

# International Institutions and Domestic Compensation: The IMF and the Politics of Capital Account Liberalization

**Bumba Mukherjee** Pennsylvania State University  
**David Andrew Singer** Massachusetts Institute of Technology

*Certain governments have been faster than others in relaxing their restrictions on the cross-border movement of capital. How can we explain the timing and extent of financial liberalization across countries since the 1970s? We argue that IMF stabilization programs provide a window of opportunity for governments to initiate financial reforms, but that policy makers are more likely to seize this opportunity when welfare expenditures are high. Large loans from the IMF shield policy makers from the costs of financial reform, while welfare expenditures provide credibility to the government's ex ante promises of compensation to individuals who are harmed by the reforms. We test this hypothesis on data for 87 countries from 1975 to 2002. We employ a spatial autoregressive error sample selection model which accounts for the nonrandom participation of countries in IMF programs as well as the processes of international policy diffusion. The results provide strong support for the interactive effect of IMF programs and domestic welfare expenditures on financial liberalization.*

In the years after World War II, most countries insulated their economies from international capital flows. Policy makers believed that controls on capital were part of a necessary bulwark against speculative currency attacks. However, developed countries began to relax their capital controls in the 1970s, and developing countries gradually—and often reluctantly—followed their lead, but with tremendous cross-national and temporal variation (Haggard and Maxfield 1996; Quinn 2003). In searching for the factors that tipped the political balance in favor of financial liberalization, scholars have examined technological change, domestic interest groups, ideologies, and political institutions, as well as emulation of neighboring countries.<sup>1</sup> Yet it has become conventional wisdom to attribute at least part of the “prying open” of developing country markets to the coercive influence of the International Monetary Fund (IMF),

which has the power to withhold emergency financing to countries that fail to abide by its lending conditions (Abdelal 2007; Chwieroth 2008; Stiglitz 2003, 2004; Woods 2006). Perhaps surprisingly, existing scholarship provides inconclusive evidence of the IMF's role in the spread of financial liberalization. If the IMF is indeed one of the world's most powerful international institutions, why is there no clear association between IMF lending and financial openness in the developing world?

In this article, we argue that the IMF's influence is not an all-or-nothing proposition—and despite the allegations by its critics, it has not routinely foisted financial liberalization onto all countries that seek to borrow from its coffers. In fact, the IMF has rarely included the relaxation of capital controls as part of its loan conditionality (IMF 2005a; Quinn and Toyoda 2007). Instead, we argue that the incentives associated with IMF

---

Bumba Mukherjee is Associate Professor of Political Science, Pennsylvania State University, University Park, PA 16802 (sxm73@psu.edu). David Andrew Singer is Assistant Professor of Political Science, Massachusetts Institute of Technology, Cambridge, MA 02139 (dasinger@mit.edu).

Earlier versions of this manuscript were presented at Princeton University, Columbia University, and the 2008 annual meeting of the American Political Science Association, Boston. We thank the editor and anonymous reviewers, as well as Adam Berinsky, Jeff Chwieroth, Mark Copelovitch, Edward Mansfield, Helen Milner, Dennis Quinn, Eric Reinhardt, Peter Rosendorff, Thomas Oatley, and seminar participants at Princeton and Columbia for helpful comments and suggestions. We thank Sergio Bejar for research assistance. The usual disclaimer applies.

<sup>1</sup>Examples include Brooks and Kurtz (2007); Chwieroth (2007a); Goodman and Pauly (1993); Kastner and Rector (2003, 2005); Leblang (1997); Li and Smith (2002a, 2002b); Quinn and Inclán (1997); Quinn and Toyoda (2007); and Simmons and Elkins (2004).

*American Journal of Political Science*, Vol. 54, No. 1, January 2010, Pp. 45–60

©2010, Midwest Political Science Association

ISSN 0092-5853

lending interact with the borrowing country's capacity to compensate the losers from economic reform. An established system of domestic welfare spending allows the borrowing government to credibly commit itself *ex ante* to provide compensation to those hurt from more capital account openness (Brooks 2004). We argue that governments with adequate compensatory capacity can use an IMF loan as political cover for imposing costly reforms. Scholars have previously invoked the IMF's function as a shield against domestic opposition to explain policy makers' initiation of fiscal and monetary austerity under IMF programs (Haggard 1985; Remmer 1986; Vaubel 1986; Vreeland 2003). However, we part company with the previous literature by exploring the domestic enabling conditions of the IMF's influence—or, as Pevehouse calls it, the “forgotten nexus” between international factors and domestic processes (Pevehouse 2005, 8–9; see also Martin and Simmons 1998).

Our argument suggests a bottom-up explanation for liberalization—in which governments initiate reforms under the cover of an IMF program—and also explains why we should see no simple association between IMF lending and policy reform. Instead, we expect that the greatest positive influence on financial openness emerges from the interaction between a sizeable IMF loan and substantial domestic welfare expenditures.

An appropriate test of this hypothesis must address two important challenges. First, the analysis must account for the problem of selection bias. The factors that drive a country to participate in an IMF program might also explain the country's subsequent liberalization behavior. Our empirical analysis must therefore isolate the influence of the IMF itself, so that the existence of an IMF program does not simply reflect a country's underlying economic and political conditions. Second, the analysis must account for the possibility that international diffusion is a driving force behind liberalization. If one country's policy choice influences another country's choice—either through emulation, market pressure, or some other mechanism—then a failure to account for this interdependence will lead to inconsistent and inefficient statistical results.

To overcome these hurdles, we estimate a novel spatial autoregressive error (SAE) sample selection model on a dataset of 87 countries between 1975 and 2002. Results from the model provide statistical support for the interactive effect of IMF programs and domestic welfare expenditures on financial liberalization.

This article proceeds as follows. We begin with an overview of the cross-national variation in financial liberalization since the 1970s and a brief discussion of the political economy literature. In the next section, we dis-

cuss the process by which borrowing governments initiate reforms under the coverage of an IMF stabilization program. We then present the statistical model, the data, and the results. We conclude by discussing the implications of our findings for the study of the political economy of financial liberalization.

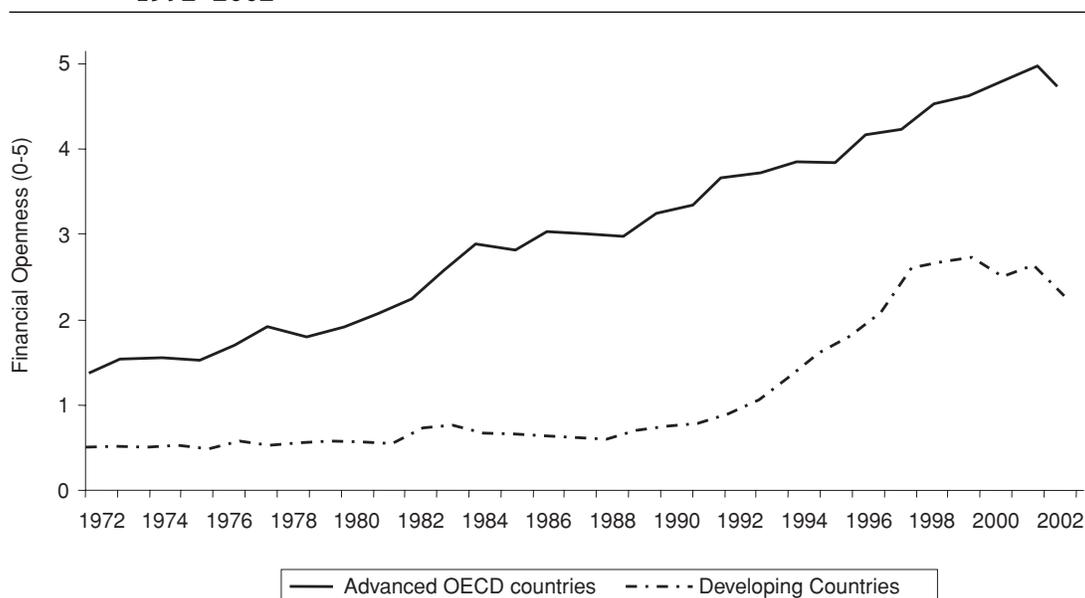
## The IMF's Influence on Financial Liberalization

There is substantial cross-national and temporal variation in financial liberalization since the decline of the Bretton Woods international monetary system in the early 1970s.<sup>2</sup> Whereas most countries gradually relaxed their controls on capital flows during the 1980s and 1990s, the advanced democracies remain more open, on average, than developing countries (see Figure 1). Developing countries also demonstrate more variation in their liberalization efforts compared to the advanced countries, which today are largely free of *de jure* capital controls.

