Global Regulatory Reform in Telecommunications – the Importance of International Organizations

Kirsten Rodine Hardy, PhD
Assistant Professor
Department of Political Science
Northeastern University
k.rodinehardy@neu.edu

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Kirsten Rodine Hardy
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ABSTRACT:
This paper asks when and why countries over 129 countries chose to establish new independent telecom regulators and over 109 countries privatized incumbent telecom operators during the 1990s. Using a Weibull multivariate hazard model, this paper analyzes the timing of establishing a separate regulator and privatizing the telecom incumbent in 184 countries from 1975-2004. While much of the conventional wisdom emphasizes the importance of international markets or domestic determinants of telecom reform, I find that international political factors, particularly membership in some international organizations (the WTO and the OECD) are more important than international market factors in the timing of liberal telecom reform. Further, while international policy diffusion seems to be at work, it occurs in a different, more directed way than indicated in the diffusion literature. The paper provides suggestions of further focus on actors and mechanisms.

1. Introduction and Puzzle:

In recent years, liberalization, privatization, and deregulation have become common-place in sectors once dominated by government-owned monopolies. In telecommunications, over 129 countries established separate regulatory authorities during the 1990s and over 100 countries privatized the telecom incumbent. Why did so many countries enact such similar market-oriented reforms in such a short period of time?

Conventional wisdom cannot explain the shape, timing, and extent of this broad reform. For example, conventional political economy explanations of telecommunications policy reform focus primarily on domestic interest groups and state institutions, ignoring the importance of international organizations, international markets, and international policy diffusion (Levy and Spiller 1994; Noll and

Rosenbluth 1995; Thatcher 1999). International relations scholarship focuses in general more on international organizations and member states (Vreeland 2003; Checkel 2005; Finnemore 1993), international regimes (Cowhey 1990) or the enduring power of nation-states (Drezner 2007; Krasner 1991), and not as much on sources of global policy diffusion. Further, recent literature on global policy diffusion does not take into account the specific actors, mechanisms and channels of international organizations (Simmons et al. 2006; Levi-Faur and Jordana 2005).

These market-oriented reforms in telecommunications can be seen as a process of re-regulation, as governments introduce freer markets with more rules (Vogel 1996; Vogel 2006). Some scholars have argued that these reforms are indicative of an overall shift toward a regulatory state (Majone 1994, 1997), or even a new form of "regulatory capitalism" (Levi-Faur and Jordana 2005; Levi-Faur 2006). While speaking to these overall issues, this paper takes a narrower focus and analyzes market-oriented reforms in telecoms and show that the conventional wisdom cannot explain why so many countries liberalized their telecoms sectors in such a short period of time.

I argue that international organizations played a critical role in the spread of these reforms, yet not as traditionally conceived. I show that membership in key international organizations, especially the WTO and the OECD, is strongly associated with the timing of liberal reform in telecommunications, as opposed to the conventional wisdom of markets, domestic factors, and global policy diffusion. Yet, I

suggest that the mechanism is not one of coercion, but rather of information exchange and socialization.

This paper will next show the importance of this enormous shift from the old state-owned regime to the new liberal regime for telecommunications, characterized by independent telecom regulators and private telecom firms. The third part will show the conventional wisdom and how diffusion through international organizations is one important and understudied factor in the shift to the new regime. The fourth part of the paper will present the data, the multivariate hazard model and the hypotheses, as well as the results that show the importance of international organizations. The final part of the paper will discuss the relevance and importance of diffusion through international organizations, the limits to the argument, and avenues for further research.

2. Background:

Research puzzle: from the old to the new: separate regulators & private telecom operators

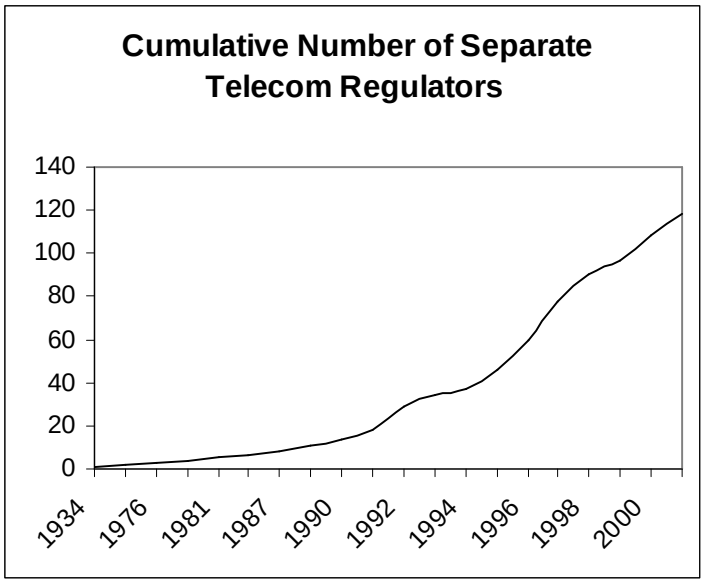
For much of the 20th century, telephony was viewed as a natural monopoly within national borders. In most of the world, the telecommunications system was governed by a government-owned or managed monopoly responsible for postal, telegraph and telephone services (PTT), which was operated by a ministry or regulatory agency and protected from competition in services and equipment. In the early 1980s most countries around the world had a state-owned monopoly telecommunications operator, and the government ministry responsible for communications usually performed the

regulatory duties. By 2002, over 129 countries created separate regulators for telecoms, and 106 countries at least partially privatized their monopoly incumbent telecommunications operators (ITU 2002b).

Governments around the world that have chosen to enact regulatory reform in telecommunications have explicitly stated a set of goals to increase accessibility, quality, and affordability of telecommunications services. The availability and affordability of modern, reliable, telecommunication services are critical for all sectors in the economy, especially in order to attract foreign investment, to compete in global markets, and to fulfill overall development objectives. Also, telecommunications has been proven to be correlated with economic growth and development, and has come to be understood as one of the fundamental building blocks of a modern economy (Röller and Waverman 2001).

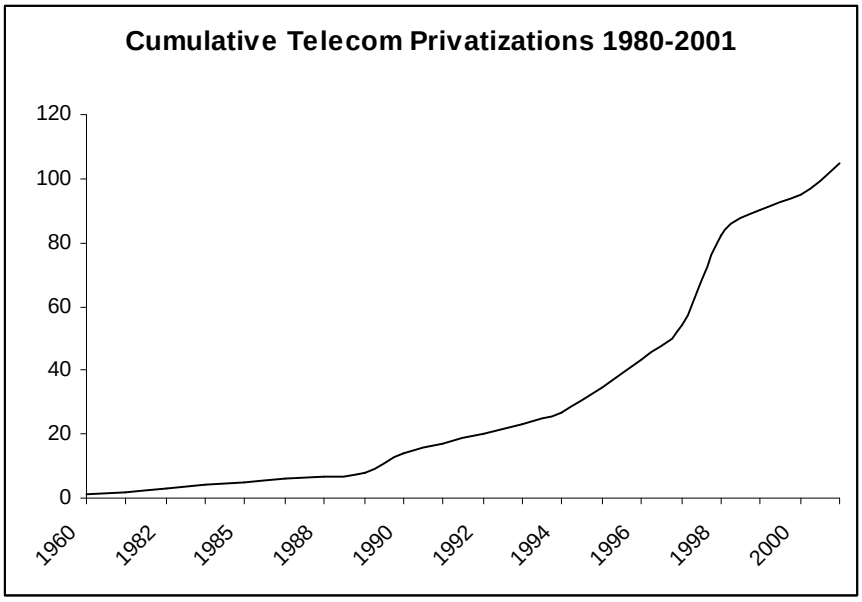
We can observe a strong trend toward the opening of telecommunications markets over the past two decades. By 2001 over 120 governments had established separate regulatory agencies for telecoms, and over 75 governments had introduced private sector participation into the main telecom firm [ITU 2003].

