms grows through their prior adoption by peer countries. Thus, our analysis lends credence to the neo-institutional approach to diffusion, which can be fruitfully applied to the interaction among nation-states in the global system. Our findings are consistent with prior research proposing or demonstrating that early adopters are motivated to a greater extent by efficiency motives than are later adopters, who are influenced more strongly by coercive or mimetic isomorphic pressures (DiMaggio and Powell 1983; Westphal, Gulati, and Shortell 1997). Not only has the importance of isomorphic pressures increased over time due to the widespread diffusion of market-oriented reforms and the growing role of multilateral development agencies in international lending, but it is also the case that coercive pressures have increased over time for a given amount of multilateral lending.

One issue that we are unable to resolve is the precise mechanism through which external funding or prior adoption influences policy outcomes. We cannot separate direct coercion by multilateral lenders from the indirect empowerment of domestic political actors to achieve their desired policy outcomes. A more complex division exists in the case of mechanisms driving international emulation, which may include (boundedly) rational learning processes, coercive or normative isomorphism, and institutional pressure for conformity in appearance regardless of function (Gilardi 2003; Weyland 2003). Differentiating between these causal mechanisms is problematic even under ideal empirical circumstances due to the observational equivalence of many of the underlying propositions. The limitations of our international dataset compound this problem and we do not attempt to weigh in on these longstanding debates.

Our empirical evidence sheds light on the determinants of policy reform. Much previous scholarship in this area has focused on domestic economic and political conditions as explanatory factors. We concur that performance shortfalls generate pressure for policy change, thereby increasing the rate of reform adoption, and that technological change enables reform. We also find some evidence of interest group pressures driving reform adoption, particularly privatization, as well as evidence that budgetary slack facilitates reform adoption, particularly in the case of liberalization. Finally, we find evidence that checks and balances promote rather than limit market-oriented reforms in the case of minority privatization and, in the case of

telecommunications, liberalization. In no case, however, do we observe checks and balances to impede the adoption of market-oriented reforms.

Even after taking these domestic demand and supply factors into account, international coercion and emulation have a strong effect on domestic policy outcomes. Our results thus stand in contrast to prior work that questions the effect of capital market integration on policy convergence in industrialized countries, as well as a growing body of research that questions whether multilateral lending packages actually influence subsequent domestic policy outcomes (Bird 1996; Bird and Rowlands 2003; Killick 1998; Krueger 1998; Przeworski and Vreeland 2000; Stone 2002; Ul Haque and Khan 1998).

Future studies of the adoption of reform should include both the institutional forces emphasized by neo-institutional sociology, and the economic and political forces highlighted by scholars in positive political economy. These perspectives must be joined in order to generate a more complete depiction of the reform process, one that includes a prominent role for institutions, whether they are international or domestic in origin. Attempting to identify the determinants of infrastructure reform without acknowledging the importance of the forceful espousal of the practice by the World Bank and International Monetary Fund, or the introduction of the idea of private provision by Chile, ignores the leverage foreign direct investors and multilateral lenders possess as well as the power of ideas. Similarly, an assessment of policy reforms in countries subject to similar levels of international coercion and emulation must take into account differences in domestic economic and political factors in order to produce meaningful conclusions.

Our results also suggest that the growing integration of the global economy is exerting a stronger influence on some domestic policymakers over time. Specifically, the growing scope of conditionality of multilateral lending causes a given level of dependence on lending institutions to influence reform adoption today much more than it did ten or twenty years ago. This finding is likely to concern critics of conditionality and globalization more generally, who oppose such influence either on moral grounds or because they believe that externally-driven policy decisions reduce national welfare in the long run.

In this paper, we do not take a stance in the normative debate and emphasize that our empirical analysis makes no attempt to assess the welfare effects of the coercive influence that we identify. However, we are pursuing this topic in related research by assessing whether the

sources of infrastructure policy reform—both domestic and international—affect the impact of reforms on supply, productivity, quality and service price. Given the growing body of empirical findings suggesting that de jure and de facto deregulation, privatization and liberalization are together required for successful transformation of state-owned enterprises in infrastructure services, our disaggregated analyses point to an important subsequent line of inquiry. Specifically, if multilateral lending does not influence each of these reforms equally, are the outcomes of market-oriented reforms (such as improved efficiency, output, contractual security and market structure) better or worse in countries that reform as a result of direct or indirect coercion by multilateral lenders?

This is a tantalizing debate which neo-institutional sociology can illuminate. A country pressured into deregulating, privatizing or liberalizing when sectoral performance does not create domestic demands for such a reform, or when the national policymaking apparatus lacks sufficient checks and balances to support a well-organized market, might fare much worse than a country adopting such a reform as the result of clear performance shortfalls and in the presence of domestic institutional support. At the extreme, the normative policymaking prescription that the World Bank, International Monetary Fund and some academics espouse, rooted in the presumed wholesale efficacy of deregulation, privatization and liberalization, could be damaging for some countries, especially late adopters acting primarily as the result of coercion. In this case, institutional pressures may generate inferior policy choices and undermine internal support for market-oriented reforms. Understanding the drivers of adoption, as we do in this paper, is the first stage in a research program attempting to address the larger question of the extent to which pressures towards market-oriented reform result in ideal outcomes. Hence, neo-institutional sociology makes a contribution to the policy debate by unmasking the processes of cross-national coercion and emulation, and by empirically showing how much they contribute to policy diffusion above and beyond the effect of domestic supply and demand factors.

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Table 1: Timing of Reforms

	left-censored	1960-69	1970-79	1980-89	1990-99	right-censored
Telecommunications						
Regulator independent from Ministry	3	1	3	12	91	95
Regulator independent from incumbent	4	3	3	19	114	62
Regulator semi-autonomous	2	0	0	2	59	142
Regulator autonomous	2	0	2	2	62	137
Minority of sector privatized	0	1	1	7	47	149
Majority of sector privatized	0	1	0	2	23	179
Fully private	6	0	0	5	21	173
Competition in long distance	0	0	0	5	42	158
Competition in local service	0	0	0	2	45	158
Electricity						
Regulator independent from Ministry	2	1	1	3	46	152
Regulator independent from incumbent	4	1	1	5	59	135
Regulator semi-autonomous	2	1	1	3	48	150
Regulator autonomous	1	0	1	2	15	186
Minority of sector privatized	2	0	0	1	13	189
Majority of sector privatized	1	0	0	1	16	187
Fully private	6	0	0	1	4	194
Competition in autogeneration	93	13	22	9	6	62
Competition in generation for resale	43	1	1	1	43	116

Table 2: Heterogeneity in Early and Comprehensive Reformers

Early Reformers

Telecommunications	Electricity
Chile (1977)	Chile (1978)
Philippines (1979)	New Zealand (1986)
Hong Kong (1981)	South Africa (1987)
United Kingdom (1984)	Spain (1988)
Uruguay (1984)	United Kingdom (1990)
Japan (1985)	Norway (1991)
Spain (1987)	Honduras (1991)
Equatorial Guinea (1987)	Argentina (1991)
Haiti (1987)	Peru (1992)
Norway (1987)	Grenada (1992)
Belize (1988)	Belize (1992)
Mauritius (1988)	Venezuela (1992)
Finland (1988)	Nepal (1992)
Maldives (1988)	Colombia (1992)
Jamaica (1989)	Hungary (1994)

*Speed of Adoption of Comprehensive Reforms**

Telecommunications	Electricity
United Kingdom (1984)	Chile (1986)
Sweden (1993)	United Kingdom (1991)
Canada (1994)	Barbados (1991)
Finland (1994)	Argentina (1993)
Hong Kong (1995)	Peru (1995)
Philippines (1995)	Australia (1996)
El Salvador (1996)	Bolivia (1996)
Denmark (1997)	Colombia (1997)
Ghana (1997)	Trinidad & Tobago (1997)
Australia (1997)	Spain (1998)
India (1997)	Portugal (1998)
Netherlands (1997)	Panama (1998)
France (1998)	Netherlands (1999)
Austria (1998)	Dominican Republic (1999)
Belgium (1998)	Italy (1999)