How can we explain the extent and timing of financial liberalization around the world since the 1970s? Scholars have examined international pressures as well as domestic interest groups, ideologies, and political institutions. At the systemic level, scholars have identified increasing international interdependence—including increased trade and the “exogenous easing of international exchange”—along with balance-of-payments difficulties as drivers of liberalization (Frieden and Rogowski 1996; Goodman and Pauly 1993; Haggard and Maxfield 1996). However, systemic-level arguments are unable to explain the wide variation in the timing and extent of liberalization across the world. A more recent line of scholarship suggests that international diffusion—in which countries are influenced by their “peers” due to geographical proximity, emulation, or financial market pressures—is a powerful determinant of capital account liberalization (Brune and Guisinger 2007; Garrett et al. 2001; Simmons and Elkins 2004). And finally, scholars have focused on a variety of domestic political and institutional characteristics, such as partisanship (e.g., Brooks and Kurtz 2007; Kastner and Rector 2003; Quinn 1997; Quinn and Inclán 1997), societal interest groups and voter preferences (e.g., Frieden 1991; Li and Smith 2002a, 2002b; Quinn and Toyoda 2007;

<sup>2</sup>Throughout this article, “capital account liberalization” and “financial liberalization” are used interchangeably to refer to the removal of restrictions on capital account transactions and other relevant impediments to cross-border capital flows, such as multiple exchange rates and requirements to surrender export proceeds. See Chinn and Ito (2006).

**FIGURE 1 Financial Openness in Advanced OECD and Developing Countries, 1972–2002**



Source: Derived from the Chinn and Ito (2006) index of capital account openness, rescaled from 0 (closure) to 5 (open).

Sobel 1994), epistemic communities (Chwieroth 2007a), and rent-seeking politicians (Leblang 1997).

The IMF generally enters the literature in simplistic fashion as a coercive influence, often as one of a litany of control variables. A few studies, including Abiad and Mody (2005), Brune and Guisinger (2007), Quinn and Toyoda (2007), and Simmons and Elkins (2004), include a dichotomous control variable for country participation in an IMF program, with the assumption that the IMF might require liberalization as a condition for continued borrowing. It is important to note that these studies do not account for countries' nonrandom participation in IMF programs or the magnitude of those programs. Simmons and Elkins (2004), for example, find that the extension of IMF credit is associated with transitions to *more restrictive* capital controls, but note that this finding most likely reflects the conditions that caused the country to seek IMF assistance rather than the influence of the IMF itself. On the other hand, Chwieroth (2005) finds that a dichotomous measure of participation in an IMF program is associated with capital account liberalization after controlling for selection bias in a relatively small sample of 34 countries over a 13-year period; the magnitude of IMF assistance, however, is not statistically significant.

It is not unreasonable to think that IMF programs should be associated with financial liberalization. In its early days, the IMF was a champion of capital controls, but its stance began to change in the early 1980s as economists

in the United States and Europe came to appreciate the benefits of capital mobility for economic efficiency and risk management (Abdelal 2007; Chwieroth 2007b, 2008). Despite the shift in its policy stance, the IMF has rarely imposed capital account liberalization as an explicit condition for financial assistance (IMF 2005a; Quinn and Toyoda 2007).<sup>3</sup> This fact leads to the question: how, if at all, does the IMF exert influence on financial openness in borrowing countries?

To answer this question, we argue that IMF programs provide a political shield for governments to relax capital flow restrictions. As an IMF program is being negotiated, political leaders use the opportunity to promulgate economic reforms that they otherwise would not have the political capital to implement. The logic can be called "political cover": governments can shift blame for these costly reforms onto the IMF, thereby shielding themselves (at least partially) against political opposition (Remmer 1986; Vreeland 2003).<sup>4</sup> As Vreeland notes, "the executive can push through more of its reform program with the additional bargaining leverage that an IMF agreement brings" (2003, 14). In many cases, governments use "letters of intent" (LOIs) as a tool to commit to these

<sup>3</sup>There are a few notable exceptions, mostly in the mid-1990s, in which capital account liberalization was an IMF-imposed condition. See Woods (2006).

<sup>4</sup>On political cover more generally, see Brooks and Kurtz (2007).

reforms (IMF 2005a). LOIs describe the policy changes that governments plan to make in the context of their request for emergency financial assistance. Governments generally confirm the formal conditions imposed by the IMF in these letters, but they also have an opportunity to commit to additional reforms. The fact that these reforms are clearly delineated in the letters implies that governments can legitimately claim that their “hands are tied” *ex post*. Governments can also make such commitments in memoranda attached to LOIs and in supplementary program documents (IMF 2005a).

As an example, consider the relationship between India and the IMF in 1991. India was in the midst of a severe fiscal crisis, and the assassination of Rajiv Gandhi during the May election campaign led to the emergence of a fragile minority government led by P. V. Narasimha Rao. The new government requested an IMF Stand-by arrangement later that year. As Stephan Haggard (1995) notes, the Rao government was not in a strong position to initiate substantial economic reforms, but the publicity surrounding the negotiations with the IMF provided Rao with much-needed political cover. Indeed, the IMF loan plan—along with speculations about the austere reforms that the IMF would demand—was front-page news for several days.<sup>5</sup> The IMF did in fact include fiscal austerity, regulatory reform, and a revamping of industrial policy as formal conditions in its loan program, but it was the Indian government itself that made an additional commitment to gradual capital account liberalization in its LOI (IMF 2005a). For the public at large, there was no discernible distinction between the IMF’s formal conditions and the Indian government’s own reform commitments. In a speech to the nation, Prime Minister Rao stated that an IMF rescue was the only viable remedy for the financial crisis and that opening India’s borders to foreign investment was one of the many reforms that the government would undertake as part of the IMF program.<sup>6</sup>

Of course, not all IMF programs are as large and prominent as India’s 1991 Stand-by arrangement. India’s rescue package was sufficiently large—more than \$3 billion—to provide the necessary political cover for the government’s reform efforts.<sup>7</sup> In general, large IMF loans attract international and domestic publicity and thereby provide a window of opportunity for govern-

ments to act.<sup>8</sup> For example, when modest-sized Uruguay received a whopping \$3 billion loan from the IMF in 2002, the government faced tremendous pressure from international investors and rating agencies to reform the economy and generate the foreign exchange necessary to service the debt. Smaller IMF rescue packages are less effective as political shields, because it is more difficult for governments to contribute their own unpopular reform commitments to programs that garner less public attention—especially when these programs contain fewer or less strenuous formal conditions.

We argue that political cover is a necessary but not sufficient condition for liberalization. The relaxation of capital controls often leads to a variety of disruptions, including spikes in unemployment, increases in income volatility, interest-rate increases, and banking instability (Brooks 2004; Eichengreen 1999; Wibbels 2006; Wihlborg and Willett 1997). These distributional costs could easily outweigh the economic benefits of financial liberalization. For this reason, we expect that a government’s decision to relax capital controls under an IMF program will reflect its capacity and commitment to compensate domestic groups that are harmed by liberalization. Government spending on welfare—including pensions, family allowances, and other redistributive fiscal programs—mitigates the negative impact of liberalization. For example, liberalization can lead to a sudden inflow of capital and a subsequent appreciation of the real exchange rate, which could translate into higher prices for domestic consumers and declining profits for exporters. A government-supplied safety net can help to offset the resulting volatility in household income and attenuate domestic opposition. Moreover, when a system of welfare expenditures is firmly in place, a government’s promises to compensate the losers from liberalization will be credible *ex ante*. As Brooks notes, “where social insurance mechanisms are underfunded, however, governments will have scarce means to ameliorate the social costs of financial openness, and thus may risk a powerful social backlash and loss of political support unless capital account liberalization is attenuated” (2004, 408). Indeed, we argue that welfare spending is a key enabling factor for the influence of the IMF.

We posit that the interaction between the IMF and a borrowing country unfolds as follows. First, a country

<sup>5</sup>See, e.g., “Economic Crisis Forcing Once Self-Reliant India to Seek Aid.” *New York Times*, June 29, 1991.

<sup>6</sup>*New York Times*, op cit.

<sup>7</sup>Rudra (2007) describes India as a “protective welfare state.” As discussed below, welfare provision is critical in prompting a government to initiate financial liberalization under the cover of an IMF program.

<sup>8</sup>An additional channel of influence, not explored in this article, is socialization of political elites by the IMF staff. See Chwieroth (2007b). While it is possible that socialization could intensify as a function of the magnitude of the stabilization program, it is likely that other IMF activities that are not correlated with such programs, including technical assistance missions, could offer a better conduit for the transmission of ideas.

experiences a balance-of-payments crisis for exogenous reasons and seeks assistance from the IMF. The IMF offers a stabilization program whose amount is determined in part by the magnitude of the borrowing country's financial troubles, but mostly by a variety of geopolitical and global financial factors, including the exposure of U.S. financial institutions to the country's markets, the composition of the country's debts, the availability of supplementary financing, and the country's extent of trade and finance with the "G-5" countries (see, e.g., Broz 2005; Broz and Hawes 2006; Copelovitch forthcoming; Gould 2003; Oatley and Yackee 2004; Stone 2008). In certain circumstances the IMF has provided loans that exceed the amount that borrowing countries are eligible to receive based on their "quotas," while at other times the IMF has been relatively stingy in its financial assistance. Copelovitch (forthcoming) notes that the correlation between IMF loan size and external debt as a percentage of GDP (a key measure of a country's financial difficulties) is in fact slightly *negative*. Moreover, repeat borrowers receive varying amounts of funding from the IMF over time, not necessarily in line with the severity of their funding shortages. The size of a loan, in short, is not a simple indicator of the magnitude of the country's current financial difficulties.