Figure 1. Cumulative number of separate telecom regulators



Over 70 countries introduced some degree of private-sector participation in the predominantly state-owned incumbent telecom operators during the 1990s. By the end of 2001, 107 incumbents had at least partial private sector ownership, while 83 remained fully state-owned (ITU 2002b). By region, over 74 percent of incumbents in the Americas were privatized, followed by 69 percent in Europe, 53 percent in Asia-Pacific, 40 percent in Africa, and 38 percent in Middle Eastern states (ITU 2002a).

Figure 2. Cumulative Telecom Privatizations 1980-2001



3. Expectations:

a. Conventional wisdom:

Why did so many countries establish these regulators and privatize their telecoms firms? The conventional wisdom emphasizes the role of international markets, big actors, domestic politics, and international policy diffusion. After discussing each of these factors, I will demonstrate that they fail to explain why and when countries enact these reforms. I then argue that the missing piece of the puzzle is the role of international organizations and how these organizations help states in their decision to liberalize telecoms. I argue that international organizations are key actors and forums for the diffusion of the new telecom regulatory regime. International organizations help create and shape preferences for reform and also provide forums for expert discussions and the emergence of policy standards within the new regime for telecom regulation. Furthermore, I show why some international organizations (the WTO and

the OECD) are more salient in the diffusion of telecoms reforms than others (the World Bank and IMF) and how some mechanisms (socialization and not just emulation and competition) seem more likely than others.

a. Conventional wisdom

1. International Markets

The degree of interdependence with the international economy affects a country's political economy. Having more open markets for trade and capital flows, for example, would increase the need for countries to open their flows of communications and to enact liberal telecom reform. This global market pressure would exert pressure on domestic decision makers to establish separate regulators and to privatize the telecom incumbent.

Countries that are more globalized, especially countries that are more open to trade and capital flows, will be more likely to liberalize than others. A more traditional hypothesis is that countries are more influenced by domestic economic forces, shown by income and the condition of the telecom sector.

The globalization hypothesis can be conceptualized as the degree of interconnectedness with the world economy, measured through the degree of international trade interdependence (the sum of exports and imports as a percentage of GDP) and the degree of capital market liberalization, using the IMF AREAR scale.

2. Domestic factors for reform

Most of the existing literature on telecommunication reform focuses on the domestic political and economic environment (Levy and Spiller 1994; Noam 1992, 1999; Noll and Rosenbluth 1995).[1] Traditional political economy analyses in general show how countries respond independently to external shocks in the global economy, and how policy change differs according to domestic political and economic configurations (Keohane and Milner 1996; Frieden and Rogowski 1996). Some of these scholars focus on the preferences and interests of domestic actors for liberalization of trade and finance (Frieden 1991; Rogowski 1989), the partisan orientation of governments (Garrett 1998) and their preferences for openness. Other scholars focus on path dependence and the stickiness of domestic institutions (Gourevitch 1986; Katzenstein 1985; Steinmo et al. 1992). Also, within telecommunications in particular, scholars have focused more on the domestic determinants of reform, as opposed to outside influences on regulatory reform (Petrazzini 1995). Yet, these analyses have difficulties explaining why so many countries with different political and economic configurations, partisan politics, and interest concentrations enacted similar, liberal reforms in telecoms.

One of the primary indicators of a country's telecommunications environment is the number of existing mainlines per capita. We might expect countries to vary according to this level of telecom development. Countries with more pervasive mainlines per

[1] For a textbook overview of telecommunication economics, please consult (Cave et al. 2002; Newbery 2000)

capita, a sign of a well-developed telecommunications infrastructure, might be more likely to liberalize sooner in order to reflect a degree of greater competition. Countries with less-developed infrastructures may also be more likely to liberalize sooner, to reflect their greater need to attract foreign direct investment and competition.

3. Diffusion

Another possible explanation of the spread of liberal reforms is international policy diffusion, or interdependent decision-making among countries, in which the policy choice of one country is conditioned on the prior actions of other countries. In recent years, a growing literature on "policy diffusion" has emerged to explain the adoption and spread of institutions and policies around the world (Simmons et al. 2006; Braun and Gilardi 2006; Brooks 2007; Weyland 2006). Many of these scholars use the term *diffusion* to refer to all processes in which "prior adoption of a trait or practice in a population alters the probability of adoption for remaining non-adopters."(Strang 1991).

This diffusion literature focuses on some of these broad trends toward liberalization around the world, including the possible diffusion of policy choices in the following areas: democracy (Brinks and Coppedge 2006; Gleditsch and Ward 2006), financial liberalization (Simmons and Elkins 2004), liberalization of the internet (Milner 2006), pension reforms (Brooks 2005; Weyland 2005), welfare state development (Jahn 2006), tax policy (Swank 2006), public utilities reforms (Levi-Faur 2004; Henisz et al. 2005), bilateral investment treaties (Elkins et al. 2006), independent central banks

(Polillo and Guillen 2005) and other institutional reforms. This new literature on diffusion builds upon previous work in the 1970s and other more recent work that focuses on the diffusion of innovation across American states, including institutional innovations (Walker 1969), education (Gray 1973; Mintrom 1997), organizations (Mohr 1969), lotteries (Berry and Berry 1990), and tax innovations (Berry and Berry 1992).

Some of these scholars of diffusion have focused on the spread of liberalization and independent regulatory authorities in Europe (Gilardi 2002; Thatcher 2002; Jordana et al. 2006; Gilardi 2005) and also in Latin America (Weyland 2006; Levi-Faur 2003; Jordana and Levi-Faur 2006; Levi-Faur and Jordana 2005). Yet, these scholars mostly focus on smaller groups of countries and not on the overall global shift in emphasis toward liberal, pro-competitive regulatory reform. Furthermore, many of the general depictions of diffusion do not include the specification of actors and pathways through which these policies transfer.

My project addresses this important gap in the diffusion literature as well as conventional political economy explanations, especially by identifying specific actors and mechanisms associated with policy innovation in the telecommunications sector.

The diffusion approach would argue that countries will be more likely to enact market oriented reform when other countries in key peer groups enact reform. Some key peer groups include how many other countries around the world already reformed, peers

within regional groupings (e.g. the European Union), peers within income groups (other rich countries), and peers within membership of particular international organization (e.g the WTO and the OECD).

b. The argument: Membership in International Organizations

I argue that international organizations are key actors and forums for the diffusion of the new telecom regulatory regime. International organizations help create and shape preferences for reform and also provide forums for expert discussions and the emergence of policy standards within the new regime for telecom regulation. Furthermore, I show why some international organizations (the WTO and the OECD) are more salient in the diffusion of telecoms reforms than others (the World Bank and IMF) and how some mechanisms (socialization and not just emulation and competition) seem more likely than others.

Much of the classic literature in international relations stresses the importance of international institutions in affecting states' domestic policies (Martin and Simmons 1998) as well as the international system (Jacobson 2000; Keohane 1984) and international regimes (Krasner 1983). Some of the posited mechanisms by which intenraitonal institutions have influence are coercion, socialization, and learning.