* Deregulation, Privatization and Liberalization

Table 3: Summary Statistics and Correlation Matrix

Variable		Obs	Mean	Std. Dev	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Telecommunications Regulator independent from Ministry	(1)	8200	0.08	0.27	0.00	1.00													
Telecommunications Regulator independent from incumbent	(2)	8200	0.13	0.33	0.00	1.00	0.85												
Telecommunications Regulator semi-autonomous	(3)	8200	0.04	0.20	0.00	1.00	0.41	0.35											
Telecommunications Regulator autonomous	(4)	8200	0.06	0.23	0.00	1.00	0.59	0.50	0.68										
Telecommunications Minority of sector privatized	(5)	8200	0.05	0.22	0.00	1.00	0.20	0.41	0.08	0.12									
Telecommunications Majority of sector privatized	(6)	8200	0.06	0.24	0.00	1.00	0.11	0.15	0.10	0.15	-0.04								
Telecommunications Fully private	(7)	8200	0.04	0.19	0.00	1.00	0.40	0.47	0.05	0.27	-0.11	-0.04							
Telecommunications Competition in long distance	(8)	8200	0.03	0.18	0.00	1.00	0.12	0.16	0.12	0.09	-0.03	-0.03	0.27						
Telecommunications Competition in local service	(9)	8200	0.03	0.18	0.00	1.00	0.23	0.23	0.11	0.09	0.20	-0.03	0.16	0.61					
Electricity Regulator independent from Ministry	(10)	7840	0.05	0.21	0.00	1.00	0.61	0.56	0.38	0.56	0.24	0.21	0.56	0.21	0.21				
Electricity Regulator independent from incumbent	(11)	7840	0.07	0.25	0.00	1.00	0.59	0.55	0.36	0.51	0.30	0.23	0.49	0.28	0.31	0.90			
Electricity Regulator semi-autonomous	(12)	7840	0.05	0.21	0.00	1.00	0.61	0.56	0.38	0.56	0.24	0.21	0.56	0.21	0.21	1.00	0.90		
Electricity Regulator autonomous	(13)	7840	0.02	0.14	0.00	1.00	0.44	0.38	0.27	0.31	0.14	-0.04	0.50	0.26	0.18	0.67	0.60	0.67	
Electricity Minority of sector privatized	(14)	7840	0.03	0.18	0.00	1.00	0.08	0.21	0.10	0.04	0.34	0.15	-0.04	0.11	0.35	0.06	0.23	0.06	-0.03
Electricity Majority of sector privatized	(15)	7840	0.01	0.11	0.00	1.00	0.26	0.22	0.18	0.35	0.03	0.18	0.33	0.00	-0.04	0.34	0.34	0.34	0.19
Electricity Fully private	(16)	7840	0.01	0.11	0.00	1.00	0.22	0.21	-0.04	-0.06	0.04	-0.02	0.36	0.26	0.30	0.32	0.31	0.32	0.48
Electricity Competition in autogeneration	(17)	7879	0.62	0.48	0.00	1.00	-0.01	-0.02	-0.01	0.05	0.02	-0.09	0.11	0.08	0.04	0.02	-0.04	0.02	0.07
Electricity Competition in generation for resale	(18)	7880	0.25	0.43	0.00	1.00	0.30	0.39	0.08	0.27	0.24	0.09	0.38	0.23	0.23	0.40	0.44	0.40	0.31
Ratio of Multilateral Lending to GDP	(19)	3329	0.12	0.15	-0.02	1.58	-0.07	-0.14	-0.03	-0.06	-0.09	-0.03	-0.11	-0.14	-0.13	-0.13	-0.15	-0.13	-0.04
Trade Weighted Telecommunications Reform by Other Countries	(20)	3741	0.20	0.23	0.00	0.99	0.26	0.34	0.20	0.22	0.13	0.10	0.24	0.22	0.16	0.28	0.29	0.28	0.19
Trade Weighted Electricity Reform by Other Countries	(21)	3741	0.25	0.20	0.00	0.98	0.13	0.15	0.10	0.12	0.04	0.07	0.13	0.08	0.05	0.14	0.13	0.14	0.10
Waiting List for Telecommunications Services / Customers with Service	(22)	3136	0.31	0.46	0.00	6.25	-0.09	-0.19	-0.13	-0.07	-0.12	-0.05	-0.11	-0.11	-0.12	-0.13	-0.15	-0.13	-0.02
Electricity power and distribution losses / electricity output (log)	(23)	3574	2.42	0.56	0.16	5.47	0.12	0.12	0.20	0.22	0.06	0.09	0.06	0.01	0.03	0.23	0.20	0.23	0.12
Value Added by Industry	(24)	4908	29.45	12.93	2.05	90.48	0.07	0.09	-0.15	-0.01	0.15	0.02	0.05	0.06	0.08	0.03	0.07	0.03	0.01
Population urban, percentage	(25)	8200	42.90	25.02	0.00	100.00	0.33	0.40	0.07	0.19	0.18	0.10	0.36	0.01	0.11	0.37	0.35	0.37	0.24
Ratio of Foreign Direct Investment to GDP	(26)	4216	1.76	4.19	-25.78	145.13	0.22	0.31	0.16	0.10	0.24	0.23	0.21	0.14	0.26	0.31	0.39	0.31	0.14
Political Constraints	(27)	5288	0.26	0.33	0.00	0.89	0.21	0.32	0.08	0.09	0.21	0.07	0.17	0.26	0.24	0.21	0.24	0.21	0.05
Budget Balance to GDP	(28)	2975	-3.43	6.07	-64.49	58.71	0.23	0.27	0.05	0.12	0.10	0.10	0.22	0.17	0.12	0.18	0.19	0.18	0.17
Population (log)	(29)	7890	15.23	1.96	10.61	20.95	-0.04	0.02	0.05	0.17	0.03	-0.07	0.15	0.28	0.18	0.12	0.11	0.12	0.12
Real per capita GDP (log)	(30)	5833	7.48	1.52	4.34	10.87	0.26	0.32	-0.01	0.08	0.10	0.05	0.28	0.07	0.05	0.21	0.23	0.21	0.08
Government reserves, ratio of imports	(31)	5362	0.00	0.00	0.00	0.04	0.26	0.19	0.06	0.17	0.05	0.02	0.18	0.11	0.10	0.22	0.20	0.22	0.16
Debt service, ratio of exports	(32)	3004	19.67	17.16	0.00	225.19	0.04	-0.03	-0.03	0.06	-0.06	-0.07	0.12	-0.07	-0.09	0.08	0.01	0.08	0.11
Openness, Portfolio Investment (exports + imports)/GDP	(33)	3345	0.00	0.03	-0.29	0.45	0.13	0.13	0.05	0.14	0.05	0.03	0.14	0.05	0.04	0.08	0.09	0.08	0.00
Countries currently under a multilateral loan agreement	(34)	7995	0.31	0.28	0.00	0.70	0.35	0.46	0.29	0.25	0.21	0.13	0.26	0.25	0.24	0.35	0.41	0.35	0.16
Predicted Probability of Increasing Multilateral Loan Exposure	(35)	1221	0.53	0.15	0.04	0.93	0.08	0.10	0.08	0.02	0.05	0.03	-0.03	0.05	0.06	0.06	0.08	0.06	0.01
Polity	(36)	5086	-0.10	7.75	-10.00	10.00	-0.32	-0.41	-0.10	-0.20	-0.18	-0.09	-0.31	-0.28	-0.24	-0.30	-0.35	-0.30	-0.13
Duration of Political Regime	(37)	5424	21.60	23.90	0.00	99.00	0.29	0.34	0.10	0.13	0.12	0.06	0.21	0.17	0.17	0.24	0.27	0.24	0.08
Changes in Effective Executive	(38)	5491	0.17	0.43	0.00	4.00	0.14	0.08	0.06	0.00	-0.08	0.01	-0.17	0.01	0.05	-0.09	-0.12	-0.09	-0.12
Openness, Trade (exports + imports)/GDP	(39)	5637	21.60	23.92	1.13	439.03	0.04	0.12	-0.01	-0.14	0.19	0.11	-0.13	0.00	0.03	-0.11	-0.02	-0.11	-0.11
Debt service, ratio of GDP	(40)	3294	4.92	5.09	0.00	107.36	0.07	0.01	-0.07	-0.09	0.00	0.03	0.02	-0.06	-0.09	0.00	-0.01	0.00	0.04
Government spending, ratio of GDP	(41)	3106	28.28	14.85	0.00	212.09	-0.13	-0.16	-0.09	-0.27	0.03	0.02	-0.16	-0.22	-0.08	-0.12	-0.11	-0.12	-0.16
Government revenue, ratio of GDP	(42)	3121	24.16	12.77	0.00	179.80	-0.04	-0.05	-0.11	-0.26	0.11	0.04	-0.10	-0.17	-0.03	-0.07	-0.06	-0.07	-0.11
Government subsidies and transfers, ratio of GDP	(43)	2768	0.09	0.09	0.00	1.91	0.17	0.20	-0.02	-0.09	0.23	0.06	0.09	-0.06	0.17	0.20	0.24	0.20	0.02
Government consumption, ratio of GDP	(44)	5537	15.81	6.96	1.38	76.22	-0.19	-0.21	0.06	-0.15	-0.02	0.06	-0.27	-0.16	-0.03	-0.14	-0.11	-0.14	-0.21
Population growth	(45)	8200	1.88	1.63	-44.40	18.02	-0.20	-0.28	-0.03	0.01	-0.16	-0.12	-0.15	-0.07	-0.11	-0.19	-0.27	-0.19	-0.01
Real per capita GDP growth	(46)	5840	1.65	6.39	-52.10	79.71	0.08	0.10	0.00	-0.05	0.06	-0.01	0.06	0.07	0.06	0.08	0.08	0.08	0.08

Table 3: Summary Statistics and Correlation Matrix (continued)

Variable		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Electricity Majority of sector privatized	(15)	-0.04													
Electricity Fully private	(16)	-0.03	-0.03												
Electricity Competition in autogeneration	(17)	-0.12	0.05	0.00											
Electricity Competition in generation for resale	(18)	0.22	0.18	0.17	0.19										
Ratio of Multilateral Lending to GDP	(19)	-0.15	-0.04	-0.04	0.02	-0.31									
Trade Weighted Telecommunications Reform by Other Countries	(20)	0.10	0.09	0.07	0.05	0.29	-0.08								
Trade Weighted Electricity Reform by Other Countries	(21)	0.02	0.08	0.03	0.02	0.16	-0.04								
Waiting List for Telecommunications Services / Customers with Service	(22)	-0.13	-0.11	-0.07	0.09	-0.18	0.11	-0.26	-0.38						
Electricity power and distribution losses / electricity output (log)	(23)	-0.03	0.13	-0.04	-0.11	0.24	0.17	0.07	0.07	0.07					
Value Added by Industry	(24)	0.14	-0.05	0.10	0.07	0.34	-0.45	0.04	0.06	0.00	-0.02	-0.14			
Population urban, percentage	(25)	0.14	0.22	0.22	-0.17	0.38	-0.41	0.24	0.34	0.16	-0.30	0.11			
Ratio of Foreign Direct Investment to GDP	(26)	0.32	0.12	0.17	-0.08	0.22	-0.20	0.19	0.28	0.09	-0.19	0.11	0.14		
Political Constraints	(27)	0.17	0.07	0.08	0.03	0.24	-0.34	0.26	0.37	0.15	-0.32	0.04	0.29	0.30	
Budget Balance to GDP	(28)	0.12	0.11	0.16	0.03	0.19	-0.27	0.20	0.29	0.11	-0.16	-0.10	0.34	0.11	0.15
Population (log)	(29)	-0.03	0.05	0.00	0.29	0.33	-0.11	0.09	0.13	0.02	0.01	0.03	-0.04	-0.19	0.05
Real per capita GDP (log)	(30)	0.14	0.16	0.13	-0.03	0.34	-0.61	0.20	0.30	0.12	-0.29	-0.08	0.78	0.20	0.42
Government reserves, ratio of imports	(31)	0.00	0.20	0.20	-0.09	0.28	-0.27	0.14	0.20	0.10	-0.13	0.10	0.48	0.06	0.25
Debt service, ratio of exports	(32)	-0.16	0.14	-0.01	0.07	0.05	0.24	0.00	-0.01	0.02	0.02	0.10	0.10	-0.21	-0.12
Openness, Portfolio Investment (exports + imports)/GDP	(33)	0.00	0.11	0.01	-0.02	0.08	-0.06	0.05	0.07	0.03	-0.06	0.02	0.13	0.00	0.14
Countries currently under a multilateral loan agreement	(34)	0.20	0.14	0.09	-0.11	0.18	-0.02	0.39	0.56	0.10	-0.39	0.15	0.29	0.28	0.34
Predicted Probability of Increasing Multilateral Loan Exposure	(35)	0.00	-0.07	-0.01	-0.04	0.04	-0.09	0.07	0.10	0.03	-0.01	0.07	0.00	0.01	0.19
Polity	(36)	-0.20	-0.18	-0.18	0.03	-0.40	0.61	-0.32	-0.47	-0.17	0.36	0.02	-0.66	-0.27	-0.65
Duration of Political Regime	(37)	0.14	0.01	0.09	-0.08	0.19	-0.27	0.29	0.42	0.19	-0.23	0.23	0.33	0.20	0.70
Changes in Effective Executive	(38)	0.01	-0.04	-0.10	0.11	-0.05	0.10	0.09	0.13	0.02	0.01	0.03	-0.20	0.01	0.03
Openness, Trade (exports + imports)/GDP	(39)	0.30	-0.14	-0.03	-0.08	-0.10	0.00	0.01	0.02	-0.04	-0.05	-0.08	-0.08	0.38	0.11
Debt service, ratio of GDP	(40)	-0.06	0.01	0.02	0.02	-0.02	0.29	-0.02	-0.03	0.00	-0.07	0.02	0.01	0.04	-0.08
Government spending, ratio of GDP	(41)	0.00	-0.12	-0.09	-0.05	-0.14	0.08	-0.20	-0.28	-0.13	0.17	0.06	-0.08	0.12	-0.09
Government revenue, ratio of GDP	(42)	0.06	-0.10	-0.03	-0.08	-0.03	-0.10	-0.14	-0.20	-0.09	0.10	0.00	0.12	0.20	-0.01
Government subsidies and transfers, ratio of GDP	(43)	0.15	0.05	0.09	-0.17	0.11	-0.27	-0.01	-0.01	-0.02	-0.12	0.08	0.43	0.18	0.23
Government consumption, ratio of GDP	(44)	0.12	-0.05	-0.13	-0.14	-0.23	0.07	-0.15	-0.22	-0.11	0.04	0.05	-0.17	0.12	-0.10
Population growth	(45)	-0.13	-0.06	-0.06	0.19	-0.09	0.25	-0.14	-0.20	-0.06	0.17	-0.09	-0.31	-0.22	-0.33
Real per capita GDP growth	(46)	0.05	-0.01	0.10	0.01	0.06	-0.13	0.01	0.02	-0.01	0.04	0.04	0.04	0.10	0.13