Regardless of its determinants, a loan from the IMF must be repaid. A large loan triggers not only a need for foreign capital to shore up the borrower's financial position, but also a heightened degree of attention from international actors and high expectations for policy reform. This environment provides an opportunity for governments to initiate reforms above and beyond those required by the IMF. For example, when Hungary received a \$1.6 billion stand-by arrangement in 1991, Hungarian policy makers seized upon the highly politicized environment to open the domestic banking sector to foreign direct investment and enact other reform measures that exceeded what the IMF had formally required (IMF 2005a). The Hungarian government, in short, wielded the burden of a sizeable loan from the IMF as a shield against interest groups that favored financial closure and used its letter of intent to commit to liberalization. But not all governments will seize the opportunity to enact additional reforms. Given the political cover of an IMF program, a government's response will reflect its domestic welfare system. Hungary, for example, had a substantial welfare system (with expenditures in excess of 15% of GDP) during the 1990s. In short, a large loan opens a window of opportunity for a borrowing government to enact unpopular reforms, and it creates its own incentives to attract foreign capital to help repay the loan; whether or not the government seizes the opportunity to liber-

alize depends on its capacity for offsetting the negative distributional consequences of financial openness.<sup>9</sup> The preceding discussion leads to our main hypothesis:

*H1:* IMF loans will have a positive effect on the level of capital account liberalization conditional upon the level of welfare spending in borrowing countries.

## Statistical Methodology

As mentioned earlier, the challenge in ascertaining the influence of the IMF on a government's policy choices is that an IMF program itself may be epiphenomenal: that is, the factors that lead a country to select into an IMF program may also determine its subsequent policy behavior. We also noted that participation of countries in IMF programs is not random and that countries select into IMF programs when they experience macroeconomic difficulties. Moreover, IMF loans are offered to nations only *after* they choose to participate in IMF programs. We therefore require a modeling strategy that accounts for countries' nonrandom participation in IMF programs. A typical strategy for controlling for selection bias is to use a Heckman selection model (e.g., Vreeland 2003). However, in addition to selection bias, we face two econometric challenges.

First, some scholars claim that geographic (i.e., spatial) proximity affects the diffusion of capital account liberalization because countries are influenced by the policy actions of neighboring countries (Brune and Guisinger 2007; Simmons and Elkins 2004). Tests reveal the presence of spatial dependence in financial liberalization across the countries in our sample (described below), and therefore it is imperative that we account for spatial dependence in our model.<sup>10</sup> Second, tests conducted on our data indicate that country participation in IMF programs exhibits regional clustering.<sup>11</sup> For example, many Latin American nations participated in IMF programs in the mid-1980s and mid-1990s; similarly, many Southeast Asian countries participated in IMF programs in the late 1990s. Since participation of countries in IMF programs is potentially

<sup>9</sup>On political "windows of opportunity" and capital account liberalization, see Wihlborg and Willett (1997).

<sup>10</sup>Baltagi, Bresson, and Pirotte's (2006) Lagrange Multiplier test for spatial autocorrelation rejects the null of *no* spatial autocorrelation for capital account liberalization in our sample.

<sup>11</sup>Kelejian and Prucha's (2001) modified Moran-I test for spatial autocorrelation in discrete choice models rejects the null of *no* spatial autocorrelation in IMF program participation.

characterized by clustering, we should control for this possibility as well to avoid bias.

To address these challenges, we estimate a spatial autoregressive errors sample selection model (hereafter SAE selection model) that specifies spatially autocorrelated disturbances in *both* the selection and outcome equations. This model is defined (see Flores-Lagunes and Schnier 2006) after dropping subscript  $t$  for time for notational convenience, as:

$$y_{1i}^* = \alpha_0 + x'_{1i}\alpha_1 + u_{1i}, \quad u_{1i} = \delta \sum_{j \neq i} c_{ij}u_{1j} + \varepsilon_{1i} \quad (1)$$

$$y_{1i} = \begin{cases} 1 & \text{if } y_{1i}^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

$$y_{2i}^* = \beta_0 + x'_{2i}\beta_1 + u_{2i}, \quad u_{2i} = \gamma \sum_{j \neq i} c_{ij}u_{2j} + \varepsilon_{2i} \quad (2)$$

Equation (1) is the selection equation in which the dichotomous dependent variable  $y_{1i} = 1$  indicates participation in an IMF program and takes the value of zero otherwise. The outcome equation (2) estimates the impact of the covariates on the degree of financial liberalization denoted as  $y_{2i}^*$ . Equations (1) and (2) exhibit spatial dependence in their error terms, as  $u_{1i}$  and  $u_{2i}$  depend on  $u_{1j}$  and  $u_{2j}$  through their location in space, as given by the spatial weights  $c_{ij} \in C$  (where  $C$  is the spatial weights matrix) and the respective spatial autoregressive parameters  $\delta$  and  $\gamma$ . We discuss the operationalization of the spatial weights in (1) and (2) below. Since  $u_{1i}$  incorporates  $\varepsilon_{1i}$ , while  $u_{2i}$  includes  $\varepsilon_{2i}$ , the models can be presented in reduced form as:<sup>12</sup>

$$y_{1i}^* = \alpha_0 + x'_{1i}\alpha_1 + \sum_j w_{ij}^1 \varepsilon_{1j} \quad (3)$$

$$y_{2i}^* = \alpha_0 + x'_{2i}\alpha_1 + \sum_j w_{ij}^2 \varepsilon_{2j} \quad (4)$$

where  $w_{ij}^1$  and  $w_{ij}^2$  are the elements of the inverse matrices  $(1 - \delta C)^{-1}$  and  $(1 - \gamma C)^{-1}$ .

Researchers suggest that a key component of the diffusion mechanism operates via geographic proximity (e.g., Franzese and Hays 2006). Because geographic proximity may be a driver of the diffusion of financial liberalization, we operationalize spatial contiguity as the inverse distance between states  $i$  and  $j$ , where  $c_{ij} = 1/d_{ij}$ . As the distance between  $i$  and  $j$  increases (decreases),  $c_{ij}$  decreases (increases), giving less (more) spatial weight to

<sup>12</sup>Note that  $\varepsilon_{1i}$  and  $\varepsilon_{2i}$ ,  $i = 1, \dots, N$  are *iid*  $N(0, \Sigma)$ . We use Klaauw and Koning's (2006) likelihood ratio test for the distributional assumption of bivariate normality between the selection and outcome equation in the SAE selection model. This test fails to reject the null of bivariate normality.

the state pair when  $i \neq j$ . We use a “minimum distance database” of the shortest distance between the two closest physical locations for every pair of independent polities in the world.<sup>13</sup> The results remain robust when using alternative measures of diffusion that are described below.

We adopt the Heckman procedure within a generalized method of moments (GMM) framework to estimate the statistical model in equations (1) and (2) (see Flores-Lagunes and Schnier 2006). Stated briefly, we estimate the selection equation, which predicts participation in IMF programs via a spatial probit model.<sup>14</sup> Using the estimates from the selection equation, we compute the “spatial adjusted” inverse Mills ratio (IMR),  $\hat{\lambda}_i$ , which is included in the model's outcome equation to correct for selection bias that may occur because of nonrandom participation of countries in IMF programs.<sup>15</sup> We include country fixed effects in the outcome equation to control for unobserved country-specific heterogeneity.<sup>16</sup>

## Sample and Dependent Variable

We construct a time-series cross-sectional (TSCS) dataset of 87 countries observed from 1975 to 2002 to test Hypothesis 1. The countries in our sample are listed in Table 1. We operationalize the dependent variable in the outcome equation, capital account liberalization, which is denoted as *capital liberalization*, using a recently developed continuous index by Chinn and Ito (2006). The index is derived from four indicators reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*: the existence of multiple exchange rates, restrictions on capital account transactions, restrictions on current account transactions, and requirements to surrender export proceeds. The resulting measure is a 0–5

<sup>13</sup>Gleditsch and Ward (2006). The database records the shortest distance in kilometers between points on the outer boundaries for two polities, regardless of whether the states are separated by land or sea. We update their database for the countries in our sample until 2002.

<sup>14</sup>To check robustness of our results, we estimate *dynamic* spatial probit models of IMF participation with random effects as well as the spatial probit model with random effects to generate  $\hat{\lambda}_i$ . Our results do not change when we use these alternative models.

<sup>15</sup> $\hat{\lambda}_i$  is the spatial adjusted IMR since it accounts for nonrandom participation in IMF programs *and* clustering effects associated with program participation. Technically,  $\hat{\lambda}_i$  provides the hazard rates for IMF participants and nonparticipants and is included in the outcome equation to correct for selection.

<sup>16</sup>We also estimated the outcome equation with fixed effects for time. Doing so did not alter the results, and thus the time dummies are dropped from the specification.