Within this group, some theorists have already discussed the concepts of socialization and coercion, particularly through international organizations (Ikenberry and Kupchan 1990), yet not within the context of widespread policy change. Other scholars argue

that international organizations, especially international financial institutions, have played a critical and coercive role in determining the course of economic development within transition and developing countries (Vreeland 2003; Stone 2002, 2004; Stiglitz 2002; Henisz et al. 2005). Some scholars take this analysis a step further, and show that international financial institutions and not domestic political arrangements are key drivers of the adoption and spread of liberal reforms, e.g. central bank independence (Polillo and Guillen 2005) and even health reform (Armada et al. 2001). Yet, others have shown that countries have retained considerable domestic autonomy in the face of international organizations and pressures for reform (Remmer 2003; Wibbels and Arce 2003; Dezalay and Garth 2002; Mosley 2003). Clearly, it is important to conduct even more tests of the hypothesis that international organizations exert coercive influence on domestic member states, which then drives reform.

Others have written extensively about the role of international organizations and the spread of institutions and norms (Barnett and Finnemore 1999, 2004), although some of these have written about international organizations more as "teachers of norms" (Finnemore 1993) rather than as environments in which actors interact.

Finally, other scholars focus more on the possible mechanism of socialization, arguing that international organizations create environments in which states change their interests (Bearce and Bondanella 2007; Checkel 2005; Johnston 2001).

In the context of this paper, I first show that membership in international organizations is associated with a higher probability of liberalizing the telecom sector. Thus proving this association between membership and liberal reform, while ruling out more conventional explanations for the timing of reform, it becomes possible to speculate about which mechanisms might be at work in the reform process. This paper relies on quantitative evidence from countries around the world, and it is difficult to ascertain specifics about the why and the how of the socialization process. Yet, the membership in key international organizations has not been studied in the literature on diffusion or the literature on regulatory reform, and thus this paper makes a contribution toward both of these areas.

Table 1.

Expectations:		**Predicted Timing of liberal reform**	**Actual Results:**
The Argument:			
Membership in IOs	→	Liberalize sooner	**YES**
WTO			
OECD			
Alternative Hypotheses:			
Global markets	→	Liberalize sooner	No effect
Free trade			
Open capital			
Domestic Performance			
Rich countries	→	Liberalize sooner	No effect
Poor performance	→	Liberalize sooner	No effect
Advanced performance			
Urban consumers	→	Liberalize sooner	No effect
FDI	→	?	No effect
International Diffusion	→	Liberalize after peers	No effect
Other rich countries		Liberalize sooner	No effect
Neighbors (region)		Liberalize sooner	No effect
Rest of world		Liberalize sooner	No effect

To summarize the hypotheses above, please refer to Table 1, which lists the expectations about the predicted timing of regulatory reform as well as a view of the actual results. I argue that membership in international organizations, particularly liberal trading organizations, increases the probability that countries will liberalize their telecom sectors. Alternative hypotheses include global markets, domestic performance, and international diffusion factors, which also could explain the pattern of diffusion that we observe. Yet, as a preliminary view of the results, membership in international organizations is a key explanation for the timing of establishing a separate regulator and privatizing the state-owned incumbent telecom operator.

4. Data and Methods –

a. Data

Data included in the analysis are presented in Table 4 on page 33. I use data from two primary sources to analyze both the timing of regulatory reform in telecommunications as measured by establishing separate regulators for telecoms and by launching a first effort to privatize the dominant telecom incumbent. First, the International Telecommunications Union (ITU) compiles telecommunications data for every country around the world (ITU 2003b). The ITU also conducts regulatory surveys every year, and starting in 1999, the surveys list which countries have a separate regulatory authority and the year it was established, as well as a whether and when a country has privatized its incumbent telecom firm (ITU 2003a). I also include data collected from the World Bank Development Indicators (World_Bank 2003).

The dataset covers 184 countries, from 1970-2003, yielding a panel dataset with 6324 observations. Table 2 provides a list of all countries in the dataset, and Table 3 provides a list of countries that established a separate regulator or privatized the incumbent, or both, including years for each event. I include summary statistics and descriptions of all variables in Table 4. All independent variables are lagged one period to address concerns of possible endogeneity.

b. Variable list[2]

Dependent Variable 1: timing of establishing a separate regulator

This variable measures whether or not a country has established a new regulator separate from the incumbent telecoms operator and the relevant government ministry, usually transport and communications. This indicator is drawn from the ITU regulatory survey, and is based on whether the respondent indicated that the regulator is independent in terms of finance and authority (ITU 2002a). Each country observation on the dependent variable is coded 0 for each year of the study until the year in which the separate regulator is established, in which case the country is coded 1 for that year.

Dependent Variable 2: first privatization effort

This variable measures whether or not a country has launched its first privatization effort of its state-owned telecom operator. This indicator is drawn from the ITU regulatory survey, and is based on whether the respondent indicated that the government had privatized its incumbent (ITU 2002a). Each country observation on

[2] For a more extensive discussion of the variable list, please consult Table 4.

the two dependent variables is coded 0 for each year of the study until the year in which the government established a separate regulator or privatized the telecom incumbent, in which case the country is coded 1 for that year. Countries that enacted reform in a given year drop out of the set in the following year, creating a progressively smaller "risk set."

International and Domestic Variables

International organizations are measured by membership in the GATT_WTO and membership in the OECD in a given year. While the European Union is modeled as an important factor in the overall project, in this global analysis it is too collinear with the region "western Europe" to distinguish separate effects.

International market factors are measured as a country's interconnectedness with the global economy through trade (a country's imports plus exports as a percentage of GDP) and capital openness (a country's ranking from 0-9 in terms of the openness of its capital account, based on IMF AREAR ratings). Sectoral performance is measured by the number of telephone mainlines per 1000 people(Henisz et al. 2004; Petrazzini 1995).

In order to test the possibility of global policy diffusion, I created six diffusion variables, which measure the global number of prior reforms (separate regulators or first privatization efforts), number of prior reforms within regions, within income

categories, within the WTO itself, and within the OECD.[3] Each diffusion variable was created in the same way, and "region" is one example. First, I sorted the countries according to region-year and created a measure of the proportion of separate regulators (or first privatization efforts) within these region-years, and then subtracted the observation itself to obtain a score per country per year within this peer group. Each variable was lagged by one period, and the expectation is that countries will be affected by the decisions of other countries within the peer group (region) in the prior time period. The first measure is the "count," and I also created a separate measure for the proportion within the peer group that had innovated in the prior year. Diffusion hypotheses posit that the greater the number or proportion of separate regulators or privatization efforts in a prior year within a country's peer group, the higher the probability is that a country will choose to enact a similar policy. The assumption behind these indicators is that policy makers face uncertainty and bounded rationality, and thus take into consideration the decisions of their peers when they search from a range of possible policy options (Meseguer 2005; Brooks 2005; Meseguer 2006).

Controls

A set of control variables capture country-specific effects. The natural log of population and per-capita-GDP account together for a country's size and level of

[3] Other studies also include some social and cultural variables (e.g. language, religion)(Simmons and Elkins 2004) There is no clear theoretical prediction of why these variables would influence the adoption of separate regulators or first privatization efforts, and inclusion in test diagnostics did not reveal a significant relationship. In the spirit of replication I created and included a variable for economic competition using the number of prior policy reforms within categories of Standard & Poor's Sovereign Bond ratings, with the logic that countries engage in competitive liberalization with those in the same risk categories, yet these did not emerge as significant in any of the analyses for the timing of telecom regulatory reform. This is perhaps due to sectoral characteristics of the telecom industry.

development. These controls are key indicators of a country's telecom market and level of development.