		(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)
Population (log)	(29)	0.06																	
Real per capita GDP (log)	(30)	0.37	-0.18																
Government reserves, ratio of imports	(31)	0.30	0.10	0.35															
Debt service, ratio of exports	(32)	0.00	0.29	-0.14	0.15														
Openness, Portfolio Investment (exports + imports)/GDP	(33)	0.05	0.06	0.12	0.14	0.00													
Countries currently under a multilateral loan agreement	(34)	0.22	0.07	0.19	0.05	-0.03	0.08												
Predicted Probability of Increasing Multilateral Loan Exposure	(35)	-0.01	0.11	0.05	0.02	-0.01	0.04	0.07											
Polity	(36)	-0.46	-0.05	-0.78	-0.54	0.22	-0.16	-0.39	-0.10										
Duration of Political Regime	(37)	0.22	-0.06	0.40	0.26	-0.12	0.12	0.33	0.26	-0.56									
Changes in Effective Executive	(38)	-0.06	-0.06	-0.10	0.04	-0.01	-0.08	0.06	-0.01	0.03	0.00								
Openness, Trade (exports + imports)/GDP	(39)	0.01	-0.59	0.17	-0.27	-0.45	-0.06	0.15	-0.08	-0.09	0.07	0.03							
Debt service, ratio of GDP	(40)	-0.15	-0.16	-0.02	-0.03	0.31	-0.06	0.04	-0.02	0.15	-0.13	0.01	0.27						
Government spending, ratio of GDP	(41)	-0.36	-0.41	-0.01	-0.20	-0.12	-0.03	-0.02	-0.07	0.19	-0.25	0.04	0.36	0.26					
Government revenue, ratio of GDP	(42)	-0.05	-0.41	0.23	-0.09	-0.19	-0.01	0.05	-0.06	-0.06	-0.17	0.00	0.43	0.24	0.86				
Government subsidies and transfers, ratio of GDP	(43)	0.15	-0.10	0.40	0.09	-0.06	0.08	0.26	0.07	-0.33	0.21	-0.12	0.09	0.10	0.48	0.64			
Government consumption, ratio of GDP	(44)	-0.29	-0.47	-0.11	-0.28	-0.19	-0.04	-0.06	-0.05	0.24	-0.27	-0.03	0.38	0.14	0.60	0.47	0.06		
Population growth	(45)	-0.21	0.01	-0.38	-0.04	0.15	-0.06	-0.39	-0.08	0.40	-0.36	0.15	-0.10	0.10	-0.11	-0.26	-0.60	0.19	
Real per capita GDP growth	(46)	0.22	0.05	0.16	0.11	-0.16	0.02	0.02	-0.01	-0.18	0.10	0.02	0.12	-0.13	-0.11	0.02	0.08	-0.15	-0.19

Table 4: Base Regression Results

	-First Stage-		----------Telecom----------		--------Electricity---------	
	(1)		(2)	(3)	(4)	(5)
Reserves (as a ratio of imports)	-46.816	Ratio of Multilateral Lending to GDP	2.730	0.391	1.117	-1.114
	0.001	(H1a > 0)	*0.041*	*0.860*	*0.230*	*0.557*
Budget Balance (as a ratio of GDP)	-0.016	Trade Weighted Reform by Other Countries	1.384	1.412	1.324	1.330
	0.049	(H2 > 0)	*0.001*	*0.001*	*0.012*	*0.010*
Debt Service (as a ratio of exports)	0.007	Sectoral Performance Shortfall	0.406	0.400	0.301	0.304
	0.025		*0.021*	*0.028*	*0.008*	*0.006*
Ratio of Foreign Direct Investment to GDP	0.000	Value Added by Industry	0.005	0.000	0.007	0.006
	0.990		*0.966*	*0.980*	*0.328*	*0.363*
Ratio of Portfolio Investment to GDP	0.630	Urban population share	0.011	0.012	0.003	0.004
	0.579		*0.193*	*0.179*	*0.669*	*0.646*
Count of other countries receiving loan	-0.393	Ratio of Foreign Direct Investment to GDP	0.046	0.045	0.029	0.029
	0.179		*0.094*	*0.104*	*0.185*	*0.188*
New Government?	0.169	Political Constraints	0.354	0.360	0.096	0.092
	0.027		*0.336*	*0.334*	*0.616*	*0.630*
Political Constraints	-0.348	Budget Balance (as a ratio of GDP)	0.045	0.044	0.010	0.010
	0.026		*0.033*	*0.037*	*0.374*	*0.404*
Log of Population	-0.051	Log of Population	0.137	0.135	0.118	0.118
	0.060		*0.088*	*0.099*	*0.015*	*0.015*
Log of Real Per Capita Income	-0.178	Log of Real Per Capita Income	0.099	0.081	0.115	0.114
	0.000		*0.632*	*0.700*	*0.393*	*0.398*
Constant	2.320	Predicted Probability of Increasing	-0.676	-0.561	0.078	0.171
	0.000	Multilateral Exposure, From (1)	*0.484*	*0.573*	*0.892*	*0.760*
		Constant	-8.110	-7.979	-14.834	-14.987
N	11475		*0.002*	*0.002*	*0.000*	*0.000*
Pseudo Log-Likelihood	-7417.5	*Time Varying Coefficient Estimates*				
		Constant	0.541	0.523	1.296	1.294
			0.108	*0.121*	*0.000*	*0.000*
		Ratio of Multilateral Lending to GDP		0.510		0.341
		(H1a > 0; H1b > 0)		*0.003*		*0.030*
		N	5319	5319	5508	5508
		Pseudo Log-Likelihood	433.7	447.0	1277.8	1297.4

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed
Note: Dependent Variable in First Stage Regression (1) is a 0/1 indicator variable that takes the value of 1 when a country increases its exposure to multilateral institutions.
Dependent Variable in Remaining Equations is a 0/1 indicator variable that takes the value of 1 when a country initiates a given reform in a given year.

Table 5: Robustness to Inclusion of Additional Independent Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Telecommunications, Effect of Multilateral Lending Constant Across Time												
Ratio of Multilateral Lending to GDP	2.654	2.857	2.740	3.190	2.745	3.012	2.509	2.617	2.402	2.391	2.574	2.821
(H1 > 0)	*0.032*	*0.035*	*0.039*	*0.073*	*0.041*	*0.025*	*0.071*	*0.057*	*0.076*	*0.076*	*0.060*	*0.038*
Trade Weighted Reform by Other Countries	1.220	1.328	1.394	0.990	1.394	1.345	1.371	1.380	1.150	1.169	1.362	1.462
(H2 > 0)	*0.004*	*0.003*	*0.001*	*0.010*	*0.001*	*0.002*	*0.001*	*0.001*	*0.008*	*0.007*	*0.001*	*0.000*
Rotated Variable (See Note)	0.416	0.004	0.069	0.066	0.003	1.282	0.011	0.002	-0.028	-0.025	0.051	0.023
	0.020	*0.433*	*0.469*	*0.719*	*0.262*	*0.168*	*0.624*	*0.725*	*0.054*	*0.079*	*0.466*	*0.306*
N	5319	5211	5319	3222	5310	5175	5319	5310	5193	5184	5319	5319
Telecommunications, Effect of Multilateral Lending Varying Across Time												
Ratio of Multilateral Lending to GDP	0.077	0.409	0.437	2.660	0.482	0.900	0.034	0.138	-0.114	-0.103	0.209	0.479
(H1a > 0)	*0.974*	*0.853*	*0.842*	*0.467*	*0.828*	*0.671*	*0.988*	*0.952*	*0.962*	*0.966*	*0.927*	*0.827*
Trade Weighted Reform by Other Countries	1.260	1.359	1.426	1.044	1.425	1.370	1.400	1.411	1.188	1.207	1.394	1.494
(H2 > 0)	*0.002*	*0.002*	*0.001*	*0.007*	*0.001*	*0.001*	*0.001*	*0.001*	*0.005*	*0.004*	*0.001*	*0.000*
Rotated Variable (See Note)	0.042	0.004	0.073	0.061	0.003	1.222	0.014	0.002	-0.028	-0.025	0.050	0.023
	0.018	*0.427*	*0.471*	*0.737*	*0.268*	*0.191*	*0.544*	*0.626*	*0.055*	*0.078*	*0.474*	*0.309*
Time Varying Coefficient Estimate												
Ratio of Multilateral Lending to GDP	0.564	0.523	0.505	0.322	0.513	0.482	0.523	0.518	0.523	0.526	0.507	0.513
(H1a > 0; H1b > 0)	*0.003*	*0.002*	*0.003*	*0.392*	*0.003*	*0.001*	*0.004*	*0.003*	*0.010*	*0.008*	*0.003*	*0.003*
N	5319	5211	5319	3222	5310	5175	5319	5310	5193	5184	5319	5319
Electricity, Effect of Multilateral Lending Constant Across Time												
Ratio of Multilateral Lending to GDP	0.803	0.860	0.882	1.841	0.911	1.030	0.677	0.727	0.915	0.949	0.742	0.893
(H1a > 0)	*0.370*	*0.335*	*0.334*	*0.080*	*0.311*	*0.255*	*0.474*	*0.432*	*0.346*	*0.324*	*0.402*	*0.326*
Trade Weighted Reform by Other Countries	1.371	1.516	1.430	0.985	1.420	1.441	1.414	1.416	1.343	1.349	1.296	1.456
(H2 > 0)	*0.006*	*0.003*	*0.005*	*0.253*	*0.006*	*0.004*	*0.007*	*0.006*	*0.006*	*0.006*	*0.012*	*0.004*
Rotated Variable (See Note)	0.009	-0.004	-0.029	0.056	-0.001	-0.349	0.007	0.002	-0.009	-0.010	0.102	0.100
	0.438	*0.354*	*0.519*	*0.681*	*0.788*	*0.503*	*0.649*	*0.247*	*0.261*	*0.278*	*0.048*	*0.475*
N	5616	5706	5706	3483	5697	5535	5706	5697	5580	5562	5706	5706
Electricity, Effect of Multilateral Lending Varying Across Time												
Ratio of Multilateral Lending to GDP	-2.158	-1.828	-1.919	-2.838	-1.855	-1.995	-2.260	-2.054	-1.673	-1.514	-1.476	-1.989
(H1 > 0)	*0.255*	*0.340*	*0.31*	*0.240*	*0.313*	*0.290*	*0.182*	*0.288*	*0.427*	*0.473*	*0.412*	*0.290*
Trade Weighted Reform by Other Countries	1.372	1.509	1.432	0.720	1.421	1.443	1.413	1.417	1.344	1.349	1.302	1.457
(H2 > 0)	*0.005*	*0.002*	*0.004*	*0.218*	*0.005*	*0.003*	*0.006*	*0.005*	*0.005*	*0.004*	*0.009*	*0.003*
Rotated Variable (See Note)	0.010	-0.004	-0.029	0.065	-0.001	-0.365	0.008	0.003	-0.009	-0.010	0.100	0.098
	0.404	*0.395*	*0.522*	*0.637*	*0.776*	*0.478*	*0.566*	*0.222*	*0.238*	*0.258*	*0.048*	*0.483*
Time Varying Coefficient Estimate												
Ratio of Multilateral Lending to GDP	0.420	0.398	*0.408*	0.624	0.402	0.462	0.418	0.403	0.375	0.365	0.338	0.414
(H1a > 0; H1b > 0)	*0.023*	*0.034*	*0.03*	*0.082*	*0.033*	*0.014*	*0.027*	*0.030*	*0.048*	*0.052*	*0.061*	*0.031*
N	5616	5706	5706	3483	5697	5535	5706	5697	5580	5562	5706	5706