**TABLE 1 List of Countries in Sample**

Argentina	Dom. Republic	Ireland	New Zealand	Switzerland
Australia	Ecuador	Israel	Nicaragua	Syria
Austria	Egypt	Italy	Nigeria	Tanzania
Bangladesh	El Salvador	Jamaica	Norway	Thailand
Belgium	Fiji	Japan	Pakistan	Trinidad and Tobago
Bolivia	Finland	Jordan	Panama	Tunisia
Botswana	France	Kenya	Paraguay	Turkey
Brazil	Germany	Kuwait	Peru	Uganda
Bulgaria	Ghana	Lesotho	Philippines	Ukraine
Cameroon	Greece	Liberia	Poland	United Kingdom
Canada	Guatemala	Malawi	Portugal	United States
Chile	Guyana	Malaysia	Romania	Uruguay
China	Haiti	Mali	Russia	Venezuela
Colombia	Honduras	Mauritius	Singapore	Zambia
Costa Rica	Hungary	Mexico	South Africa	Zimbabwe
Cyprus	India	Morocco	Spain	
Czech Republic	Indonesia	Nepal	Sri Lanka	
Denmark	Iran	Netherlands	Sweden	

continuous index for all country-years in our sample.<sup>17</sup> Higher values indicate greater degrees of liberalization.<sup>18</sup> Although the Chinn and Ito (2006) index is widely used by scholars to measure capital account openness (e.g., Brooks and Kurtz 2007), we checked the robustness of our results by employing two alternative measures of the dependent variable. These robustness test results are discussed in the next section.

We also require a dichotomous measure for the incidence of an IMF program, which constitutes the dependent variable in the selection equation. The IMF provides loans to countries under eight main types of stabilization programs: Stand-by and extended stand-by arrangement, Supplementary Reserve Facility, Extended Fund Facility, Contingency Funding Facility, Buffer Stock Funding Facility, Currency Stabilization Facility, Structural Adjustment Fund, and the Poverty Reduction and Growth Facility.<sup>19</sup> We thus code the dependent variable in the selection equation, *IMF Program*, as 1 when the IMF offers loans under any of these eight types of programs, and 0 otherwise. Data for *IMF Program* are from Barro and

Lee (2002), Hutchison (2001), IMF (2004), and Vreeland (2003).

### Independent and Control Variables

The first independent variable, *IMF Loan*, is operationalized as the IMF's loan amount as a percent of the borrowing country's GDP. Data for this variable come from World Bank (2006, 2007) and IMF (2004, 2006, 2007) and include each of the eight types of IMF programs listed above. The second independent variable is the level of welfare spending, *Welfare*, which we operationalize as government expenditure on social security and welfare as a percentage of GDP.<sup>20</sup> Data for this variable come from World Bank (2007) and IMF (2007). We expect that IMF loans will have a positive effect on the level of capital account liberalization conditional upon the level of welfare spending in borrowing countries. To test this hypothesis, we interact *IMF Loan* with *Welfare* and introduce the

<sup>17</sup>The original index ranges from  $-2.66$  to  $2.66$ . We rescaled this measure on a continuous 0–5 scale to aid interpretation of coefficient estimates.

<sup>18</sup>The Im, Pesaran, and Shin (2003) test rejects the null of nonstationarity for the Chinn and Ito (2006) measure.

<sup>19</sup>Our results are unchanged if we eliminate the Poverty Reduction and Growth Facility programs—which are extended to countries with limited access to international credit markets—from the sample.

<sup>20</sup>Following the IMF and World Bank's definition, "Social Security" consists of income transfers and benefits provided in cash or in kind for unemployment, old age, invalidity, or death, and for survivors, sickness and maternity, family allowance, work injury, and health care. Spending on "welfare affairs and services" is defined as assistance delivered to clients with special needs such as the young, the old, or the disabled. We also supplemented data for the *Welfare* variable from the United Nations (1993, 2006). Using central government expenditure rather than GDP as the denominator does not alter our results. For a discussion of the limitations of welfare data in developing countries, see Rudra (2007).

interaction term  $IMF\ Loan \times Welfare$  as well as its individual components in the outcome equation. We expect that the coefficient of the interaction term will be positive.

We include several control variables in the selection and outcome equations. We suggested earlier that countries that experience serious macroeconomic problems are more likely to participate in IMF programs. We thus include three macroeconomic variables in the selection equation. First, we include *Output Loss* measured as the magnitude of growth contraction relative to the underlying growth trend where a Hodrick-Prescott filter was used to estimate the underlying growth trend.<sup>21</sup> This measure is commonly used in the financial economics literature (see Boyd, Sungkyu, and Smith 2005). Second, we include the dummy variable *Banking Crisis* which equals 1 if the country is experiencing a systemic banking crisis and zero otherwise; this variable is based on Dell’Ariccia, Detragiache, and Rajan’s (2008) operationalization of systemic banking crises as situations where nonperforming loans reach at least 10% of total financial assets and when emergency measures—such as bank holidays, deposit freezes, etc.—are taken to assist the banking system.<sup>22</sup> Third, we include the variable *Terms of Trade Shock* measured for each country-year in the selection equation.<sup>23</sup> Terms of trade shocks may engender macroeconomic imbalances that encourage governments to self-select into IMF programs.

We also incorporate several control variables identified in the existing literature on the determinants of IMF program participation. First, we include the dummy variable *Lagged IMF Program* (Bird 2003; Vreeland 2003). We also include the following economic variables in the selection equation: *Log GDP per capita*, *Current Account*, *Log Reserves*, and *Log Inflation*.<sup>24</sup> Following Vreeland’s (2004) suggestion that veto players are positively associated with IMF program participation, we incorporate the measure *Veto Players*, which is drawn from the “Checks” variable in World Bank (2008).

Several political variables are included in the outcome equation to capture societal demands for liberalization and institutional constraints on policy makers. First,

<sup>21</sup>Data for operationalizing *Output Loss* are taken from IMF (2007) and World Bank (2007).

<sup>22</sup>We used data from Beck, Demirgüç-Kunt, and Levine (2006) and Dell’Ariccia, Detragiache, and Rajan (2008) to operationalize *Banking Crisis*.

<sup>23</sup>*Terms of Trade Shock* is measured as trade-weighted average export prices divided by trade-weighted average import prices for each country-year. We construct this measure based on data drawn from IMF (2007) and World Bank (2007).

<sup>24</sup>These variables are taken from IMF (2006, 2007), World Bank (2006, 2007), and the *Penn World Tables* (2007).

some scholars suggest that right-leaning governments are more likely to pursue open capital accounts than left-leaning governments (Brooks and Kurtz 2007; Kastner and Rector 2005). We therefore include a measure of government *Partisanship* from World Bank (2008) that codes the occupant of the executive’s office as either left, center, or right. Scholars also suggest that a relatively large and well-developed financial sector may put pressure on the government to liberalize the capital account (Frieden 1991; Sobel 1994). We thus include a measure of the size of the banking sector (*Banking Sector*), which is operationalized as deposit money bank assets as a share of GDP. Data for this variable are from Barth, Caprio, and Levine (2003) and Bank for International Settlements (2006). Finally, we control for *Veto Players* (Kastner and Rector 2003) and the level of *Democracy* (Marshall and Jaggers 2007).

With respect to economic controls in the outcome equation, we follow extant studies and control for *Log GDP* and the log of *GDP per capita*. We introduce the lag of the dependent variable in the outcome equation as well as controls for *Current Account*, *Trade Openness*, and *Budget Balance*, all measured as a percentage of GDP. Since it is possible to obtain spurious correlations between data series that are trended, we include a linear *Time Trend* in the outcome equation. Existing research postulates a regional diffusion effect in which countries emulate capital account reforms adopted by neighboring nations (e.g., Simmons and Elkins 2004). We account for these dynamics in the outcome equation by controlling for the gap between the lag of the maximum level of *capital liberalization* in each region and the lagged level of each country’s level of capital account openness, which we label *Emulation*.<sup>25</sup> We also control for other mechanisms of diffusion and conduct a battery of robustness checks; these results are presented after our main results.

## Results

We first present the estimates from the selection equation and then discuss the results from the outcome equation. Table 2 reports the selection equation results in which the dependent variable is the *IMF program* dummy. As indicated in the table, the specification for each selection equation performs well, correctly predicting about 90% of all observations in the sample. As expected, previous

<sup>25</sup>The correlation between *Emulation* and the measure that we employ to operationalize the elements of the spatial weights matrix ( $c_{ij}$ ) in our model is weak (0.29) and statistically insignificant.