I included a set of regional dummy variables, using the World Bank classification of eight regions (East Asia-Pacific, Europe/Central Asia, Middle East/North Africa, South Asia, Western Europe, North America, Sub-Saharan Africa, and Latin America/ Caribbean). My analysis controls for the effect of time by including dichotomous time variables for each year (Singer and Willett 1993). Since time-dependence is explicit, other time-varying explanatory variables (e.g. prior number of adoptions) are not contaminated by a larger variable of maturation effects. I also included dummy variables for four time periods, marking the substantive time periods of interest. These variables are wave1 (1934-1987), wave2 (1988-1992), wave3 (1993-1997), and wave4 (1999-2003).

c. Model

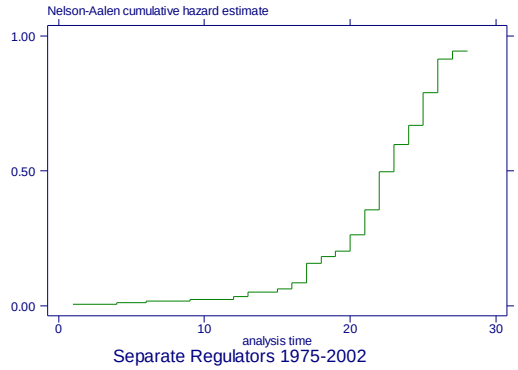
In order to analyze the timing of the adoption of separate regulators for telecoms, I employ event history analysis, which is designed to study the patterns and causes of event occurrences (Allison 1984; Yamaguchi 1991; Strang 1991; Box-Steffensmeier and Jones 2004).[4] Each country X is at risk of adopting reform in each time period t, until the time of adoption. The rate of transition from one state (the status quo) to another (policy adoption) is a function of covariates. The general form of a hazard models is

[4] For more technical discussions of event history analysis, survival analysis, and duration analysis, please consult (Hosmer and Lemeshow 1999); (Blossfeld and Rohwer 2002); and (Cleves et al. 2002)

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

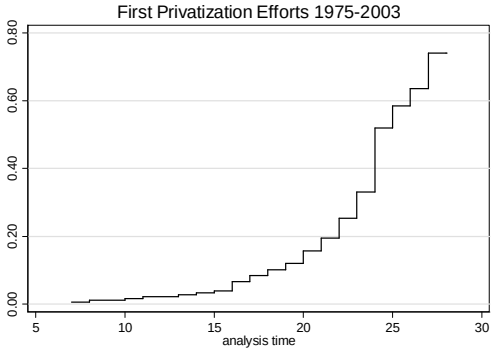
where h(t) is a hazard function for the policy reform to transition from non-adoption to adoption at time t, with observed covariate row vectors X_{jt} and parameters to be estimated ρ and β (Blossfeld and Rohwer 2002; Hosmer and Lemeshow 1999). A graphical depiction of the hazard estimate is depicted below with the Nelson-Aalen estimate, as well as a description of the Weibull model chosen for the multivariate analysis.

Figure 4. Nelson-Aalen cumulative hazard estimate for establishing separate regulators



As the graph shows, the hazard increases dramatically after 1995, which is "20" in analysis time. This means that the risk of establishing a separate regulator greatly increases over time. The vertical line marks where the dataset stops in 2001. I would expect the hazard to drop off over the next few years, as most countries in the world establish separate regulators.

Figure 5. Nelson-Aalen cumulative hazard estimates of First Privatization Efforts



The hazard for privatization also increases dramatically over time, particularly after 1995, which is labeled "20" in analysis time.

The hazard function is defined as the probability of enacting regulatory reform (by creating a separate regulator or launching the first privatization effort), given that the country has not yet enacted such a regulatory reform. I estimated Weibull models which state that the probability or "risk" of establishing a separate regulator for telecoms or privatizing the incumbent is a function of diffusion, international, and domestic factors.[5] These models incorporate international market factors (trade and capital openness, international accounting rates for telephone calls) and membership in international organizations (WTO membership, OECD membership), and domestic factors (urban consumers, and telephone performance). I also tested a series of

[5] I also estimated a Cox model, which does not make as many assumptions about functional form as the Weibull. If the model is specified correctly in each case, the coefficients and the direction of the hazard should be similar in both models. The Cox regression is a semi-parametric method that can fit data without having to specify a functional form, e.g. a baseline or increasing hazard. The hazard is expressed in a ratio and the baseline drops out, and the effects of the covariates are estimated relative to the characteristics of the time-varying risk set. The Cox model does, however, make a proportional hazard assumption, which assumes that all countries have a proportional hazard of establishing separate regulators. Results were consistent with the Weibull and thus are not reported.

diffusion variables, for country peer groups based on region, income group, and membership in international organizations.

Of the 183 countries under analysis, 129 countries established separate regulators and 102 countries launched first privatization efforts. A complete list of countries included in the study is listed in Table 2 on page 31. These 183 countries include most of the major players in the world, of which a majority have liberalized their telecom sector, as 70 percent of these countries established a separate regulator and 55 percent of these countries privatized their incumbent. The remaining countries are regarded as "censored" because we do not know whether or when they will liberalize their telecoms sectors. Censorship can pose a problem in the analysis due to unobserved heterogeneity, in that those countries that were especially likely to establish separate regulators might reform early, which might bias the analysis (Box-Steffensmeier 1997). Yet, we do know that the majority of countries in the world liberalized their telecoms sectors during the 1990s and even more countries liberalized in the early 2000s, almost reaching a saturation point of all countries around the world. The starting date of 1975 was selected for the model, as the first official telecom reform occurred in Chile in 1977, and the first wave of telecom reforms occurred in the United States, Britain, and Japan in 1984. By selecting a starting date for the hazard model earlier than these events, it is possible to capture some of the elements that may have led to these early reformers as well as the bulk of later reformers in the late 1990s.

5. Results and Discussion

Results are shown in Table 5 on page 34. All results are measured in hazard ratios, and if the coefficient on the hazard ratio is greater than one, it indicates an increasing hazard, meaning an increasing chance of establishing a separate regulator for telecommunications or launching a first privatization effort. If the coefficient is less than one, it indicates a decreasing hazard, which means a decreasing risk of establishing a separate regulator for telecoms. Hazard ratios can be understood as the change in the odds of policy adoption associated with a one-unit change in the explanatory variable. Therefore, hazard ratios larger than one represent an increased probability of policy adoption; of zero to one a decreased probability of policy adoption; and of one, zero effect. For reasons of space, I will explain the hazard ratios for only three of the variables in Table 5 on page 34, which explain the timing of the adoption of a separate regulator.

The variable OECD member has a hazard ratio of 1.83 in the separate regulator model on page 34, which means that ceteris paribus, a one-unit change in a country's adoption of a separate regulator increases the probability that a country will adopt a separate regulator. The hazard ratio for "trade" across most model specifications is about 1.0, which indicates that there is no relationship between a country's trade dependence and the timing of liberal reform. The hazard ratio for income per capita in the separate regulator model is 1.15, which indicates that the lower the income per capita, the higher the probability is that a country will enact regulatory reform.

The first important result is that membership in international organizations emerges as significant in explaining the timing of reform for both establishing a separate regulator and for privatizing the incumbent, but the results vary across reform. Membership in the WTO increases a country's probability of adopting a separate regulator by a hazard ratio of 2.69. This makes sense substantively, in that having a telecom regulator separate from the incumbent was one of the general principles of the WTO Basic Agreement on Telecommunications, adopted in 1997, and most member countries established new agencies either before or after this deadline. Membership in the WTO also has a positive and statistically significant impact on the timing of privatizing the incumbent telecom operator, with a hazard ratio of 1.88, less than that of establishing a separate regulator. This result also makes sense substantively, in that private ownership of a telecom incumbent was not a requirement for the market access commitments of the WTO Basic Agreement on Telecommunications or other documents relating to telecommunications, as was establishing a separate regulator.