* p-values are reported in italics underneath coefficient estimates.

** Coefficient estimates other than those of theoretical interest, strata specific constants and time paramaters are all suppressed

Rotated Variable

(1) Level of Democratization, Polity
(2) Durability of Political Regime, Years since regime change
(3) Durability of Political Leadership, Years of change in leadership
(4) Ideology of Political Leadership, Right of Center Government
(5) Openness of Host country economy, (exports + imports)/GDP
(6) Openness of Host country economy, portfolio investment/GDP
(7) Debt burden, debt service/GDP
(8) Debt buden, debt service/exports
(9) Size of government (expenditure), Share of GDP
(10) Size of government (revenue), Government Share of GDP
(11) Population growth
(12) Real per capita income growth

Table 6: Robustness of Results to Varying Base Year for Hazard Analysis

	Telecommunications						Electricity					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ratio of Multilateral Lending to GDP	2.861	1.193	3.058	1.096	3.489	2.009	0.943	-0.921	1.132	-0.961	1.786	0.871
(H1a > 0)	*0.031*	*0.556*	*0.024*	*0.598*	*0.009*	*0.342*	*0.283*	*0.607*	*0.224*	*0.587*	*0.094*	*0.581*
Trade Weighted Reform by Other Countries	1.177	1.210	1.256	1.292	1.192	1.237	1.281	1.270	1.323	1.328	1.340	1.341
(H2 > 0)	*0.006*	*0.004*	*0.004*	*0.003*	*0.002*	*0.001*	*0.015*	*0.013*	*0.012*	*0.010*	*0.012*	*0.011*
Sectoral Performance Shortfall	0.386	0.383	0.434	0.428	0.491	0.482	0.288	0.292	0.305	0.309	0.290	0.296
	0.034	*0.042*	*0.019*	*0.024*	*0.018*	*0.023*	*0.009*	*0.007*	*0.008*	*0.006*	*0.017*	*0.014*
Value Added by Industry	0.007	0.006	0.003	0.003	0.002	0.002	0.007	0.007	0.007	0.006	0.004	0.004
	0.600	*0.620*	*0.788*	*0.805*	*0.856*	*0.865*	*0.268*	*0.303*	*0.340*	*0.374*	*0.568*	*0.600*
Urban population share	0.011	0.012	0.010	0.011	0.010	0.010	0.004	0.004	0.003	0.004	0.003	0.003
	0.193	*0.179*	*0.193*	*0.177*	*0.200*	*0.182*	*0.603*	*0.571*	*0.669*	*0.647*	*0.683*	*0.658*
Ratio of Foreign Direct Investment to GDP	0.031	0.031	0.041	0.041	0.043	0.042	0.029	0.029	0.029	0.029	0.031	0.031
	0.255	*0.269*	*0.140*	*0.151*	*0.131*	*0.142*	*0.196*	*0.201*	*0.183*	*0.184*	*0.161*	*0.155*
Political Constraints	0.317	0.325	0.324	0.332	0.430	0.437	0.135	0.129	0.094	0.089	0.093	0.087
	0.372	*0.368*	*0.362*	*0.358*	*0.227*	*0.226*	*0.464*	*0.484*	*0.628*	*0.643*	*0.656*	*0.677*
Budget Balance (as a ratio of GDP)	0.052	0.051	0.042	0.041	0.038	0.037	0.012	0.012	0.010	0.010	0.011	0.011
	0.012	*0.014*	*0.031*	*0.036*	*0.039*	*0.045*	*0.255*	*0.266*	*0.371*	*0.400*	*0.391*	*0.383*
Log of Population	0.138	0.136	0.141	0.138	0.137	0.134	0.111	0.111	0.118	0.119	0.129	0.129
	0.078	*0.086*	*0.073*	*0.082*	*0.076*	*0.087*	*0.019*	*0.018*	*0.016*	*0.015*	*0.013*	*0.013*
Log of Real Per Capita Income	0.127	0.108	0.147	0.128	0.195	0.176	0.088	0.084	0.117	0.116	0.146	0.143
	0.538	*0.605*	*0.458*	*0.522*	*0.323*	*0.381*	*0.492*	*0.512*	*0.391*	*0.394*	*0.300*	*0.311*
Predicted Probability of Increasing	-0.080	0.008	-0.589	0.332	-0.518	-0.410	0.169	0.253	0.076	0.165	-0.110	*-0.072*
Multilateral Exposure, From (1), Table 4	*0.938*	*0.994*	*0.545*	*0.358*	*0.627*	*0.709*	*0.758*	*0.636*	*0.897*	*0.773*	*0.886*	*0.925*
Constant	-16.950	-17.006	-9.310	-0.487	-8.651	-8.507	-29.505	-30.122	-13.975	-14.107	-10.781	-10.834
	0.003	*0.003*	*0.000*	*0.628*	*0.000*	*0.000*	*0.001*	*0.001*	*0.000*	*0.000*	*0.000*	*0.000*
Time Varying Coefficient Estimates												
Constant	1.313	1.319	0.686	0.670	0.570	0.544	1.960	1.981	1.229	1.226	0.916	0.905
	0.001	*0.001*	*0.043*	*0.051*	*0.012*	*0.018*	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	*0.001*
Ratio of Multilateral Lending to GDP		0.169		0.424		0.455		0.137		0.354		0.337
(H1a > 0; H1b > 0)		*0.004*		*0.005*		*0.061*		*0.029*		*0.034*		*0.137*
N	5418	5418	5031	5031	4239	4239	6084	6084	5391	5391	4419	4419
Pseudo Log-Likelihood	935.60	948.46	384.85	397.77	177.32	190.92	2662.08	2683.52	1164.18	1183.30	592.74	607.78

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed
*** Initial year for analysis set to 1960 in columns 1-2, 1979 for columsn 3-4, 1986 for columns 5-6, 1960 for columns 7-8, 1978 for columns 9-10 and 1987 for columns 11-12.

Table 7: Robustness of Results to Allowing Effect of Other Variables to Vary Across Time

	Telecommunications						Electricity					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ratio of Multilateral Lending to GDP	2.747	2.800	-0.459	0.446	2.832	-0.130	0.941	0.955	-2.672	-2.017	0.998	-2.528
(H1a > 0)	*0.040*	*0.039*	*0.856*	*0.840*	*0.037*	*0.956*	*0.306*	*0.285*	*0.235*	*0.012*	*0.265*	*0.232*
Trade Weighted Reform by Other Countries	-0.988	1.408	-1.326	1.430	-1.596	-1.733	-1.314	1.234	-1.053	1.249	-1.164	0.898
(H2 > 0)	*0.628*	*0.001*	*0.539*	*0.001*	*0.443*	*0.406*	*0.431*	*0.015*	*0.534*	*0.012*	*0.506*	*0.617*
Sectoral Performance Shortfall	0.399	0.105	0.386	0.110	-0.254	-0.226	0.293	0.447	0.298	0.496	0.562	0.570
	0.024	*0.785*	*0.036*	*0.779*	*0.532*	*0.558*	*0.011*	*0.185*	*0.008*	*0.162*	*0.129*	*0.129*
Value Added by Industry	0.001	0.001	0.001	0.001	0.002	0.001	0.008	0.006	0.007	0.006	0.008	0.007
	0.917	*0.936*	*0.913*	*0.952*	*0.901*	*0.919*	*0.241*	*0.345*	*0.278*	*0.359*	*0.247*	*0.264*
Urban population share	0.012	0.011	0.012	0.012	0.011	0.012	0.003	0.004	0.004	0.004	0.003	0.003
	0.181	*0.197*	*0.172*	*0.181*	*0.190*	*0.176*	*0.675*	*0.654*	*0.657*	*0.641*	*0.685*	*0.671*
Ratio of Foreign Direct Investment to GDP	0.040	0.045	0.039	0.045	0.041	0.041	0.034	0.033	0.033	0.033	0.035	0.034
	0.150	*0.099*	*0.162*	*0.111*	*0.145*	*0.155*	*0.142*	*0.140*	*0.152*	*0.142*	*0.124*	*0.132*
Political Constraints	0.403	0.356	0.408	0.358	0.412	0.413	0.124	0.098	0.111	0.091	0.108	0.101
	0.278	*0.336*	*0.276*	*0.338*	*0.269*	*0.272*	*0.506*	*0.584*	*0.547*	*0.609*	*0.550*	*0.577*
Budget Balance (as a ratio of GDP)	0.046	0.044	0.045	*0.044*	0.046	0.046	0.011	0.011	0.010	0.010	0.011	0.011
	0.030	*0.037*	*0.030*	*0.039*	*0.031*	*0.030*	*0.335*	*0.317*	*0.386*	*0.365*	*0.305*	*0.354*
Log of Population	0.130	0.135	0.127	0.134	0.132	0.131	0.116	0.124	0.115	0.123	0.126	0.124
	0.118	*0.099*	*0.129*	*0.105*	*0.122*	*0.128*	*0.018*	*0.011*	*0.018*	*0.011*	*0.011*	*0.012*
Log of Real Per Capita Income	0.069	0.091	0.051	0.078	0.070	0.056	0.096	0.116	0.093	0.112	0.113	0.107
	0.735	*0.658*	*0.807*	*0.712*	*0.731*	*0.790*	*0.486*	*0.415*	*0.499*	*0.431*	*0.422*	*0.446*
Predicted Probability of Increasing	-0.797	-0.705	-0.676	-0.545	-0.804	-0.629	0.078	0.101	0.182	0.193	0.036	0.133
Multilateral Exposure, From (1), Table 4	*0.432*	*0.473*	*0.516*	*0.591*	*0.441*	*0.559*	*0.890*	*0.860*	*0.744*	*0.731*	*0.949*	*0.810*
Constant	-7.235	-7.888	-6.924	-7.819	-6.780	-6.628	-12.878	-14.434	-12.934	-14.503	-14.001	-13.904
	0.002	*0.003*	*0.003*	*0.003*	*0.004*	*0.005*	*0.004*	*0.004*	*0.004*	*0.004*	*0.003*	*0.003*
Time Varying Coefficient Estimates												
Constant	0.481	0.517	0.439	0.502	0.403	0.379	1.108	1.076	1.101	1.090	1.038	1.040
	0.139	*0.144*	*0.168*	*0.160*	*0.255*	*0.280*	*0.004*	*0.009*	*0.005*	*0.009*	*0.009*	*0.010*
Ratio of Multilateral Lending to GDP			0.598	0.508		0.563			0.479	0.260		0.409
(H1a > 0; H1b > 0)			*0.001*	*0.002*		*0.001*			*0.004*	*0.048*		*0.014*
Trade Weighted Reform by Other Countries	0.321		0.373		0.415	0.432	0.257		0.235		0.213	0.197
	0.172		*0.108*		*0.093*	*0.064*	*0.059*		*0.078*		*0.169*	*0.199*
Sectoral Performance Shortfall		0.049		0.039	0.096	0.081		0.045		0.035	0.034	0.027
		0.329		*0.402*	*0.118*	*0.131*		*0.231*		*0.316*	*0.427*	*0.481*
N	5319	5319	5319	5319	5319	5319	5706	5706	5706	5706	5706	5706
Pseudo Log-Likelihood	445.94	458.54	440.23	451.29	452.02	463.05	1338.22	1351.35	1358.1	1368.3	1358.15	1374.79