TABLE 2 Selection Equation Results: Dependent Variable, IMF Program

	Column A <i>Selection Equation Results for Model 1 in Table 3</i>	Column B <i>Selection Equation Results for Model 2 in Table 3</i>	Column C <i>Selection Eq. Results for Models 3 and 5 in Table 3</i>	Column D <i>Selection Eq. Results for Models 4 and 6 in Table 3</i>
Veto Players	.060 (.062)	.024 (.029)	.068 (.074)	.022 (.032)
Log Reserves	-.125*** (.029)	-.103*** (.031)	-.122*** (.041)	-.125*** (.032)
Log Inflation	.024 (.019)	.035 (.027)	.023 (.020)	.027 (.028)
Log GDP per capita	-.051*** (.017)	-.030*** (.011)	-.035*** (.011)	-.028*** (.010)
Current Account	-.065 (.092)	.018 (.021)	-.057 (.088)	.016 (.024)
Output Loss	.028** (.010)	.038*** (.011)	.025** (.011)	.036*** (.012)
Terms of Trade Shock	.014 (.017)	.008 (.014)	.020 (.077)	.009 (.018)
Banking Crisis	.056*** (.011)	.058*** (.022)	.054** (.016)	.051*** (.016)
Banking sector			-.059 (.042)	-.024 (.028)
Lagged IMF program	.082*** (.017)	.115*** (.043)	.057*** (.010)	.095*** (.031)
GDP growth rate			-.049 (.038)	-.022 (.045)
Constant	-.590*** (.071)	-.388*** (.052)	-.547*** (.062)	-.424** (.061)
$\hat{\delta}$	.032*** (.009)	.061*** (.023)	.048*** (.022)	.057*** (.021)
% predicted	90%	91%	88%	90%
LR $\chi^2$	70.22	62.05	78.16	67.09

Notes: \*\*\*, \*\*, \*: 1%, 5%, and 10% levels of significance.

participation in IMF programs is the best predictor of current participation in IMF programs. Our expectation that countries are more likely to participate in IMF programs when they experience serious domestic macroeconomic problems is also borne out by the results in the selection equation since *Banking Crisis* and *Output Loss* are consistently positive and significant, while *Terms of Trade Shock* is weakly significant. Other factors with statistically significant effects include the log of *GDP per capita*, *Log Reserves*, and *Log Inflation*. However, *Current Account* and *Veto Players* do not statistically influence IMF participation. The estimate of the spatial autoregressive error parameter  $\hat{\delta}$  in each selection equation is positive and statistically significant, indicating spatial dependence with respect to IMF program participation.

Model 1 in Table 3 presents the results from the outcome equation where the dependent variable is *Capital Liberalization*. The coefficient of the interaction term *IMF Loan*  $\times$  *Welfare* is positive and highly significant in model 1, which includes country fixed effects. Thus, as predicted in Hypothesis 1, it is the interaction of these two variables that statistically matters for capital account liberalization. We also estimated the model on a sample that excludes 21 advanced industrial OECD democracies since IMF loans are provided primarily to developing countries. The outcome equation results from this exercise for 67 developing countries are reported in Table 3 model 2, which includes fixed effects. The estimate of the interaction term *IMF Loan*  $\times$  *Welfare* remains positive and highly significant at the 1% level in the outcome equation.

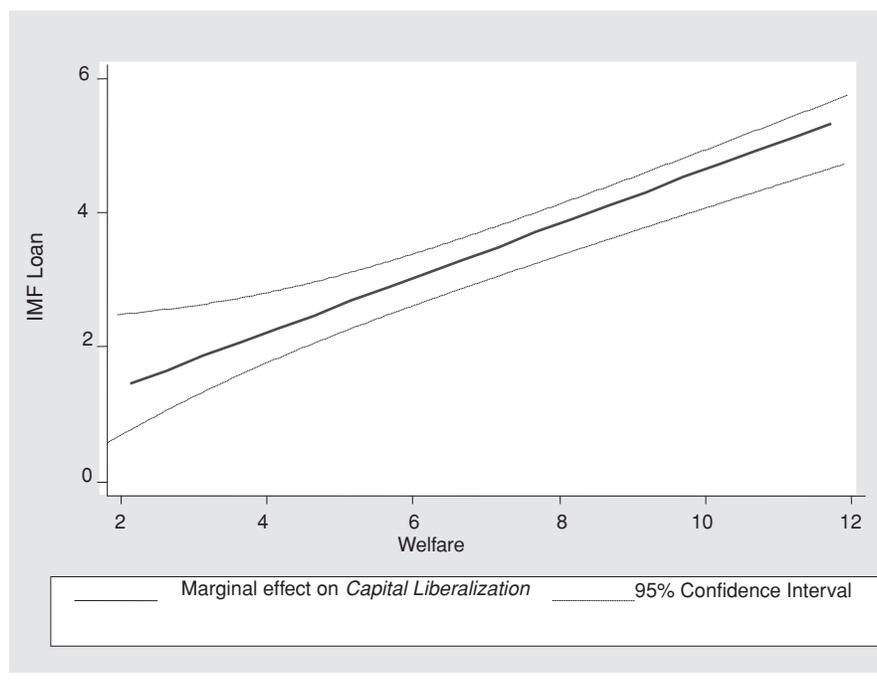
TABLE 3 Outcome Equation Results of SAE Selection Model ( $c_{ij} = 1/d_{ij}$  in All the Models)

	Full Sample Model 1	Developing Model 2	Full Sample Model 3	Developing Model 4	Full Sample Model 5 <sup>a</sup>	Developing Model 6 <sup>a</sup>
Log GDP per capita	.267*** (.071)	.128*** (.035)	.229*** (.052)	.096*** (.033)	.036*** (.012)	.029*** (.010)
Trade openness	.344*** (.085)	.202** (.103)	.330*** (.083)	.187*** (.045)	.039*** (.018)	.020*** (.005)
Current Account	.163 (.180)	-.086 (.096)	.155 (.192)	-.067 (.088)	-.062 (.012)	-.021 (.015)
GDP growth rate			.046 (.035)	.063 (.088)	.038 (.016)	.055 (.086)
Log GDP	.177 (.125)	.080 (.094)	.173 (.182)	.071 (.090)	-.203 (.184)	-.164 (.128)
Emulation	.045* (.026)	.060* (.034)	.045* (.027)	.043* (.023)	.014 (.011)	.010 (.008)
Banking sector	.097 (.090)	-.065 (.070)	.094 (.091)	-.066 (.054)	.050 (.032)	-.036 (.054)
Budget balance	.045* (.026)	.031* (.019)	.039 (.044)	.029 (.018)	.039 (.056)	.022* (.014)
Log Reserves			.028 (.077)	.022 (.055)	.046 (.035)	.063 (.088)
Log Inflation			.039 (.041)	-.012 (.008)	-.019 (.055)	-.027 (.048)
Lagged dependent variable	.226*** (.031)	.147*** (.030)	.197*** (.041)	.149*** (.054)	.180*** (.029)	.163*** (.027)
IMF Loan	.018 (.019)	.046 (.057)	.026 (.023)	.022 (.021)	.066 (.073)	.082 (.103)
IMF Loan × Welfare	.159*** (.041)	.244*** (.090)	.114*** (.036)	.197*** (.060)	.185*** (.056)	.232*** (.073)
Welfare	.265* (.152)	.114 (.126)	.196 (.141)	.102 (.179)	.127 (.148)	.101 (.156)
Democracy (Polity)	.112 (.088)	.077 (.096)	.094 (.079)	.055 (.086)	.033 (.030)	.024 (.026)
Veto Players	-.025* (.013)	-.034* (.019)	-.051* (.028)	-.032* (.018)	.070 (.085)	.077 (.041)
Partisanship	.033** (.015)	.047** (.021)	.025* (.014)	.027** (.011)	.048*** (.022)	.061*** (.023)
Time trend	.090*** (.030)	.068*** (.021)	.080*** (.029)	.063*** (.027)	.057* (.030)	.040* (.024)
Constant	-.715*** (.139)	-.634*** (.158)	-.529*** (.095)	-.608*** (.075)	-.342*** (.078)	-.257*** (.085)
$\hat{\gamma}$	.046* (.024)	.067* (.035)	.051* (.030)	.043* (.023)	.024* (.014)	.019* (.011)
$\hat{\lambda}_i$	.037* (.021)	.056** (.031)	.026* (.014)	.035* (.020)	.020** (.011)	.031** (.014)
Log Likelihood	-297.2	-341.2	-270.91	-214.36	-306.41	-324.51
$N$	1571	1105	1488	1029	1472	1018
Wald $\chi^2$	168.54	171.26	181.44	159.76	149.62	158.14

Notes: \*\*\*, \*\*, \*: 1%, 5%, and 10% levels of significance. Numbers in parentheses are Newey-West standard errors. The outcome equation in models 1–4 is estimated with country fixed effects that are not reported to save space.

<sup>a</sup>Models 5 and 6 employ an alternative dichotomous measure of the dependent variable based on the Chinn and Ito index. Since this dependent variable is dichotomous, we estimate the model as a Heckman probit selection model with spatial autoregressive errors in the selection and outcome equation as well as random effects in the outcome equation; we cannot include fixed effects in the outcome equation because it leads to the well-known “incidental parameters problem” (Neyman and Scott 1948). We do not report the estimate of  $\rho$  in the model to save space.

**FIGURE 2** Effect of *IMF Loan*  $\times$  *Welfare* on *Capital Liberalization* in Developing Countries



To gain a full appreciation of the impact of *IMF Loan*  $\times$  *Welfare* on capital account liberalization, we derive and analyze its substantive effect by using the results from the sample of developing countries in model 2 and the standard formula for computing the effect of interaction terms.<sup>26</sup> We proceed in two steps. First, we find that increasing the level of *IMF Loan* by one standard deviation above its mean, while holding its companion variable *Welfare* and the other variables at their respective means in the sample, increases the degree of capital account liberalization by a substantial 15.3%. This result is significant at the 95% confidence level. Second, we illustrate the substantive effect of *IMF Loan*  $\times$  *Welfare* in Figure 2, which displays the marginal effect and statistical significance of the *IMF Loan* variable over the range of values of the *Welfare* variable; this figure also indicates that the effect of the interaction term *IMF Loan*  $\times$  *Welfare* is statistically significant at the 95% confidence level.