Membership in the OECD does have a positive and statistically significant effect on both establishing a separate regulator and privatizing the state-owned incumbent, with hazard ratios of 1.83 and 1.90, respectively. This result is interesting, in that the OECD made best practice recommendations for the creation of separate regulators, but did not have a specific set of recommendations for privatization.

6. Discussion and Conclusion

In sum, there are liberal trends across countries around the world, especially in the establishment of separate regulatory agencies and privatizing state-owned telecoms companies. Overall, the most important variables to emerge from these models are membership in the GATT and the WTO and membership in the OECD. In the privatization model, a country's income and size are two important predictors, although membership in the OECD, as indicated by the large hazard ratio of 2.61 shows great significance in the timing of privatizing the incumbent.

A country's trade dependence, as measured by the sum of imports and exports as a percentage of GDP, shows a hazard ratio of one across all model specifications, with no statistical significance. These results indicate that trade dependence does not have an effect on the timing of regulatory reform in telecommunications. Substantively, it is not surprising that the direct link between trade dependence and timing of telecom regulatory reform is weak and tenuous, although we might expect there to be more of an influence given not only the shift in telecoms as a tradeable service but also a country's overall integration into the international economy. Still, it is possible that trade is not as important as we might think, at least in terms of the timing of regulatory reform.

A country's ranking of capital openness also hovers around one, and is sometimes statistically significant in the models for establishing a separate regulator, which indicates that a country's capital openness has either no effect or a mildly positive effect on the timing of establishing a separate regulator. This makes sense

substantively, in that we would expect that having an open capital account would also indicate a country's openness to portfolio investment in telecommunications or direct investment in telecommunications, both of which might be affected by the status of the capital account. Also, having an open capital account might indicate a government's overall willingness to open up the economy to investment and trade. The small hazard ratio and occasional statistical significance supports this mild association between capital openness and timing of regulatory reform.

One signal to the broader investment community that a sizeable investment in telecommunications is not at risk of government expropriation of assets is to establish a separate regulator for telecommunications, thus indicating that the government no longer plays a direct role in the operations and regulation of the telecom incumbent. Another strategy for the government to attract FDI inflows is by launching a first privatization effort. Yet, while the signs of the hazard ratio are appropriately negative, the models do not yield statistically significant results, and thus we must continue to explore these hypotheses in other work.

Conclusion

The traditional stories of telecom regulatory reform are not satisfactory in they are not able to identify the specific causes, actors, or mechanisms behind this vast convergence in market reforms. While conventional wisdom holds that international markets and domestic politics determine when a government chooses to liberalize its

telephones, this study shows this to be incorrect. Instead, I show that IO membership is the single most significant factor which varies across policy areas.

Having a telecom regulator separate from the incumbent is one of the requirements for signing the WTO Basic Agreement on Telecommunications, and we would expect countries to have a separate regulator. Yet, what the data do not show is why countries chose a particular form of separate regulatory agency, as this form is not stipulated as a requirement for the WTO commitment (WTO 1997) or for the European Union (Levi-Faur 2004).

In the end, the traditional stories of telecom regulatory reform are not satisfactory in they are not able to identify the specific causes, actors, or mechanisms behind this vast convergence in market reforms. While these theories can shed light on more long-term enduring structures and preferences, they have a hard time explaining radical change. The diffusion approaches that are becoming more popular in the literature provide interesting insights, but the concepts and measures do not perform well in the econometric analysis for this study of telecoms reforms. For example, identifying regional patterns of reform is helpful, but what are the characteristics of region that determine why some regions are more innovative and others or not? Furthermore, some of the broader notions of global policy diffusion, as currently constructed by the proportion of prior adoptions within a peer group identified by the analyst, are more suggestive than conclusive, especially without attention to the overall specific motivations of policy-makers. Also, in this analysis, the more general measures of

diffusion did not produce results that were as powerful as in other settings. This partly may be due to some conceptualization and measurement issues in the data. It could be that a diffusion approach is more of an empirical regularity in search of a theory. Yet, another alternative is that diffusion is more deeply embedded than is depicted and measured in this paper as well as in other studies.

Theoretically, the combination of international, domestic, and diffusion factors in an analysis of policy innovation helps provide a more complete understanding of how the world works, and how to navigate the tenuous and increasingly blurred boundary between international and domestic politics. In terms of policy implications, it has become clear that having a separate regulatory agency has become *de rigueur* for most countries around the world. Even some of the most heavily regulated and government-owned economies have started to spin off separate regulatory agencies. Also, while there appears to be an ideological consensus that having a regulator separate from the incumbent is necessary and having a regulator separate from the ministry is desirable, it is not apparent why that must always be the case.

It appears that membership in IOs, especially the WTO and the OECD, is pivotal in determining the timing of the new telecom regime, as opposed to most traditional arguments about global markets, domestic politics, and domestic economic factors. Why would this be the case? I argue that countries take part in international socialization through membership in these IOs and others. The OECD in particular is important in its peer-reviewed regulatory studies. Another group that is important in

determining this shape of the regulatory regime is the European Union. While it's difficult to show this influence in the current statistical analysis, it is clear that the European directives on the Information Society were important for countries in adopting new regulatory agencies for the information society and also for liberalizing the telecoms regime.

While the statistical analysis in this paper provides some insight into the role of some international organizations, especially the WTO and the OECD, and not others; as well as some of the common domestic factors to rule out in the case of the timing of telecoms reform, there are many unanswered questions. As with many cross-national statistical analyses, it is hard to show the influence of actors and mechanisms. Further, while there are possible suggested mechanisms, it is difficult to show them directly, especially for specific countries. It would be helpful to know, for example, how do these patterns manifest themselves across different countries and even within regions? It would be helpful to have controlled case comparisons among countries of similar regions, and across different regions, to test whether and how membership in international organizations affects their domestic policy choices. Furthermore, while it is possible to demonstrate the association of IO membership on liberal policy initiatives, it is not possible to glean a full picture of the type of mechanism underlying the process – it could be a combination of coercion, socialization, or competition. For these types of questions, it is necessary to turn to more qualitative analysis and in-depth case studies of particular countries and particular international organizations, to trace out the process by which external influences affected domestic policy change.

For example, it would be helpful to have controlled case comparisons of countries to test these hypotheses further (Bennett and George 2005; Gerring 2004).

Finally, while this study shows the importance of international organizations in the timing of liberal telecom reform, it is difficult to ascertain whether or not this signals a beginning of a regulatory state (Majone 1997) or a new form of "regulatory capitalism" (Levi-Faur and Jordana 2005). It is true that this form of regulatory reform is global and pervasive, yet it is important to conduct more in-depth country studies to analyze the actors, mechanisms, and patterns of reforms.

Table 2. Countries in the dataset (183 total).