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed

Table 8: Robustness of Results to Disaggregation of Dependent Variable, Telecommunications by Type of Reform

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ratio of Multilateral Lending to GDP	2.698	-0.522	3.317	0.847	1.036	-6.024	5.454	0.456	-6.345	8.291
(H1a > 0)	*0.063*	*0.817*	*0.015*	*0.671*	*0.641*	*0.276*	*0.014*	*0.909*	*0.435*	*0.698*
Trade Weighted Reform by Other Countries	1.194	1.200	1.028	1.023	1.593	1.633	2.071	2.071	0.844	0.838
(H2 > 0)	*0.019*	*0.015*	*0.020*	*0.019*	*0.125*	*0.100*	*0.016*	*0.016*	*0.547*	*0.548*
Sectoral Performance Shortfall	0.434	0.419	0.562	0.556	-0.006	-0.055	0.569	0.571	0.713	0.703
	0.012	*0.015*	*0.000*	*0.000*	*0.988*	*0.884*	*0.223*	*0.215*	*0.330*	*0.346*
Value Added by Industry	-0.010	-0.010	-0.003	-0.003	-0.039	-0.038	0.026	0.026	0.004	0.004
	0.511	*0.524*	*0.820*	*0.821*	*0.262*	*0.280*	*0.058*	*0.055*	*0.902*	*0.917*
Urban population share	0.011	0.011	0.010	0.010	0.014	0.015	0.035	0.035	0.005	0.005
	0.276	*0.272*	*0.331*	*0.334*	*0.317*	*0.281*	*0.015*	*0.014*	*0.673*	*0.671*
Ratio of Foreign Direct Investment to GDP	0.233	0.021	0.038	0.038	-0.011	-0.016	0.108	0.105	0.157	0.158
	0.483	*0.522*	*0.223*	*0.228*	*0.861*	*0.798*	*0.013*	*0.015*	*0.103*	*0.108*
Political Constraints	0.106	0.118	0.254	0.252	-0.486	-0.472	1.131	1.146	2.839	2.853
	0.816	*0.793*	*0.560*	*0.561*	*0.506*	*0.504*	*0.056*	*0.054*	*0.000*	*0.000*
Budget Balance (as a ratio of GDP)	0.022	0.022	0.024	0.024	0.014	0.014	0.073	0.074	0.296	0.297
	0.284	*0.288*	*0.274*	*0.279*	*0.677*	*0.691*	*0.038*	*0.040*	*0.001*	*0.000*
Log of Population	0.044	0.426	0.016	0.016	0.114	0.109	0.269	0.267	0.805	0.810
	0.640	*0.656*	*0.851*	*0.860*	*0.463*	*0.480*	*0.020*	*0.022*	*0.003*	*0.003*
Log of Real Per Capita Income	0.120	0.123	0.296	0.299	-0.410	-0.417	0.380	0.376	-0.417	-0.422
	0.603	*0.598*	*0.201*	*0.200*	*0.311*	*0.295*	*0.285*	*0.289*	*0.510*	*0.509*
Predicted Probability of Increasing	-1.036	-0.888	-0.506	-0.461	-2.969	-2.647	2.883	2.986	-1.728	-1.682
Multilateral Exposure, From (1), Table 4	*0.351*	*0.428*	*0.586*	*0.619*	*0.201*	*0.262*	*0.066*	*0.053*	*0.575*	*0.583*
Constant	-6.542	-6.449	-8.123	-8.066	-3.776	-3.193	-25.073	-24.655	-39.886	-40.508
	0.015	*0.015*	*0.004*	*0.004*	*0.490*	*0.530*	*0.000*	*0.000*	*0.009*	*0.007*
Time Varying Coefficient Estimates										
Constant	0.626	0.600	0.653	0.635	1.669	1.691	1.492	1.484	2.064	2.078
	0.059	*0.059*	*0.055*	*0.061*	*0.009*	*0.000*	*0.000*	*0.049*	*0.000*	*0.000*
Ratio of Multilateral Lending to GDP		0.506		0.456		0.160		0.211		-0.318
(H1a > 0; H1b > 0)		*0.004*		*0.006*		*0.629*		*0.552*		*0.747*
N	2364	2364	1182	1182	1182	1182	1773	1773	1182	1182
Pseudo Log-Likelihood	407.16	411.27	375.22	376.00	46.90	49.13	35.80	36.24	70.41	70.52

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed
Dependent Variables
(1)-(2) Measures of deregulation (Objective measures and subjective measures described below)
(3)-(4) Objective measures of deregulation (Regulator independent of Ministry and Regulator independent of incumbent)
(5)-(6) Subjective measures of deregulation (Regulator semiautonomous and Regulator autonomous)
(7)-(8) Measures of privatization (minority privatization, majority privatization and full privatization)
(9)-(10) Measures of competition (competition in long distance and local telephony)

Table 9: Robustness of Results to Disaggregation of Dependent Variable, Telecommunications by Individual Reform

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Ratio of Multilateral Lending to GDP	4.220	1.866	2.485	-0.380	-3.880	-16.428	2.160	-1.893	0.687	-8.166	17.356	124.000	11.873	12.135	-2.468	0.999	-22.088	39.659
(H1a > 0)	*0.015*	*0.361*	*0.041*	*0.863*	*0.088*	*0.045*	*0.415*	*0.691*	*0.869*	*0.354*	*0.131*	*0.262*	*0.000*	*0.000*	*0.755*	*0.925*	*0.074*	*0.005*
Trade Weighted Reform by Other Countries	1.083	1.084	0.989	0.986	0.458	0.512	2.000	1.995	2.585	2.491	-11.195	-13.371	1.305	1.300	3.158	3.085	-1.144	-1.209
(H2 > 0)	*0.032*	*0.031*	*0.029*	*0.027*	*0.580*	*0.535*	*0.111*	*0.108*	*0.043*	*0.055*	*0.582*	*0.531*	*0.180*	*0.182*	*0.037*	*0.042*	*0.510*	*0.491*
Sectoral Performance Shortfall	0.386	0.380	0.655	0.659	-0.549	-0.570	0.253	0.236	-0.595	-0.553	1.909	2.423	1.531	1.545	1.010	1.055	0.142	0.140
	0.166	*0.173*	*0.000*	*0.000*	*0.197*	*0.180*	*0.495*	*0.530*	*0.432*	*0.446*	*0.429*	*0.369*	*0.002*	*0.002*	*0.253*	*0.237*	*0.874*	*0.878*
Value Added by Industry	-0.001	-0.001	-0.004	-0.004	-0.149	-0.147	-0.023	-0.023	0.080	0.079	0.201	0.253	0.000	0.000	-0.046	-0.045	0.055	0.058
	0.951	*0.957*	*0.711*	*0.718*	*0.000*	*0.000*	*0.498*	*0.505*	*0.000*	*0.000*	*0.291*	*0.319*	*0.991*	*0.990*	*0.166*	*0.168*	*0.236*	*0.215*
Urban population share	0.010	0.010	0.011	0.011	0.013	-0.012	0.022	0.022	0.047	0.047	0.080	0.103	0.026	0.026	-0.010	-0.011	0.042	0.046
	0.431	*0.435*	*0.269*	*0.285*	*0.524*	*0.561*	*0.106*	*0.104*	*0.099*	*0.095*	*0.213*	*0.280*	*0.179*	*0.181*	*0.411*	*0.403*	*0.031*	*0.014*
Ratio of Foreign Direct Investment to GDP	0.040	0.039	0.037	0.037	0.006	0.003	0.005	0.004	0.049	0.048	-0.057	-0.080	0.174	0.175	0.095	0.101	0.158	0.168
	0.315	*0.323*	*0.232*	*0.227*	*0.930*	*0.959*	*0.931*	*0.950*	*0.407*	*0.413*	*0.792*	*0.738*	*0.004*	*0.003*	*0.540*	*0.517*	*0.018*	*0.025*
Political Constraints	0.068	0.068	0.387	0.392	-0.733	-0.716	-0.468	-0.483	2.577	2.558	1.986	3.015	-0.509	-0.510	2.490	2.513	4.112	4.443
	0.891	*0.890*	*0.337*	*0.328*	*0.377*	*0.389*	*0.487*	*0.470*	*0.018*	*0.020*	*0.667*	*0.598*	*0.629*	*0.629*	*0.000*	*0.000*	*0.000*	*0.000*
Budget Balance (as a ratio of GDP)	0.018	0.018	0.029	0.029	0.043	0.042	0.007	0.006	0.030	0.030	0.661	0.728	0.108	0.109	0.284	0.290	0.291	0.301
	0.487	*0.494*	*0.167*	*0.172*	*0.395*	*0.402*	*0.849*	*0.859*	*0.457*	*0.464*	*0.013*	*0.022*	*0.253*	*0.253*	*0.002*	*0.002*	*0.008*	*0.006*
Log of Population	-0.032	-0.033	0.048	0.052	-0.012	-0.020	0.197	0.192	-0.015	-0.020	-1.461	-1.763	0.581	0.587	0.924	0.953	0.642	0.678
	0.776	*0.769*	*0.533*	*0.500*	*0.926*	*0.874*	*0.294*	*0.307*	*0.934*	*0.909*	*0.358*	*0.417*	*0.013*	*0.013*	*0.004*	*0.004*	*0.025*	*0.027*
Log of Real Per Capita Income	0.232	0.237	0.318	0.345	-0.303	-0.352	-0.375	-0.383	-1.070	-1.076	-1.399	-1.866	1.692	1.716	0.100	0.155	-1.838	-1.972
	0.430	*0.425*	*0.115*	*0.093*	*0.541*	*0.475*	*0.407*	*0.398*	*0.027*	*0.029*	*0.612*	*0.615*	*0.005*	*0.004*	*0.896*	*0.842*	*0.009*	*0.004*
Predicted Probability of Increasing	-1.533	-1.482	0.165	0.305	-2.331	-2.321	-3.408	-3.345	2.217	2.465	1.241	3.004	1.274	1.381	-5.633	-5.384	0.440	1.036
Multilateral Exposure, From (1), Table 4	*0.192*	*0.204*	*0.855*	*0.733*	*0.475*	*0.472*	*0.109*	*0.114*	*0.544*	*0.474*	*0.815*	*0.555*	*0.643*	*0.618*	*0.032*	*0.040*	*0.918*	*0.800*
Constant	-6.254	-6.151	-9.515	-9.717	-34.267	-32.022	-5.811	-5.469	-3.350	-3.021	-120.648	-154.030	-38.822	-39.326	-34.787	-36.500	-31.501	-35.126
	0.062	*0.064*	*0.001*	*0.001*	*0.010*	*0.013*	*0.304*	*0.329*	*0.562*	*0.605*	*0.244*	*0.177*	*0.000*	*0.000*	*0.012*	*0.010*	*0.069*	*0.054*
Time Varying Coefficient Estimates																		
Constant	0.627	0.605	0.899	0.728	2.622	2.603	0.907	0.679	0.648	0.262	3.462	4.054	1.428	1.398	1.895	1.846	2.204	2.348
	0.066	*0.071*	*0.000*	*0.027*	*0.000*	*0.000*	*0.000*	*0.271*	*0.000*	*0.703*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Ratio of Multilateral Lending to GDP		0.374		0.413		0.286		0.568		1.494		-0.649		-0.012		-0.159		-2.323
(H1a > 0; H1b > 0)		*0.007*		*0.054*		*0.087*		*0.060*		*0.136*		*0.000*		*0.931*		*0.648*		*0.000*
N	591	591	591	591	591	591	591	591	591	591	591	591	591	591	591	591	591	591
Pseudo Log-Likelihood	133.89	134.18	243.46	243.73	42.48	42.65	16.98	17.24	2.21	2.50	8.73	9.14	60.08	60.09	45.37	45.39	37.96	38.98