Unlike the strong statistical support for our main hypothesis, the estimate of the variable *Democracy* is statis-

tically insignificant. The positive estimate of *Partisanship* is consistently significant in Table 3. This suggests that right-leaning governments tend to favor higher levels of capital account openness. The estimate of *Veto Players* is negative but weakly significant, which supports Kastner and Rector's (2003) finding in a smaller sample that veto players tend to reduce or block change of capital account policies that favor liberalization. This finding is also consistent with Chwioroth's (2007a) argument that more veto players provide greater voice to domestic opposition to financial reform.

The economic control variables, *Log GDP per capita* and *Trade Openness*, are significant and in the predicted direction while *Log GDP* is insignificant. The coefficient of *Budget Balance* is weakly significant in some models, while *Lag Capital Liberalization* is positive and highly significant. The estimate of *Emulation* and the spatial autoregressive parameter,  $\hat{\gamma}$ , are positive and weakly significant in all the models, providing tentative evidence of the diffusion of capital account liberalization. Furthermore, the estimate of the adjusted IMR parameter is also significant in the outcome equation of the estimated models, which suggests that it is appropriate to account for the nonrandom participation of countries in IMF programs via an SAE selection model to avoid selection bias problems.

<sup>26</sup>Since neither *IMF Loan* nor *Welfare* are in the selection equation, we can—according to Sigelman and Zeng (1999)—compute the marginal effect of *IMF Loan*  $\times$  *Welfare* from the outcome equation by using the formula required to compute the interactive effect of two continuous variables (see Brambor, Clark, and Golder 2006).

## Robustness Tests and Diagnostic Checks

For robustness tests we include the following additional controls: *Log Reserves*, *Log Inflation*, and *GDP growth rate* in the outcome equation; and *Banking Sector* and *GDP growth rate* in the selection equation. The last two columns in Table 2 report the results from the expanded selection equation for the full and developing countries sample, respectively. The estimates from the augmented outcome equation are reported in Table 3 for the full (model 3) and developing countries sample (model 4). Our main results remain robust.

We also estimated additional models for the full and developing countries samples after adding diffusion variables, including *Export Competition* and bilateral investment treaty partner policies, in the outcome equation.<sup>27</sup> We also included a currency crisis dummy<sup>28</sup> and three other controls that proxy for the economic interests of G-5 countries: the exposure of G-5 commercial banks to each borrowing country's market,<sup>29</sup> G-5 foreign aid commitments,<sup>30</sup> and voting affinity within the UN General Assembly between G-5 nations and borrowing countries.<sup>31</sup> We incorporated additional controls in the selection equation including the currency crisis dummy, *Partisanship*, *Budget Balance*, *Log Investment*, and *Debt Service* as a percentage of GDP. We do not report the results obtained after including these additional controls to save space, but our main results were unchanged.<sup>32</sup>

Due to the limitations of the Chinn and Ito index, we checked whether our results hold when we employ an alternative measure of the dependent variable.<sup>33</sup> We used a simple binary measure of the presence or absence

of capital controls, using the raw data from Chinn and Ito (2006). Results for the outcome equation indicate that the main results are substantively unchanged for the full and developing countries samples (Table 3, models 5 and 6).<sup>34</sup>

Diagnostic tests reveal that none of the models suffers from severe multicollinearity, serial correlation, or omitted variable bias, and that the residuals are normally distributed.<sup>35</sup> Also, out of an abundance of caution, we implement Hurlin and Venet's (2003) Granger causality test for panel data to assess the potential endogenous relationship between the dependent variable and each of the two independent variables in our empirical analysis: *IMF Loan* and *Welfare*. F-statistics from the Hurlin and Venet (2003) tests conducted for the full and developing countries sample indicate that *the* dependent variable does not statistically influence *IMF Loan* and *Welfare*.

We further address the possibility of endogeneity by testing Hypothesis 1 via a "system GMM" model that combines a regression in first-differences and a regression in levels; estimating the two equations (levels and differences) in a single system leads to consistent and efficient estimates (Blundell and Bond 1998). This approach corrects for potential endogeneity by using moment conditions to derive a set of valid instruments for the potentially endogenous explanatory variables. It also corrects for serial correlation, controls for country fixed effects, and accounts for heteroskedasticity via White's heteroskedasticity robust standard errors. Results from the system-GMM model that include all the variables in the outcome equation listed earlier (not reported to

<sup>27</sup>For a description of these two variables, see Simmons and Elkins (2004).

<sup>28</sup>Data are from Kamin, Schindler, and Samuel (2001) and IMF (2006).

<sup>29</sup>Operationalized as the log sum of G-5 commercial bank exposure, in millions of dollars, weighted by the relative voting power of the United States, United Kingdom, Japan, Germany, and France in the EB (see Copelovitch forthcoming). Data are from Bank for International Settlements (2005) and Barth, Caprio, and Levine (2006).

<sup>30</sup>Data are from OECD (2008).

<sup>31</sup>Gartzke (2006) and Copelovitch (forthcoming).

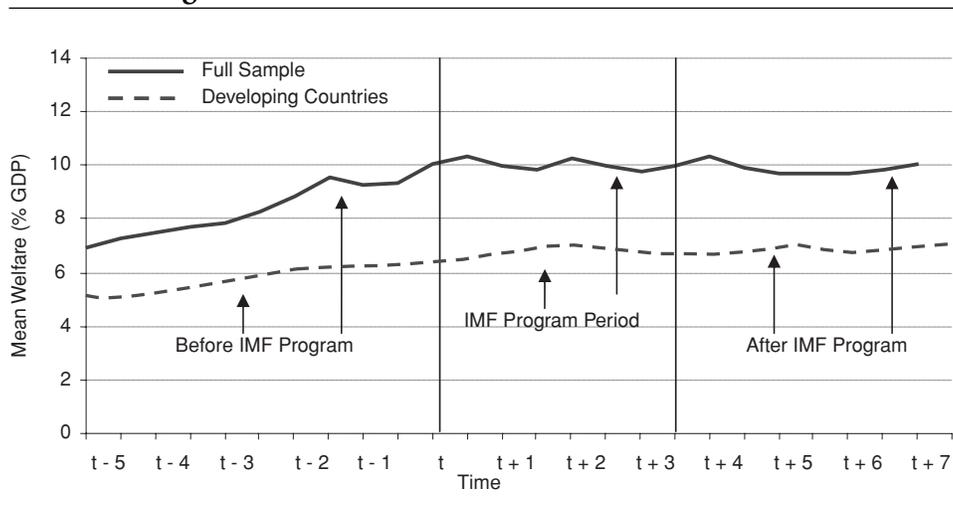
<sup>32</sup>Our main results are robust to using directed dyad trade-flow shares of country  $j$  in country  $i$ 's total, instead of using the inverse distance between all states  $i$  and  $j$ , for operationalizing the cell entries in the spatial weights matrix of the SAE selection model.

<sup>33</sup>The Chinn and Ito index is sluggish in that restrictions on capital account transactions (one of four elements of the index) are averaged over the current period and the prior four years.

<sup>34</sup>Our main results are also robust to using Quinn's (1997, 2003) capital account liberalization measure, available for 80 out of 87 countries in our sample from 1975 to 1999.

<sup>35</sup>The largest and mean VIF values in the models are less than 10 and greater than 1 respectively; thus multicollinearity is not a problem. To assess for serial correlation, we first plotted the correlograms and partial correlograms of the residuals from the first stage (selection equation) and second stage (outcome equation) of each estimated model; we also checked the p-values of the autocorrelation function and partial autocorrelation function for the first lag as well as several additional lags of the residuals from the first-stage and second-stage equation of each estimated model. Results from this exercise reveal that the residuals do not suffer from serial correlation. Further, the Breusch-Godfrey LM test and Gourieroux, Monfort, and Trognon (1982) score test failed to reject the null of no serial correlation in the outcome and selection equations respectively. The RESET test shows that there is no omitted variable bias problem; the Jarque-Bera test shows that the residuals are distributed normally. Tests indicate that neither *IMF Loan* nor *Welfare* is statistically correlated with the remaining control variables in the selection and outcome equation. Finally, diagnostic tests strongly establish the validity of the exclusion restrictions parameters in all the estimated SAE selection models.

**FIGURE 3 Average Welfare Spending Before, During, and After an IMF Program**



save space) confirm our main findings.<sup>36</sup> Finally, we explored the possibility that governments—especially right-leaning governments—could use the cover of an IMF program to reduce their current welfare expenditures.<sup>37</sup> Figure 3, which depicts average welfare spending in the years before, during, and after an IMF program, provides no support for this hypothesis.<sup>38</sup>

## Conclusion

How can we explain the timing and extent of capital account liberalization since the 1970s? We offer a nuanced argument about the interactive impact of IMF stabilization programs and domestic welfare expenditures. Substantial loans from the IMF provide a window of opportunity for policy makers to enact liberalizing reforms with negative distributional consequences; an existing system of substantial welfare expenditures enables policy makers to seize this opportunity. Our analytical framework reflects the exhortation by Martin and Simmons to explore the effects of international institutions conditional upon domestic considerations; in particular, they argue

that scholars should “move toward genuinely interactive theories of domestic politics and international institutions” (1998, 749). Results from a variety of statistical models provide robust evidence of the interactive impact of IMF stabilization programs and welfare expenditures on capital account liberalization.