Afghanistan
Albania
Algeria
Andorra
Angola
Antigua and Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
Bahamas
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bhutan
Bolivia
Bosnia
Botswana
Brazil
Brunei Darussalam
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Central African Republic
Chad
Chile
China
Colombia
Comoros
Congo, Brazzaville
Congo, Kinshasa
Costa Rica
Cote d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Denmark
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Eritrea
Estonia
Ethiopia
Fiji
Finland
France
Gabon
Gambia
Georgia
Germany
Ghana
Greece
Grenada
Guatemala
Guinea
Guyana
Haiti
Honduras
Hungary
Iceland
India
Indonesia
Iran
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Kiribati
Korea, DPR
Korea, Republic of
Kuwait
Kyrgistan
Lao PDR
Latvia
Lebanon
Lesotho
Liberia
Libya
Liechtenstein
Lithuania
Luxembourg
Macedonia, TFYR
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall Islands
Mauritania
Mauritius
Mexico
Micronesia
Moldova
Monaco
Mongolia
Morocco
Mozambique
Myanmar
Namibia
Nepal
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Norway
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland
Portugal
Qatar
Romania
Russia
Rwanda
Sao Tome & Principe
Saudi Arabia
Senegal
Sierra Leone
Singapore
Slovak Republic
Slovenia
Solomon Islands
Somalia
South Africa
Spain
Sri Lanka
St. Lucia
St. Vincent
Sudan
Suriname
Swaziland
Sweden
Switzerland
Syria
Tajikistan
Tanzania
Thailand
Togo
Tonga
Trinidad & Tobago
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Arab Emirates
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Venezuela
Vietnam
Western Samoa
Yemen
Yugoslavia
Zambia
Zimbabwe

Table 3. Selected Separate Regulators & Privatizations (data from ITU-D, various years)

Country	Sepreg	Privatization
Afghanistan	2003	
Albania	1998	
Algeria	2000	
Angola	1999	
Argentina	1990	1990
Armenia	…	1997
Australia	1997	1997
Austria	1997	1998
Bahamas	1999	
Bahrain	2002	1981
Bangladesh	2002	
Barbados	2001	1991
Belgium	1993	1996
Belize	1988	1996
Benin	2002	
Bhutan	2000	
Bolivia	1995	1995
Bosnia	2001	
Botswana	1996	
Brazil	1997	1996
Brunei	2003	
Bulgaria	1998	1999
Burkina Faso	1998	
Burundi	1997	
Cameroon	1998	
Canada	1976	1960
Cape Verde	1992	1995
Chad	1998	
Chile	1977	1982
Colombia	1994	
Costa Rica	1996	0
Cote d'Ivoire	1995	1997
Croatia	2000	1999
Czech Republic	2000	1995
Cyprus	2002	
Denmark	1991	1991
Dominican Republic	1998	2001
Ecuador	1995	
Egypt	1998	
El Salvador	1996	1998
Equatorial Guinea	…	1987
Eritrea	1998	
Estonia	1998	1992
Ethiopia	1996	
Finland	1988	1998
France	1997	1997
Gabon	2001	
Gambia	2004	
Georgia	2000	
Germany	1998	1996
Ghana	1996	1997
Greece	1992	1996
Grenada	2001	1998
Guatemala	1996	1998
Guinea	1992	1996
Guinea-Bissau	1999	1999
Guyana	1992	1998
Haiti	1969	2001
Honduras	1996	
Hong Kong	1993	
Hungary	1990	1993
Iceland	1997	2000
India	1997	1992
Indonesia	2003	2001
Iran	2003	2001
Ireland	2002	1996
Italy	1998	1998
Jamaica	1995	1989
Japan	…	1985
Jordan	1995	2000
Kazakhstan	…	1994
Kenya	1999	1999
Kiribati	…	1998
Korea, Republic of	1992	1993
Kyrgyzstan	1997	
Lao PDR	…	1998
Latvia	2001	1994
Lesotho	2000	
Liberia	2005	
Liechtenstein	1999	
Lithuania	2001	1998
Luxembourg	1997	
Macedonia	2005	1999
Madagascar	1997	1995
Malawi	1998	
Malaysia	1998	1990
Maldives	2003	1988
Mali	1999	
Malta	1997	1998
Mauritania	1999	2001
Mauritius	1988	
Mexico	1996	1990
Moldova	2000	
Mongolia	2002	1995
Morocco	1997	2001
Mozambique	1992	
Namibia	1992	
Nepal	1998	
Netherlands	1997	1995
New Zealand	1987	1990
Nicaragua	1995	2001
Niger	2004	
Nigeria	1993	1998
Norway	1987	2000
Oman	2002	
Pakistan	1996	1997
Panama	1996	1997
Paraguay	1995	
Peru	1994	1994
Philippines	1979	1998
Poland	2000	1998
Portugal	1989	1995
Qatar	2004	1998
Romania	2002	1998
Russia	…	1997
Rwanda	2001	1998
Sao Tome	2006	
Saudi Arabia	2002	
Senegal	2001	1997
Serbia	2005	
Singapore	1992	1993
Slovak Republic	2000	1996
Slovenia	2001	1996
Somalia	…	1997
South Africa	1997	1997
Spain	1997	1992
Sri Lanka	1991	1997
St. Lucia	2001	1998
St. Vincent	2001	1999
Sudan	1994	1994
Suriname	1998	
Sweden	1992	2000
Switzerland	1997	1998
Tajikistan	…	1998
Tanzania	1994	2001
Thailand	2004	
Togo	1998	
Trinidad & Tobago	2002	1999
Tunisia	2001	1998
Turkey	2000	1990
Uganda	1997	2000
UAE	2004	
UK	1984	1984
US	1934	
Uruguay	2001	
Venezuela	1991	
Zambia	1994	
Zimbabwe	2000	

Table 4. Variable List. Unit=country-year. All explanatory variables are lagged one period.

Concept	Description	Obs	Mean	SD	Min	Max	Source
DEPENDENT VARIABLES							
Independent Regulator	Independent regulator: year establishing a separate regulator; 1=yes, 0=no	5656	.176	.381	0	1	ITU-Reg, various years
Privatization	Privatization: first privatization effort, 1=yes, 0=no	5434	.124	.329	0	1	ITU-Reg, various years
INDEPENDENT VARIABLES							
International Organization							
GATT-WTO member	Membership in the GATT and/or WTO in a given year	5657	.600	.489	0	1	WTO website: www.wto.int
OECD member	Membership in the OECD in a given year	6254	.162	.368	0	1	Website; www.oecd.org
CONTROLS							
International markets							
Trade openness	Exports + Imports/GDP; natural log,	4610	73.43	45.95	1.12	439.	(WDI) various years
Capital openness	Capital account openness On a scale of 0-9 (closed to most open), which counts how many of the nine openness criteria a country	4384	2.01	2.81	0	9	IMF *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAR) (Brune et al. 2002).
Domestic							
Teledensity (fixed)	Mainlines per 1000 people; natural log	4594	3.50	1.88	-2.3	6.62	ITU
Country Size	Population; natural log,	6096	15.38	1.93	10.1	20.9	(WDI) various years
Level of Development	GDP per capita, in 1995 US constant dollars (log)	4895	7.52	1.52	4.33	10.9	(WDI)

Table 5. RESULTS: Weibull Hazard Ratios for Telecom Reform

	Independent Regulator	Privatization
International Organizations		
GATT-WTO member	2.69***	1.88**
	(.72)	(.60)
OECD member	1.83**	1.90*
	(.58)	(.73)
Controls:		
International markets		
Trade (IM+EX/GDP)	.99	1.00
	(.00)	(.00)
Capital Openness (0-9 closed to open)	1.04	1.00
	(.00)	(.04)
Domestic		
Teledensity (fixed)	1.15	1.18
	(.13)	(.17)
Income (lnGDP per capita)	.83	1.04
	(.13)	(.19)
Diffusion		
Global Reforms: prior regulators (or privatizations)	1.00	.99
	(.72)	(.28)
Observations	2652	2848
Number of subjects	166	164
Number of failures	116	86

Results reported as hazard ratios. Standard errors reported in parentheses. ***=significant at the .001 level; **=significant at the .05 level, *=significant at the .10 level.