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed
Dependent Variables:
(1)-(2) Regulator Independent from Ministry
(3)-(4) Regulator Independent from Incumbent
(5)-(6) Regulator Semi-Autonomous
(7)-(8) Regulator Autonomous
(9)-(10) Minority Privatization
(11)-(12) Majority Privatization
(13)-(14) Complete Privatization
(15)-(16) Competition Allowed in Long Distance Telephony
(17)-(18) Competition Allowed in Local Telephony

Table 10: Robustness of Results to Disaggregation of Dependent Variable, Electricity by Type of Reform

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ratio of Multilateral Lending to GDP	4.241	2.823	4.198	2.579	4.297	3.137	7.087	11.611	-0.829	-5.322
(H1a > 0)	*0.018*	*0.425*	*0.016*	*0.567*	*0.029*	*0.304*	*0.234*	*0.001*	*0.087*	*0.000*
Trade Weighted Reform by Other Countries	0.236	0.239	-0.004	0.003	0.544	0.544	1.421	1.229	2.167	2.019
(H2 > 0)	*0.696*	*0.692*	*0.994*	*0.996*	*0.468*	*0.468*	*0.403*	*0.390*	*0.032*	*0.037*
Sectoral Performance Shortfall	0.673	0.672	0.789	0.786	0.500	0.501	-0.183	-0.024	0.212	0.214
	0.069	*0.070*	*0.018*	*0.019*	*0.259*	*0.258*	*0.681*	*0.963*	*0.005*	*0.004*
Value Added by Industry	-0.016	-0.016	-0.011	-0.011	-0.025	-0.025	0.001	-0.003	0.010	0.010
	0.257	*0.258*	*0.397*	*0.400*	*0.178*	*0.179*	*0.983*	*0.929*	*0.046*	*0.059*
Urban population share	0.026	0.026	0.019	0.019	0.038	0.038	0.044	0.049	-0.006	-0.005
	0.212	*0.211*	*0.273*	*0.274*	*0.166*	*0.166*	*0.175*	*0.104*	*0.205*	*0.214*
Ratio of Foreign Direct Investment to GDP	0.059	0.059	0.062	0.618	0.056	0.056	0.131	0.139	0.008	0.007
	0.055	*0.056*	*0.031*	*0.031*	*0.118*	*0.120*	*0.031*	*0.015*	*0.694*	*0.737*
Political Constraints	0.310	0.309	0.352	0.352	0.254	0.252	0.137	-0.015	0.075	0.070
	0.510	*0.511*	*0.443*	*0.442*	*0.614*	*0.617*	*0.875*	*0.986*	*0.592*	*0.612*
Budget Balance (as a ratio of GDP)	0.040	0.040	0.032	0.032	0.052	0.052	0.175	0.170	-0.001	-0.001
	0.193	*0.195*	*0.244*	*0.247*	*0.163*	*0.165*	*0.015*	*0.016*	*0.916*	*0.792*
Log of Population	0.210	0.209	0.171	0.171	0.270	0.270	-0.015	-0.003	0.107	0.106
	0.047	*0.049*	*0.079*	*0.081*	*0.037*	*0.038*	*0.942*	*0.989*	*0.002*	*0.002*
Log of Real Per Capita Income	-0.100	-0.100	0.008	0.009	-0.287	-0.284	0.355	0.250	0.177	0.177
	0.732	*0.732*	*0.975*	*0.975*	*0.424*	*0.426*	*0.539*	*0.675*	*0.088*	*0.086*
Predicted Probability of Increasing	-1.584	-1.572	-1.832	-1.816	-1.319	-1.304	-2.080	-1.675	0.634	0.756
Multilateral Exposure, From (1), Table 4	*0.330*	*0.327*	*0.260*	*0.260*	*0.438*	*0.436*	*0.534*	*0.580*	*0.117*	*0.057*
Constant	-13.936	-13.839	-14.133	-14.026	-10.325	-10.299	-12.529	-12.804	-7.460	-7.172
	0.017	*0.019*	*0.017*	*0.022*	*0.047*	*0.050*	*0.056*	*0.085*	*0.000*	*0.000*
Time Varying Coefficient Estimates										
Constant	1.119	1.108	1.134	1.122	1.103	1.100	1.577	1.545	0.176	0.154
	0.006	*0.009*	*0.006*	*0.010*	*0.030*	*0.033*	*0.000*	*0.000*	*0.000*	*0.000*
Ratio of Multilateral Lending to GDP		0.152		0.180		0.054		-0.320		0.424
(H1a > 0; H1b > 0)		*0.664*		*0.676*		*0.871*		*0.619*		*0.056*
N	2536	2536	1268	1268	1268	1268	1902	1902	1268	1268
Pseudo Log-Likelihood	340.10	340.25	239.17	239.24	104.92	104.96	-12.35	-4.78	1083.93	1090.84

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed
Dependent Variables
(1)-(2) Measures of deregulation (Objective measures and subjective measures described below)
(3)-(4) Objective measures of deregulation (Regulator independent of Ministry and Regulator independent of incumbent)
(5)-(6) Subjective measures of deregulation (Regulator semiautonomous and Regulator autonomous)
(7)-(8) Measures of privatization (minority privatization, majority privatization and full privatization)
(9)-(10) Measures of competition (competition in the form of autoproduction or private generation for resale)

Table 11: Robustness of Results to Disaggregation of Dependent Variable, Electricity by Individual Reform