Researchers have made substantial progress in addressing selection bias when evaluating the impact of IMF programs (Nooruddin and Simmons 2006; Vreeland 2003). However, prior scholarship underestimates the possibility that country participation in IMF programs displays clustering—a condition that should be accounted for when estimating the IMF’s impact on domestic policies. We use a novel statistical estimator, the spatial autoregressive error sample selection model, which accounts for these spatial effects as well as selection bias and the influence of diffusion on capital account liberalization.

Two main policy implications emerge from this study. First, our results suggest that governments that publicly provide compensation to domestic groups that experience income shocks have more agency to implement capital account reforms. This finding contributes to the debate about the degree of complementarity or tension between the size of the welfare state and the pressures from global markets (see, e.g., Burgoon 2001; Kaufman and Segura-Ubiergo 2001; Rickard 2008; Rodrik 1998; Rudra 2002; Walter forthcoming; Wibbels 2006). The evidence presented in this study confirms the findings in Brooks (2004) that higher welfare spending facilitates globalization by enhancing the political feasibility of policy reforms.

<sup>36</sup>Results available from the authors by request.

<sup>37</sup>For a discussion of the tension between openness to the global economy and welfare spending, see Rudra (2002) and Wibbels (2006). On the IMF and reductions in government spending, see Nooruddin and Simmons (2006).

<sup>38</sup>We also performed a more rigorous test using an SAE selection model with welfare spending as the dependent variable in the outcome equation. The interaction between *IMF Loan* and *Partisanship* (measured from a left to right scale) was not statistically significant.

Second, our results suggest that the IMF does not implement a “one size fits all” approach to capital account liberalization in borrowing countries, contrary to the assertions of IMF critics. In fact, it appears that governments use the IMF as political cover to enact reforms that would otherwise be politically costly. Scholars and pundits who seek to reform the IMF should consider the organization’s role as an enabler of capital account reform from the bottom up, rather than a top-down enforcer of liberalization.

Notwithstanding the implications of this study, more work needs to be done to fully comprehend the link between IMF loans, domestic politics in program recipient nations, and policy liberalization. For instance, valuable theoretical insights may be gained from analyzing how bargaining between domestic groups and a program participating government under the shadow of IMF loans may affect the prospects for capital account liberalization. The research presented here may also be extended to explore whether the interaction of IMF loans and welfare spending affects other issue areas, such as privatization of state-owned banks and equity market liberalization. We hope that this study spurs future research on how policy instruments used by international institutions interact with domestic interests and institutions to influence government policy outcomes.

## References

- Abdelal, Rawi. 2007. *Capital Rules: The Construction of Global Finance*. Cambridge, MA: Harvard University Press.
- Abiad, Abdul, and Ashoka Mody. 2005. “Financial Reform: What Shakes It? What Shapes It?” *American Economic Review* 95(1): 66–88.
- Baltagi, Badi H., Georges Bresson, and Alain Pirotte. 2006. “Joint LM Test for Homoskedasticity in a One-way Error Component Model.” *Journal of Econometrics* 127(2): 401–17.
- Bank for International Settlements. 2006. *Consolidated International Banking Statistics Database*. Basel, Switzerland: BIS.
- Barro, Robert J., and Jong-Wha Lee. 2002. “IMF Programs: Who Is Chosen and What Are the Effects?” NBER Working Paper 8951. Cambridge, MA.
- Barth, James R., Gerard Caprio Jr., and Ross Levine. 2006. *Rethinking Bank Regulation: Till Angels Govern*. Cambridge: Cambridge University Press.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. 2006. “Bank Concentration, Competition and Crises: First Results.” *Journal of Finance* 30(5): 1581–1603.
- Bird, Graham. 2003. “Restructuring the IMF’s Lending Facilities.” *The World Economy* 26(2): 229–45.
- Blundell, Richard W., and Stephen R. Bond. 1998. “Initial Conditions and Moment Restrictions in Dynamic Panel Data Models.” *Journal of Econometrics* 87(1): 115–43.
- Boyd, John H., K. Sungkyu, and B. Smith. 2005. “The Real Output Losses Associated with Modern Banking Crises.” *Journal of Money, Credit, and Banking* 37(6): 977–99.
- Brambor, Thomas, William Clark, and Matt Golder. 2006. “Understanding Interaction Models: Improving Empirical Analyses.” *Political Analysis* 14(1): 63–82.
- Brooks, Sarah M. 2004. “Explaining Capital Account Liberalization in Latin America.” *World Politics* 56(3): 389–430.
- Brooks, Sarah M., and Marcus J. Kurtz. 2007. “Capital, Trade, and the Political Economies of Reform.” *American Journal of Political Science* 51(4): 703–20.
- Broz, Lawrence J. 2005. “Congressional Politics of International Financial Rescues.” *American Journal of Political Science* 49(3): 479–96.
- Broz, Lawrence J., and Michael Brewster Hawes. 2006. “Congressional Politics of Financing the International Monetary Fund.” *International Organization* 60(2): 367–99.
- Brune, Nancy, and Alexandra Guisinger. 2007. “Myth or Reality? The Diffusion of Financial Liberalization in the Developing World.” Unpublished manuscript. University of Notre Dame.
- Burgoon, Brian. 2001. “Globalization and Welfare Compensation: Disentangling the Ties That Bind.” *International Organization* 55(3): 509–51.
- Chinn, Menzie, and Hiro Ito. 2006. “What Matters for Financial Development: Capital Controls, Institutions, and Interactions.” *Journal of Development Economics* 81(1): 163–92.
- Chwiroth, Jeffrey M. 2005. “U.S. Policy, IMF Financing Arrangements, and the Coercive Diffusion of Capital Account Liberalization to Emerging Markets.” European University Institute Working Paper No. 2005/06.
- Chwiroth, Jeffrey M. 2007a. “Neoliberal Economists and Capital Account Liberalization in Emerging Markets.” *International Organization* 61(2): 443–63.
- Chwiroth, Jeffrey M. 2007b. “Testing and Measuring the Role of Ideas: The Case of Neoliberalism in the International Monetary Fund.” *International Studies Quarterly* 51(1): 5–30.
- Chwiroth, Jeffrey M. 2008. “Normative Change ‘From Within’: The International Monetary Fund’s Approach to Capital Account Liberalization.” *International Studies Quarterly* 52(1): 129–58.
- Copelovitch, Mark S. Forthcoming. “Master or Servant? Common Agency and the Political Economy of IMF Lending.” *International Studies Quarterly*.
- Dell’Ariccia, Giovanni, Enrica Detragiache, and Raghuram Rajan. 2008. “The Real Effect of Banking Crises.” *Journal of Financial Intermediation* 17(1): 89–112.
- Eichengreen, Barry. 1999. *Toward a New International Financial Architecture*. Washington, DC: Institute for International Economics.
- Flores-Lagunes, A., and K. E. Schnier. 2006. Estimation of Sample Selection Models with Spatial Dependence.” Unpublished manuscript. University of Florida.
- Flores-Lagunes, Alfonso, and Kurt E. Schnier. 2006. “Estimation of Sample Selection Models with Spatial Dependence.” Unpublished manuscript. University of Florida.