References

Allison, Paul David. 1984. *Event History Analysis: Regression for Longitudinal Event Data*. Beverly Hills, CA: Sage Publications.

Armada, Francisco, Carles Muntaner, and Vicente Navarro. 2001. "Health and Social Security Reforms in Latin America." *International Journal of Health Services* 31 (4):729-66.

Barnett, Michael, and Martha Finnemore. 1999. "The Politics, Power, and Pathologies of International Organizations." *International Organization* 53 (4):699-732.

———. 2004. *Rules for the World: International Organizations in Global Politics*. Ithaca, NY: Cornell University Press.

Bearce, David H., and Stacy Bondanella. 2007. "Intergovernmental Organizations, Socialization, and Member-State Interest Convergence." *International Organization* 61 (4):703-33.

Bennett, Andrew, and Alexander George. 2005. *Case Studies and Theory Development in the Social Sciences*. Cambridge, MA: MIT Press.

Berry, Frances S., and William D. Berry. 1990. "State Lottery Adoptions as Policy Innovations: An Event History Analysis." *American Political Science Review* 84:395-415.

———. 1992. "Tax Innovation in the American States: Capitalizing on Political Opportunity." *American Journal of Political Science* 36 (715-42).

Blossfeld, Hans-Peter, and Götz Rohwer. 2002. *Techniques of Event History Modeling: New Approaches to Causal Analysis*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates.

Box-Steffensmeier, Janet M. and Bradford S. Jones. 1997. "Time is of the Essence: Event History Models in Political Science." *American Journal of Political Science* 41 (4):1414-61.

Box-Steffensmeier, Janet M., and Bradford S. Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. Cambridge: Cambridge University Press.

Braun, Dietmar, and Fabrizio Gilardi. 2006. "Taking "Galton's Problem" Seriously: Towards a Theory of Policy Diffusion " *Journal of Theoretical Politics* 18 (3):298-322.

Brinks, Daniel, and Michael Coppedge. 2006. "Diffusion is No Illusion: Neighbor Emulation in the Third Wave of Democracy." *Comparative Political Studies* 39 (4):463-89.

Brooks, Sarah M. 2005. "Interdependent and Domestic Foundations of Policy Change: The Diffusion of Pension Privatization Around the World." *International Studies Quarterly* 49 (2):273-94.

———. 2007. "When Does Diffusion Matter? Explaining the Spread of Structural Pension Reforms Across Nations." *Journal of Politics* 69 (3):701-15.

Brune, Nancy, Alexandra Guisinger, and Geoffrey Garrett. 2002. "The Political Economy of Capital Account Liberalization." In *Working Paper*: Yale University.

Cave, Martin, Sumit Kumar Majumdar, and Ingo Vogelsang, eds. 2002. *Handbook of Telecommunications Economics*. New York: North-Holland.

Checkel, Jeffrey T. 2005. "International Institutions and Socialization in Europe: Introduction and Framework." *International Organization* 59 (4):801-26.

Cleves, Mario A., William W. Gould, and Roberto G. Gutierrez. 2002. *An Introduction to Survival Analysis Using Stata*. College Station, TX: Stata Press.
Cowhey, Peter F. 1990. "The International Telecommunications Regime: The Political Roots of Regimes for High Technology." *International Organization* 44 (2):169-99.
Dezalay, Yves, and Bryant Garth. 2002. *The Internationalization of Palace Wars: Lawyers, Economists, and the Contest to Transform Latin American States*. Chicago: University of Chicago Press.
Drezner, Daniel W. 2007. *All Politics is Global: Explaining International Regulatory Regimes*. Princeton, NJ: Princeton University Press.
Elkins, Zachary, Andrew Guzman, and Beth A. Simmons. 2006. "Competing for Capital: The Diffusion of Bilateral Investment Treaties, 1960–2000." *International Organization* 60 (4):811-46.
Finnemore, Martha. 1993. "International Organizations as Teachers of Norms." *International Organization* 47 (4):565-97.
Frieden, Jeffry A. 1991. "Invested Interests: The Politics of National Economic Policies in a World of Global Finance." *International Organization* 45 (4):425-51.
Frieden, Jeffry, and Ronald Rogowski. 1996. "The Impact of the International Economy on National Policies: An Analytical Overview." In *Internationalization and Domestic Politics*, ed. R. O. Keohane and H. V. Milner. Cambridge: Cambridge University Press.
Garrett, Geoffrey. 1998. *Partisan Politics in the Global Economy*. New York: Cambridge University Press.
Gerring, John. 2004. "What is a Case Study and What is it Good For?" *American Political Science Review* 98 (2):341-54.
Gilardi, Fabrizio. 2002. "Policy Credibility and Delegation to Independent Regulatory Agencies: A Comparative Empirical Analysis." *Journal of European Public Policy* 9.
———. 2005. "The Institutional Foundations of Regulatory Capitalism: The Diffusion of Independent Regulatory Agencies in Western Europe." *Annals of the American Academy of Political and Social Science* 598:84-101.
Gleditsch, Kristian Skrede, and Michael D. Ward. 2006. "Diffusion and the International Context of Democratization." *International Organization* 60 (4):911-33.
Gourevitch, Peter. 1986. *Politics in Hard Times: Comparative Responses to International Economic Crises*. Ithaca, NY: Cornell University Press.
Gray, Virginia. 1973. "Innovation in the States: A Diffusion Study." *American Political Science Review* 67 (4):1174-85.
Henisz, Witold J., Bennet A. Zelner, and Mauro F. Guillen. 2004. "International Coercion, Emulation, and Policy Diffusion: Market-oriented Infrastructure Reforms 1977-1999." William Davidson Institute.
———. 2005. "The Worldwide Diffusion of Market-Oriented Infrastructure Reform, 1977-1999." *American Sociological Review* 70 (6):871-98.
Hosmer, David W., Jr., and Stanley Lemeshow. 1999. *Applied Survival Analysis: Regression Modeling of Time to Event Data*. New York: John Wiley & Sons, Inc.
Ikenberry, G. John, and Charles Kupchan. 1990. "Socialization and Hegemonic Power." *International Organization* 44 (3):283-315.