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Ratio of Multilateral Lending to GDP	4.574	2.690	3.890	2.593	4.576	2.679	4.043	4.038	-44.510	-36.200	13.264	21.920	13.178	34.582	-0.540	-3.386	-0.762	-8.119
(H1a > 0)	*0.010*	*0.493*	*0.029*	*0.627*	*0.010*	*0.495*	*0.194*	*0.247*	*0.006*	*0.055*	*0.037*	*0.006*	*0.002*	*0.022*	*0.174*	*0.108*	*0.601*	*0.005*
Trade Weighted Reform by Other Countries	0.173	0.181	-0.195	-0.191	0.193	0.201	1.194	1.194	-1.310	-1.312	-5.762	-5.727	-5.020	-5.294	2.833	2.832	1.415	1.437
(H2 > 0)	*0.783*	*0.773*	*0.735*	*0.740*	*0.758*	*0.748*	*0.428*	*0.428*	*0.509*	*0.508*	*0.216*	*0.212*	*0.158*	*0.187*	*0.009*	*0.010*	*0.167*	*0.166*
Sectoral Performance Shortfall	0.872	0.870	0.731	0.729	0.870	0.868	-0.289	-0.289	-0.160	-0.158	1.329	1.312	-4.161	-4.089	0.015	0.015	0.779	0.769
	0.025	*0.026*	*0.016*	*0.018*	*0.026*	*0.027*	*0.623*	*0.623*	*0.829*	*0.831*	*0.099*	*0.101*	*0.054*	*0.051*	*0.749*	*0.755*	*0.000*	*0.000*
Value Added by Industry	-0.021	-0.021	-0.004	-0.004	-0.021	-0.021	-0.035	-0.035	0.120	0.120	-0.248	-0.252	0.057	0.061	0.001	0.000	0.031	0.030
	0.135	*0.137*	*0.801*	*0.801*	*0.138*	*0.141*	*0.350*	*0.349*	*0.001*	*0.001*	*0.000*	*0.000*	*0.137*	*0.151*	*0.834*	*0.941*	*0.005*	*0.006*
Urban population share	0.023	0.023	0.016	0.016	0.023	0.023	0.083	0.083	0.022	0.022	0.169	0.172	0.393	0.391	-0.008	-0.008	-0.005	-0.005
	0.280	*0.280*	*0.352*	*0.353*	*0.280*	*0.280*	*0.105*	*0.105*	*0.562*	*0.562*	*0.001*	*0.000*	*0.061*	*0.061*	*0.036*	*0.032*	*0.507*	*0.522*
Ratio of Foreign Direct Investment to GDP	0.059	0.059	0.064	0.064	0.059	0.058	0.054	0.054	0.046	0.046	0.277	0.279	0.047	0.040	-0.007	-0.008	0.044	0.042
	0.118	*0.119*	*0.011*	*0.010*	*0.119*	*0.121*	*0.216*	*0.216*	*0.709*	*0.708*	*0.000*	*0.000*	*0.566*	*0.642*	*0.701*	*0.674*	*0.086*	*0.106*
Political Constraints	0.298	0.298	0.403	0.405	0.297	0.297	0.198	0.198	2.267	2.256	-1.488	-1.573	-1.351	-1.213	-0.024	-0.028	0.260	0.009
	0.545	*0.545*	*0.377*	*0.374*	*0.313*	*0.548*	*0.764*	*0.764*	*0.019*	*0.020*	*0.362*	*0.332*	*0.003*	*0.038*	*0.789*	*0.761*	*0.413*	*0.539*
Budget Balance (as a ratio of GDP)	0.031	0.031	0.033	0.033	0.031	0.031	0.088	0.088	0.047	0.047	0.017	0.172	0.403	0.401	-0.002	-0.003	0.010	0.217
	0.313	*0.317*	*0.194*	*0.195*	*0.313*	*0.317*	*0.089*	*0.089*	*0.533*	*0.533*	*0.053*	*0.065*	*0.005*	*0.006*	*0.552*	*0.435*	*0.504*	*0.000*
Log of Population	0.212	0.211	0.137	0.136	0.211	0.211	0.455	0.456	-0.543	-0.545	0.375	0.380	1.596	1.602	0.071	0.072	0.217	0.431
	0.044	*0.045*	*0.160*	*0.161*	*0.044*	*0.045*	*0.139*	*0.139*	*0.159*	*0.157*	*0.185*	*0.172*	*0.147*	*0.152*	*0.028*	*0.026*	*0.001*	*0.041*
Log of Real Per Capita Income	0.012	0.013	0.003	0.003	0.012	0.013	-1.143	-1.143	-1.324	-1.326	-0.316	-0.360	-4.274	-4.345	0.149	0.155	0.437	0.253
	0.971	*0.968*	*0.992*	*0.992*	*0.969*	*0.967*	*0.091*	*0.092*	*0.240*	*0.239*	*0.726*	*0.682*	*0.085*	*0.088*	*0.055*	*0.046*	*0.041*	*0.420*
Predicted Probability of Increasing	-2.031	-2.001	-1.682	-1.670	-2.025	-2.004	-0.709	-0.710	2.955	2.945	-7.704	-7.812	-4.595	-4.713	0.436	0.480	1.016	1.188
Multilateral Exposure, From (1), Table 4	*0.258*	*0.259*	*0.271*	*0.271*	*0.260*	*0.261*	*0.738*	*0.738*	*0.599*	*0.600*	*0.211*	*0.206*	*0.011*	*0.002*	*0.239*	*0.209*	*0.152*	*0.079*
Constant	-14.634	-14.493	-14.641	-14.533	-14.620	-14.478	-7.213	-7.213	-10.113	-10.261	-15.213	-15.739	-23.821	-25.288	-5.515	-5.440	-12.966	-12.721
	0.017	*0.021*	*0.014*	*0.020*	*0.018*	*0.021*	*0.241*	*0.241*	*0.539*	*0.539*	*0.161*	*0.124*	*0.120*	*0.123*	*0.001*	*0.001*	*0.000*	*0.000*
Time Varying Coefficient Estimates																		
Constant	1.096	1.801	1.267	1.257	1.095	1.079	0.488	0.487	2.018	2.026	0.434	0.589	1.417	1.555	0.169	0.137	0.221	0.176
	0.009	*0.013*	*0.001*	*0.003*	*0.009*	*0.013*	*0.346*	*0.342*	*0.000*	*0.000*	*0.771*	*0.681*	*0.001*	*0.001*	*0.000*	*0.000*	*0.064*	*0.120*
Ratio of Multilateral Lending to GDP		0.195		0.115		0.197		0.001		-0.364		-1.711		-1.677		0.667		1.479
(H1a > 0; H1b > 0)		*0.610*		*0.800*		*0.608*		*0.997*		*0.639*		*0.071*		*0.017*		*0.113*		*0.000*
N	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634
Pseudo Log-Likelihood	103.64	103.68	137.03	137.05	103.66	103.69	10.37	10.37	12.41	12.41	18.73	18.82	9.95	10.09	756.35	756.63	354.89	357.09

* p-values are reported in italics underneath coefficient estimates.
** Strata specific constants and time paramaters are suppressed
Dependent Variables:
(1)-(2) Regulator Independent from Ministry
(3)-(4) Regulator Independent from Incumbent
(5)-(6) Regulator Semi-Autonomous
(7)-(8) Regulator Autonomous
(9)-(10) Minority Privatization
(11)-(12) Majority Privatization
(13)-(14) Complete Privatization
(15)-(16) Competition Allowed in Autoproduction
(17)-(18) Competition Allowed in Private Generation

Appendix Table 1: Year of Telecommunications Reform

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ld	comp_l
Afghanistan									
Albania	1998	1998	1998	1998					
Algeria									
American Samoa	<=1960	<=1960	<=1960	<=1960			1996		
Andorra									
Angola	1999	1999	1999	1999					
Antigua and Barbuda									
Argentina	1990	1990	1990				1990		
Armenia		1998				1998			
Aruba									
Australia	1992	1992	1997	1997	1997			1991	1991
Austria	1997	1997	1997	1997	1998			1998	1998
Azerbaijan									1996
Bahamas, The	1993	1993	1999	1999					
Bahrain	1996	1981				1981			
Bangladesh									1989
Barbados	<=1960	<=1960	1991	1991			<=1960		
Belarus									
Belgium	1993	1993	1993				1996	1998	1998
Belize	1988	1988				1996			
Benin									
Bermuda								1996	
Bhutan	1999	1999							
Bolivia	1995	1995	1995	1995			1995		
Bosnia and Herzegovina	1999	1999	1999	1999					
Botswana	1996	1996	1996	1996					
Brazil	1997	1997	1997	1997			1998	1999	1999
Brunei									
Bulgaria	1998	1998	1998						
Burkina Faso	1999	1999	1999						
Burundi	1997	1997	1997						
Cambodia									
Cameroon	1998	1998	1998	1998					
Canada	1976	1976	1976				1991	1992	1994
Cape Verde	1992	1992			1995				
Cayman Islands									
Central African Republic					1990				

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ld	comp_l
Chad									
Channel Islands									
Chile	1977	1977			1978		1989	1994	1994
China								1997	1994
Colombia	1994	1994	1994	1994				1998	1998
Comoros									
Congo, Dem. Rep.									
Congo, Rep.									
Costa Rica	1963	1963	1996	1996					
Cote d'Ivoire	1995	1995				1997			
Croatia									
Cuba					1995				
Cyprus									
Czech Republic	1994	1994			1994				1995
Denmark	1991	1991	1997	1997			1991	1996	1996
Djibouti	1998	1998							
Dominica		1967				1967			
Dominican Republic	1998	1990	1998	1998			1990	1990	1990
Ecuador	1995	1995	1995	1995					
Egypt, Arab Rep.	1998	1998							
El Salvador	1996	1996	1996	1996		1998		1996	1996
Equatorial Guinea		1987			1987				
Eritrea	1998	1998							
Estonia	1998	1993	1998	1998	1993	1998			
Ethiopia	1996	1996	1996	1996					
Faeroe Islands							1991	1996	1996
Fiji									
Finland	1988	1988	1988	1988	1998			1994	1994
France	1997	1997	1997	1997	1997			1998	1998
French Polynesia	1997	1997	1997	1997					
Gabon									
Gambia, The									
Georgia					1994			1994	1994
Germany	1998	1996	1998	1998	1996			1998	1998
Ghana	1996	1996	1996	1996	1997			1997	1997
Greece	1993	1993	1993	1993	1996				
Greenland							1991	1996	1996
Grenada		1998				1998			
Guam								1983	

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ld	comp_l
Guatemala	1996	1996	1996	1996			1998	1998	1998
Guinea		1995				1996			
Guinea-Bissau		1989				1989			
Guyana		1991			1991				
Haiti	1987	1987			1995				
Honduras	1996	1996	1996	1996					
Hong Kong, China	1993	1981	1993	1993			1981	1995	1995
Hungary	1990	1990					1993		
Iceland	1997	1997	1997	1997				1998	1998
India	1997	1997	1997	1997				1994	1994
Indonesia	1993	1993			1995				
Iran, Islamic Rep.									
Iraq									
Ireland	1997	1997	1997	1997			1999	1999	1999
Isle of Man	1984	1984					1987		
Israel		1990			1990				
Italy	1997	1997	1997	1997		1997		1998	1998
Jamaica	1995	1989					1989		
Japan					1985	1998		1985	1985
Jordan	1995	1995	1995	1995					
Kazakhstan		1994			1994				
Kenya	1999	1999	1999	1999				1999	1999
Kiribati	1996	1983			1983				
Korea, Dem. Rep.									
Korea, Rep.		1993					1993	1996	1999
Kuwait									
Kyrgyz Republic	1997	1997	1997	1997					
Lao PDR		1998			1998				
Latvia		1992			1993				
Lebanon									
Lesotho									
Liberia									
Libya									
Liechtenstein	1999	1999							
Lithuania		1998				1998			
Luxembourg	1997	1997	1997	1997				1998	1998
Macao, China									
Macedonia, FYR									
Madagascar	1997	1995			1995				

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ld	comp_l
Malawi	1998	1998	1998	1998					
Malaysia	1998	1990			1990			1996	1996
Maldives		1988			1988				
Mali									
Malta	1997	1997	1997	1997	1998				
Marshall Islands	1987	1990			1990				
Mauritania	1999	1999	1999	1999					
Mauritius	1988	1988	1998	1998					
Mayotte									
Mexico	1996	1990					1990	1997	
Micronesia, Fed. Sts.									
Moldova									
Monaco		1997				1999			
Mongolia	1995	1995			1995				
Morocco	1997	1997	1997						
Mozambique	1992	1992	1992						
Myanmar									
Namibia	1992	1992	1999	1999					
Nepal	1997	1997	1997	1997					
Netherlands	1997	1989	1997	1997	1994	1995		1997	1997
Netherlands Antilles	1992	1992							
New Caledonia									
New Zealand		1990					1990	1991	1996
Nicaragua	1995	1995	1995				<=1960		
Niger									
Nigeria	1992	1992	1992	1992	1993	1999			
Northern Mariana Islands									
Norway	1987	1987	1998	1998				1998	1998
Oman									
Pakistan	1996	1994	1996	1996	1994				
Palau									
Panama	1996	1996	1996	1996		1997			
Papua New Guinea	1997	1997							
Paraguay	1995	1995							
Peru	1993	1993	1993	1993			1994	1999	
Philippines	1979	1979	1979				1990	1995	1995
Poland	1990	1990			1998				1998
Portugal	1991	1991	1991	1991	1995	1997			
Puerto Rico	1996	1996				1998	<=1960	1989	1996