- Franzese, Robert J. Jr., and Jude C. Hays. 2006. "Strategic Interaction among EU Governments in Active-Labor-Market Policymaking: Subsidiarity and Policy Coordination under the European Employment Strategy." *European Union Politics* 7(2): 167–89.
- Frieden, Jeffrey A. 1991. "Invested Interests: The Politics of National Economic Policies in a World of Global Finance." *International Organization* 45(4): 425–51.
- Frieden, Jeffrey A., and Ronald Rogowski. 1996. "The Impact of the International Economy on National Policies: An Analytical Overview." In *Internationalization and Domestic Politics*, ed. Robert O. Keohane and Helen V. Milner. New York: Cambridge University Press, 25–47.
- Garrett, Geoffrey, Nancy Brune, Alexandra Guisinger, and Jason Sorens. 2001. "The Political Economy of Capital Account Liberalization." Paper presented at the annual meeting of the American Political Science Association, San Francisco.
- Gartzke, Erik. 2006. *The Affinity of Nations Index, 1946–2002*. Version 4.0, Columbia University.
- Gleditsch, Kristian S., and Michael D. Ward. 2006. "Diffusion and the International Context of Democratization." *International Organization* 60(4): 911–33.
- Goodman, John, and Louis Pauly. 1993. "The Obsolescence of Capital Controls? Economic Management in an Age of Global Markets." *World Politics* 46(1): 50–82.
- Gould, Erica. 2003. *Money Talks: The International Monetary Fund, Conditionality, and Supplementary Financiers*. Stanford, CA: Stanford University Press.
- Gourieroux, Christian, Alain Monfort, and Alain Trognon. 1982. "Estimation and Test in Probit Models with Serial Correlation." In *Alternative Approaches to Time Series Analysis*, ed. J. P. Florens, M. Mouchart, J. P. Raouit, and L. Simar. Bruxelles: des Facultes Universitaires, 169–209.
- Haggard, Stephan. 1985. "The Politics of Stabilization: Lessons from the IMF's Extended Fund Facility." *International Organization* 39(3): 505–34.
- Haggard, Stephan. 1995. *Developing Nations and the Politics of Global Integration*. Washington, DC: Brookings Institution Press.
- Haggard, Stephan, and Sylvia Maxfield. 1996. "The Political Economy of Financial Internationalization in the Developing World." *International Organization* 50(1): 35–68.
- Hurlin, Christophe, and Baptiste Venet. 2003. "Granger Causality Tests in Panel Data Models with Fixed Coefficients." Unpublished manuscript. University of Paris IX.
- Hutchison, Michael. 2001. "A Cure Worse Than the Disease? Currency Crises and the Output Costs of IMF-Supported Stabilization Programs." NBER Working Paper W8305.
- Im, Kyung So, M. Hashem Pesaran, and Yongcheol Shin. 2003. "Testing for Unit Roots in Heterogeneous Panels." *Journal of Econometrics* 115(1): 53–74.
- International Monetary Fund. 1995. "Capital Account Convertibility: Review of Experience and Implications for IMF Policies." Occasional Paper no. 131. Washington, DC: IMF.
- International Monetary Fund. 2002. "Capital Account Liberalization and Financial Sector Stability." Occasional Paper no. 211. Washington, DC: IMF.
- International Monetary Fund. 2004. *IMF Annual Reports, 1975–2004*. Washington, DC: IMF.
- International Monetary Fund. 2005a. Independent Evaluation Office: "Report on the Evaluation of the IMF's Approach to Capital Account Liberalization." Washington, DC: IMF.
- International Monetary Fund. 2005b. "Evaluation of the Technical Assistance Provided by the International Monetary Fund." Washington DC: IMF.
- International Monetary Fund. 2006. *Government Finance Statistics* CD and Yearbook (various years). Washington, DC.
- International Monetary Fund. 2007. *International Financial Statistics* CD and Yearbook (various years). Washington, DC.
- Kamin, Steven M., John W. Schindler, and Shawna L. Samuel. 2001. "The Contribution of Domestic and External Factors to Emerging Market Devaluation Crises." Federal Reserve Board, International Finance Discussion Paper 2001/711.
- Kastner, Scott L., and Chad Rector. 2003. "International Regimes, Domestic Veto-Players, and Capital Controls Policy Stability." *International Studies Quarterly* 47(1): 1–22.
- Kastner, Scott L., and Chad Rector. 2005. "Partisanship and the Path to Financial Openness." *Comparative Political Studies* 38(5): 484–506.
- Kaufman, Robert R., and Alex Segura-Ubiergo. 2001. "Globalization, Domestic Politics and Social Spending in Latin America: A Time-Series Cross-Section Analysis." *World Politics* 53(4): 553–87.
- Kelejian, Harry H., and Ingmar R. Prucha. 2001. "On the Asymptotic Distribution of the Moran I Test Statistic with Applications." *Journal of Econometrics* 104(2): 219–57.
- Klaauw, Bas Van Der, and Ruud H. Koning. 2003. "Testing the Normality Assumption in the Sample Selection Model with an Application to Travel Demand." *Journal of Business Economics and Statistics* 21(1): 31–42.
- Leblang, David A. 1997. "Domestic and Systemic Determinants of Capital Controls in the Developed and Developing World." *International Studies Quarterly* 41(3): 435–54.
- Li, Quan, and Dale Smith. 2002a. "The Dilemma of Financial Liberalization: State Autonomy and Societal Demands." *Journal of Politics* 64(3): 764–90.
- Li, Quan, and Dale Smith. 2002b. "Testing Alternative Models of Capital Control Liberalization." *Review of Policy Research* 19(1): 28–52.
- Marshall, Monty G., and Keith Jagers. 2007. Polity IV Project: Political Regime Characteristics and Transitions, 1800–2007. Center for International Development and Conflict Management, University of Maryland.
- Martin, Lisa L., and Beth A. Simmons. 1998. "Theories and Empirical Studies of International Institutions." *International Organization* 52(4): 729–57.
- Neyman, J., and E. Scott. 1948. "Consistent Estimates Based On Partially Consistent Observations." *Econometrica* 16(1): 1–32.
- Nooruddin, Irfan, and Joel W. Simmons. 2006. "The Politics of Hard Choices: IMF Programs and Government Spending." *International Organization* 60(4): 1001–33.
- Oatley, Thomas, and Jason Yackee. 2004. "American Interests and IMF Lending." *International Politics* 41(3): 415–29.
- OECD. 2008. *Official Development Assistance Database*. Paris. <http://www.oecd.org/document/>.
- Penn World Tables. 2007. *International Comparisons of Production, Income and Prices*. 6.2. University of Pennsylvania.

- Pevehouse, Jon. 2005. *Democracy from Above: Regional Organizations and Democratization*. New York: Cambridge University Press.
- Quinn, Dennis P. 1997. "The Correlates of Change in International Financial Regulation." *American Political Science Review* 91(3): 531–51.
- Quinn, Dennis P. 2003. "Capital Account Liberalization and Financial Globalization, 1890–1999: A Synoptic View." *International Journal of Finance and Economics* 8(3): 189–204.
- Quinn, Dennis P., and Carla Inclán. 1997. "The Origins of Financial Openness: A Study of Current and Capital Account Liberalization." *American Journal of Political Science* 41(3): 771–813.
- Quinn, Dennis P., and A. Maria Toyoda. 2007. "Ideology and Voter Preferences as Determinants of Financial Globalization." *American Journal of Political Science* 51(2): 344–63.
- Quinn, Dennis P., and A. Maria Toyoda. 2008. "Does Capital Account Liberalization Lead to Growth?" *Review of Financial Studies* 21(3): 1403–49.
- Remmer, Karen. 1986. "The Politics of Economic Stabilization: IMF Standby Programs in Latin America, 1954–1984." *Comparative Politics* 19(1): 1–24.
- Rickard, Stephanie J. 2008. "Globalization and the Form of Government Spending: Further Disentangling the Ties That Bind." Paper presented at the annual ISA Convention, San Francisco.
- Rodrik, Dani. 1998. "Why Do More Open Economies Have Bigger Governments?" *Journal of Political Economy* 106(5): 997–1032.
- Rudra, Nita. 2002. "Globalization and the Decline of the Welfare State in Less-Developed Countries." *International Organization* 56(2): 411–45.
- Rudra, Nita. 2007. "Welfare States in Developing Countries: Unique or Universal?" *The Journal of Politics* 69(2): 378–96.
- Sigelman, Lee, and Langche Zeng. 1999. "Analyzing Censored and Sample-Selected Data with Tobit and Heckit Models." *Political Analysis* 8(2): 167–82.
- Simmons, Beth, and Zachary Elkins. 2004. "The Globalization of Liberalization: Policy Diffusion in the International Political Economy." *American Political Science Review* 98(1): 171–89.
- Sobel, Andrew C. 1994. *Domestic Choices, International Markets: Dismantling National Barriers and Liberalizing Securities Markets*. Ann Arbor: University of Michigan Press.
- Stiglitz, Joseph. 2003. *Globalization and Its Discontents*. New York: W. W. Norton.
- Stiglitz, Joseph. 2004. "Capital-Market Liberalization, Globalization, and the IMF." *Oxford Review of Economic Policy* 20(1): 57–71.
- Stone, Randall. 2008. "The Scope of IMF Conditionality." *International Organization* 62(4): 589–620.
- United Nations. 1993. *System of National Accounts*. New York: United Nations.
- United Nations. 2006. *National Accounts Statistics: Main Aggregates and Detailed Tables*. New York: United Nations.
- Vaubel, Roland. 1986. "A Public Choice Approach to International Organization." *Public Choice* 51(1): 39–57.
- Vreeland, James R. 2003. *The IMF and Economic Development*. Cambridge: Cambridge University Press.
- Vreeland, James R. 2004. "The International and Domestic Politics of IMF Programs." Unpublished manuscript. Yale University.
- Walter, Stefanie. Forthcoming. "Globalization and the Welfare State: Testing the Microfoundations of the Compensation Hypothesis." *International Studies Quarterly*.
- Wibbels, Erik. 2006. "Dependency Revisited: International Markets, Business Cycles, and Social Spending in the Developing World." *International Organization* 60(2): 433–68.
- Wihlborg, Clas, and Thomas Willett. 1997. "Capital Account Liberalization and Policy Incentives: An Endogenous View." In *Capital Controls in Emerging Economies*, ed. Christine Ries and Richard J. Sweeney. Boulder, CO: Westview Press, 111–36.
- Woods, Ngaire. 2006. *The Globalizers: The IMF, the World Bank, and Their Borrowers*. Ithaca, NY: Cornell Press.
- World Bank. 2006. *World Development Indicators* [CD-Rom]. Washington, DC.
- World Bank. 2007. *World Development Indicators* [CD-Rom]. Washington, DC.
- World Bank. 2008. *Database of Political Institutions*. Washington, DC: World Bank.