ITU, International Telecommunications Union. *Regulatory Database, ITU-D*. International Telecommunications Union, Bureau of Telecommunications Development (BDT), Sector Policy Unit. 2002a [cited. Available from www.itu.int.
———. 2002b. "Trends in Telecommunications Reform: Effective Regulation." Geneva, Switzerland: International Telecommunications Union.
———. 2004. *Regulatory Database, ITU-D*. International Telecommunications Union, Bureau of Telecommunications Development (BDT), Sector Policy Unit. 2003a [cited 05-05-2004 2004]. Available from http://itu.int.
———. 2003. *World Telecommunications Indicators Database 1960 - 2002*. International Telecommunications Union 2003b [cited 2003]. Available from www.itu.int.
Jacobson, Harold K. 2000. "International Institutions and System Transformation." *American Review of Political Science* 3:149-66.
Jahn, Detlef. 2006. "Globalization as "Galton's Problem": The Missing Link in the Analysis of Diffusion Patterns in Welfare State Development." *International Organization* 60:401-31.
Johnston, Alastair Iain. 2001. "Treating International Institutions as Social Environments." *International Studies Quarterly* 45 (4):487-515.
Jordana, Jacint, and David Levi-Faur. 2006. "Towards a Latin American Regulatory State? The Diffusion of Autonomous Regulatory Agencies Across Countries and Sectors." *International Journal of Public Administration* 29 (4-6):335-66.
Jordana, Jacint, David Levi-Faur, and Imma Puig. 2006. "The Limits of Europeanization: Telecommunications and Electricity Liberalization in Spain and Portugal." *Governance* 19 (3):437-64.
Katzenstein, Peter K. 1985. *Small states in world markets: Industrial policy in Europe*. Ithaca, NY: Cornell University Press.
Keohane, Robert O. 1984. *After Hegemony: cooperation and discord in the world political economy*. Princeton: Princeton University Press.
Keohane, Robert O., and Helen Milner. 1996. *Internationalization and Domestic Politics*. New York: Cambridge University Press.
Krasner, Stephen D. 1991. "Global Communications and National Power: Life on the Pareto Frontier." *World Politics*:336-66.
———, ed. 1983. *International regimes*. Ithaca: Cornell University Press.
Levi-Faur, David. 2003. "The Politics of Liberalization: Privatization and Regulation-for-competition in Europe's and Latin America's Telecoms and Electricity Industries." *European Journal of Political Research* 42:705-40.
———. 2004. "On the "Net Impact" of the European Union Policy Process: The EU's Telecoms and Electricity Regimes Between the Global and the National." *Comparative Political Studies* 37 (1):3-29.
———. 2006. "Regulatory Capitalism: The Dynamics of Change Beyond Telecoms and Electricity." *Governance* 19 (3):497-525.
Levi-Faur, David, and Jacint Jordana, eds. 2005. *The Rise of Regulatory Capitalism: the Global Diffusion of a New Order*. Vol. 598: Sage Publications, Inc.

Levy, Brian, and Pablo T. Spiller. 1994. "The Institutional Foundations of Regulatory Commitment: a Comparative Analysis of Telecommunications Regulation." *Journal of Law, Economics and Organization* 10:201-46.
Majone, Giandomenico. 1994. "The Rise of the Regulatory State in Europe." *West European Politics* 17 (3):77-101.
———. 1997. "From the Positive to the Regulatory State: causes and consequences of changes in the mode of governance." *Journal of Public Policy* 17 (2):139-67.
Martin, Lisa L., and Beth A. Simmons. 1998. "Theories and Empirical Studies of International Institutions." *International Organization* 52 (4):729-57.
Meseguer, Covadonga. 2005. "Policy Learning, Policy Diffusion, and the Making of a New Order." *The Annals of the American Academy of Political and Social Science* 598 (1):67-82.
———. 2006. "Rational Learning and Bounded Learning in the Diffusion of Policy Innovations." *Rationality and Society* 18 (1):35-66.
Milner, Helen. 2006. "The Digital Divide: The Role of Political Institutions in Technology Diffusion." *Comparative Political Studies* 39 (2):176.
Mintrom, Michael. 1997. "Policy Entrepreneurs and the Diffusion of Innovation." *American Journal of Political Science* 41 (3):738-70.
Mohr, Lawrence B. 1969. "Determinants of Innovation in Organizations." *American Political Science Review* 63 (3):111-26.
Mosley, Layna. 2003. *Global Capital and National Governments*. New York: Cambridge University Press.
Newbery, David M. 2000. *Privatization, Restructuring, and Regulation of Network Utilitites.* Cambridge, MA: MIT Press.
Noam, Eli M. 1992. *Telecommunications in Europe*. New York: Oxford University Press.
———. 1999. *Telecommunications in Africa*. New York: Oxford University Press.
Noll, Roger G., and Frances McCall Rosenbluth. 1995. "Telecommunications Policy: Structure, Process, Outcomes." In *Structure and Policy in Japan and the United States*, ed. P. F. Cowhey and M. D. McCubbins. New York: Cambridge University Press.
Petrazzini, Ben A. 1995. *The Political Economy of Telecommunications Reform in Developing Countries. Privatization and Liberalization in Comparative Perspective*. Praeger.
Polillo, Simone, and Mauro F. Guillen. 2005. "Globalization Pressures and the State: The Worldwide Spread of Central Bank Independence." *American Journal of Sociology* 110 (6):1764-802.
Remmer, Karen. 2003. "Elections and Economics in Contemporary Latin America." In *Post-Stabilization Politics in Latin America*, ed. C. Wise and R. Roett. Washington, DC: Brookings Institution.
Rogowski, Ronald. 1989. *Commerce and Coalitions: How Trade Affects Domestic Political Alignments*. Princeton, N.J.: Princeton University Press.
Röller, Lars-Hendrick and, and Leonard Waverman. 2001. "Telecommunications Infrastructure and Economic Development: A Simultaneous Approach." *American Economic Review* 91 (4):909-23.
Simmons, Beth A., Frank Dobbin, and Geoffrey Garrett. 2006. "Introduction: The International Diffusion of Liberalism." *International Organization* 60:781-810.

Simmons, Beth A., and Zachary Elkins. 2004. "The Globalization of Liberalization: Policy Diffusion in the International Political Economy." *American Political Science Review* 98 (1):171-89.
Steinmo, Sven, Kathleen Thelen, and Frank Longstreth, eds. 1992. *Structuring Politics: Historical Institutionalism in Comparative Analysis*. Cambridge: Cambridge University Press.
Stiglitz, Joseph. 2002. *Globalization and Its Discontents*. New York: Norton.
Stone, Randall W. 2002. *Lending Credibility: The International Monetary Fund and the Post-Communist Transition*. Princeton, NJ: Princeton University Press.
———. 2004. "The Political Economy of IMF Lending in Africa." *American Political Science Review* 98 (4):577-91.
Strang, David. 1991. "Adding Social Structure to Diffusion Models: An Event History Framework." *Sociological Methods Research* 19:324-53.
Swank, Duane. 2006. "Tax Policy in an Era of Internationalization: An Assessment of a Conditional Diffusion Model of the Spread of Neoliberalism." *International Organization* 60 (4):847-82.
Thatcher, Mark. 1999. *The Politics of Telecommunications: National Institutions, Convergence, and Change in Britain and France*. New York: Oxford University Press.
———. 2002. "Regulation after delegation: independent regulatory agencies in Europe." *Journal of European Public Policy* 9 (6):954-72.
Vogel, Steve. 2006. "Why Freer Markets Need More Rules." In *Creating Competitive Markets: The Politics and Economics of Regulatory Reform*, ed. M. A. Levin, M. K. Landy and M. Shapiro. Washington, DC: Brookings Institution Press.
Vogel, Steven K. 1996. *Freer Markets, More Rules: Regulatory Reform in Advanced Industrial Countries*. Ithaca, NY: Cornell University Press.
Vreeland, James Raymond. 2003. *The IMF and Economic Development*. New York: Cambridge University Press.
Walker, Jack L. 1969. "The Diffusion of Innovations Among the American States." *The American Political Science Review* 63 (3):880-99.
Weyland, Kurt. 2005. "Theories of Policy Diffusion: An Assessment." *World Politics* 57:262-95.
———. 2006. *Bounded Rationality and Policy Diffusion: Social Sector Reform in Latin America*. Princeton, NJ: Princeton University Press.
Wibbels, Erik, and Moisés Arce. 2003. "Globalization, Taxation, and Burden-Shifting in Latin America." *International Organization* 57 (1):111-36.
World_Bank. 2004. *World Development Indicators* [electronic database]. The World Bank 2003 [cited 04-15-2004 2004]. Available from www.worldbank.org/wdi.
WTO, World Trade Organization. 1997. "Reference Paper on Basic Telecommunications Services." Geneva, Switzerland: WTO.
Yamaguchi, Kazuo. 1991. *Event History Analysis*. Newbury Park, CA: Sage.