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ld	comp_l
Qatar		1998			1998				
Romania		1997			1997				
Russian Federation		1997			1997				
Rwanda		1996			1996				
Samoa									
San Marino		1997				1997			
Sao Tome and Principe		1997				1997			
Saudi Arabia		1998							
Senegal	1997	1997				1997			
Seychelles							<=1960		
Sierra Leone									
Singapore	1992	1992	1992	1992	1993				1999
Slovak Republic	1993	1993							
Slovenia	1997	1996			1996				
Solomon Islands		1988			1988				
Somalia		1995					1995	1995	1995
South Africa	1997	1997	1997	1997	1997				
Spain	1987	1987	1997	1997	1987		1997	1998	1998
Sri Lanka	1991	1991			1997				
St. Kitts and Nevis	1985				1985	1990			
St. Lucia		1965			1965		1998		
St. Vincent and the Grenadines		<=1960					<=1960		
Sudan	1996	1994			1994				
Suriname		1980						1999	1999
Swaziland									
Sweden	1992	1992	1992	1992	1993			1993	1993
Switzerland	1992	1992	1992	1992	1998			1998	1998
Syrian Arab Republic		1985							
Tajikistan		1995			1995				
Tanzania	1994	1993	1994	1994	1995				
Thailand								1990	
Togo	1999	1999							
Tonga									
Trinidad and Tobago	1991	1991			1995				
Tunisia	1995	1995							
Turkey		1994							
Turkmenistan									
Uganda	1997	1997	1997	1997		1998		1998	1998
Ukraine									

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ld	comp_l
United Arab Emirates		1999			1999				
United Kingdom	1984	1984	1984	1984			1984	1982	1991
United States	<=1960	<=1960	<=1960	<=1960			<=1960	1980	1992
Uruguay	1984	1984							
Uzbekistan	1997	1997							
Vanuatu	1989	1989				1996			
Venezuela, RB	1991	1991	1991		1991	1997			
Vietnam		1997							
Yemen, Rep.									
Yugoslavia, FR (Serbia/Montenegro)		1999			1999				
Zambia	1994	1994	1994	1994					
Zimbabwe									

Key: ind_min = Regulator independent from ministry
ind_inc = Regulator independent from incumbent
ind_sa = Regulator semiautonomous from political influence
ind_a = Regulator autonomous from political influence
priv_min = Minority of formerly state-owned enterprise privatized
priv_maj = Majority of formerly state-owned enterprise privatized
priv_full = All of formerly state-owned enterprise privatized
comp_ld = Competition exists in long distance service
comp_l = Competition exists in local service

Appendix Table 2: Year of Electricity Generation Reform

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ap	comp_pu
Afghanistan									
Albania	1995	1995	1995	1995					
Algeria								<=1960	
American Samoa									
Andorra									
Angola								<=1960	<=1960
Antigua and Barbuda								1975	
Argentina	1991	1991	1991			1993		<=1960	<=1960
Armenia									
Aruba									
Australia	1996	1996	1996	1996	1996			<=1960	<=1960
Austria								<=1960	<=1960
Azerbaijan		1996							
Bahamas, The									
Bahrain								<=1960	
Bangladesh								1966	1998
Barbados	<=1960	<=1960	<=1960			1991		1982	1991
Belarus									
Belgium		<=1960	1999	1999			<=1960	<=1960	<=1960
Belize		1992				1992			1992
Benin								1983	
Bermuda							<=1960		<=1960
Bhutan									
Bolivia	1994	1994	1994	1994		1996		<=1960	<=1960
Bosnia and Herzegovina								<=1960	
Botswana								1993	
Brazil	1995	1995	1995	1995				<=1960	<=1960
Brunei								<=1960	
Bulgaria								1989	
Burkina Faso									
Burundi								<=1960	
Cambodia								1996	1996
Cameroon								<=1960	
Canada	1961	1961	1961					<=1960	<=1960
Cape Verde									

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ap	comp_pu
Cayman Islands									
Central African Republic								<=1960	
Chad									
Chile	1978	1978	1978	1978		1986	1988	<=1960	<=1960
China								<=1960	1987
Colombia	1994	1994	1994		1997			<=1960	1992
Comoros									
Congo, Dem. Rep.								<=1960	
Congo, Rep.								1974	
Costa Rica	1996	1996	1996	1996				<=1960	1993
Cote d'Ivoire		1997				1997		1977	1997
Croatia								<=1960	
Cuba								<=1960	
Cyprus								1978	
Czech Republic		1992			1992			<=1960	1995
Denmark		1999	1999		<=1960			<=1960	<=1960
Djibouti								<=1960	
Dominica		1997				1997			1997
Dominican Republic	1999	1999	1999			1999		<=1960	<=1960
Ecuador	1997	1997	1997	1997				<=1960	<=1960
Egypt, Arab Rep.								<=1960	
El Salvador	1997	1997	1997					<=1960	1995
Equatorial Guinea									1998
Eritrea									
Estonia	1997	1997	1997			1999		1997	1999
Ethiopia								1966	
Faeroe Islands									
Fiji								<=1960	
Finland	1995	1995	1995					<=1960	1998
France								<=1960	<=1960
Gabon		1997					1997	1995	1997
Gambia, The									
Georgia	1997	1997	1997		1997				1995
Germany					<=1960			<=1960	<=1960
Ghana	1997	1997	1997	1997				1977	1997
Greece								<=1960	
Greenland									
Grenada		1992				1992			1992

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ap	comp_pu
Guam									
Guatemala	1996	1996	1996					<=1960	<=1960
Guinea								1973	
Guinea-Bissau									
Guyana		1998						1969	1998
Haiti								1973	
Honduras	1991	1991	1991					<=1960	1994
Hong Kong, China							<=1960		<=1960
Hungary	1994	1994	1994					<=1960	<=1960
Iceland								<=1960	
India	1998	1998	1998					<=1960	<=1960
Indonesia								<=1960	<=1960
Iran, Islamic Rep.								<=1960	
Iraq								1978	
Ireland	1999	1999	1999					<=1960	1993
Israel	1996	1996	1996	1996				<=1960	<=1960
Italy	1996	1996	1996	1996	1999			<=1960	<=1960
Jamaica	1997	1997	1997					<=1960	1994
Japan							<=1960	<=1960	<=1960
Jordan		1999						<=1960	
Kazakhstan		1996			1996	1997	1999		<=1960
Kenya	1998	1998	1998					<=1960	1997
Kiribati									
Korea, Dem. Rep.									
Korea, Rep.								1966	1991
Kuwait								<=1960	
Kyrgyz Republic	1996	1996	1996						
Lao PDR									1998
Latvia	1998	1998	1998					<=1960	<=1960
Lebanon								1975	
Lesotho									
Liberia								1967	
Libya								1963	1979
Liechtenstein									
Lithuania	1998	1995	1998		1995				1995
Luxembourg						<=1960		<=1960	<=1960
Macao, China								1978	
Macedonia, FYR								1963	
Madagascar		1998						1975	

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ap	comp_pu
Malawi								1970	
Malaysia					1992			<=1960	<=1960
Maldives									
Mali								1982	
Malta								<=1960	
Marshall Islands								1994	
Mauritania								1978	
Mauritius								1970	
Mayotte									
Mexico	1995	1995	1995	1995				<=1960	<=1960
Micronesia, Fed. Sts.									
Moldova	1997	1997	1997						
Mongolia									
Morocco								1972	1994
Mozambique								<=1960	
Myanmar								<=1960	
Namibia								1976	
Nepal	1992	1992	1992					1973	1996
Netherlands	1998	1998	1998			1999		<=1960	<=1960
New Caledonia								1968	
New Zealand	1986	1986	1986	1986	1999			<=1960	1998
Nicaragua	1998	1994	1998						1995
Niger								1970	
Nigeria								<=1960	1994
Norway	1991	1991	1991					<=1960	<=1960
Oman								1967	<=1960
Pakistan	1997	1997	1997	1997				<=1960	<=1960
Panama	1997	1997	1997			1998		<=1960	<=1960
Papua New Guinea								<=1960	
Paraguay								1962	
Peru	1992	1992	1992	1992	1995	1996		<=1960	<=1960
Philippines	1987	1987	1987	1987				<=1960	<=1960
Poland	1997	1997	1997					<=1960	1997
Portugal	1998	1997	1998		1997	1999		<=1960	<=1960
Puerto Rico								<=1960	
Qatar								<=1960	
Romania								<=1960	1998
Russian Federation					1992			<=1960	1992

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ap	comp_pu
Rwanda								<=1960	
Samoa									
Sao Tome and Principe									
Saudi Arabia								<=1960	
Senegal		1999				1999		1983	1999
Seychelles									
Sierra Leone								1994	
Singapore	1995	1995	1995	1995				<=1960	
Slovak Republic									
Slovenia								<=1960	
Solomon Islands								1975	
Somalia								1978	
South Africa	1987	1987	1987					<=1960	
Spain	1998	1988	1998		1988		1998	<=1960	<=1960
Sri Lanka								1977	1997
St. Kitts and Nevis									
St. Lucia									
St. Vincent and the Grenadines									
Sudan								1974	
Suriname		<=1960					<=1960	<=1960	<=1960
Swaziland								<=1960	
Sweden	1996	1996	1996					<=1960	1966
Switzerland								<=1960	<=1960
Syrian Arab Republic								<=1960	
Tajikistan									
Tanzania								<=1960	
Thailand		1995						<=1960	1995
Togo								1987	
Tonga									
Trinidad and Tobago	1998	1994	1998		1994			<=1960	1994
Tunisia								1963	1994
Turkey								<=1960	1997
Turkmenistan									
Uganda								1982	
Ukraine	1994	1994	1994					1980	1997

Country Name	ind_min	ind_inc	ind_sa	ind_a	priv_min	priv_maj	priv_full	comp_ap	comp_pu
United Arab Emirates	1998	1998	1998					<=1960	
United Kingdom	1990	1990	1990	1990		1991	1996	<=1960	<=1960
United States	<=1960	<=1960	<=1960	<=1960			<=1960	<=1960	<=1960
Uruguay									
Uzbekistan									
Venezuela, RB	1992	1992	1992					<=1960	<=1960
Vietnam								1963	1996
Yemen, Rep.								<=1960	1995
Yugoslavia, FR (Serbia/Montenegro)								<=1960	
Zambia	1997	1997	1997					1967	
Zimbabwe								<=1960	1996

Key: ind_min = Regulator independent from ministry
ind_inc = Regulator independent from incumbent
ind_sa = Regulator semiautonomous from political influence
ind_a = Regulator autonomous from political influence
priv_min = Minority of formerly state-owned enterprise privatized
priv_maj = Majority of formerly state-owned enterprise privatized
priv_full = All of formerly state-owned enterprise privatized
comp_ap = Private firms may generate electricity for their own consumption
comp_pu = Private firms may generate electricity for resale

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