International
Studies
Quarterly

International Studies Quarterly (2010) **54**, 49–77

Master or Servant? Common Agency and the Political Economy of IMF Lending

Mark S. Copelovitch

University of Wisconsin, Madison

What explains the substantial variation in the International Monetary Fund's (IMF) lending policies over time and across cases? Some scholars argue that the IMF is the servant of the United States and other powerful member-states, while others contend that the Fund's professional staff acts independently in pursuit of its own bureaucratic interests. I argue that neither of these perspectives, on its own, fully and accurately explains IMF lending behavior. Rather, I propose a ''common agency'' theory of IMF policymaking, in which the Fund's largest shareholders—the G5 countries that exercise *de facto* control over the Executive Board (EB)—act collectively as its political principal. Using this framework, I argue that preference heterogeneity among G5 governments is a key determinant of variation in IMF loan size and conditionality. Under certain conditions, preference heterogeneity leads to either conflict or ''logrolling'' within the EB among the Fund's largest shareholders, while in others it creates scope for the IMF staff to exploit ''agency slack'' and increase its autonomy. Statistical analysis of an original data set of 197 nonconcessional IMF loans to 47 countries from 1984 to 2003 yields strong support for this framework and its empirical predictions. In clarifying the politics of IMF lending, the article sheds light on the merits of recent policy proposals to reform the Fund and its decision-making rules. More broadly, it furthers our understanding of delegation, agency, and the dynamics of policymaking within international organizations.

Over the last two decades, the International Monetary Fund (IMF) has played a critical role in global financial governance as the *de facto* international lender of last resort.[1] Through its lending, the IMF has provided emergency financing to numerous developing countries facing financial and currency crises or an inability to repay their international debt. Between 1984 and 2003, the IMF provided more than $400 billion in loans to countries facing balance of payments problems and financial crises. Many of these loans far exceeded the amount the borrowers were eligible to receive based on their allotted IMF ''quota,'' while others

Author's notes: Earlier versions of this paper were presented at the Conference on the Political Economy of International Organizations (PEIO), February 2008, Monte Verità, Switzerland, and the International Political Economy Society (IPES) Conference, Stanford University, November 2007. I thank Menzie Chinn, Jon Pevehouse, Tonya Putnam, Nadav Shelef, David Singer, Randall Stone, Jim Vreeland, the anonymous reviewers, and seminar participants at the University of Wisconsin, Madison for comments. I also thank the Graduate School and the Center for International Business Education and Research (CIBER) at the University of Wisconsin, Madison for research support.

[1] Strictly speaking, the IMF is not a true lender of last resort (LOLR), as it cannot issue its own currency and its loans do not meet Walter Bagehot's (2006 [1873]) classic criteria. Nonetheless, the IMF is the closest substitute to a LOLR in the current world economy (Kenen 2001).

were significantly smaller than their recipients' quota share.[2] Likewise, conditionality—the policy reforms a country must implement in exchange for IMF credit (Gold 1979)—varied widely over this period. Some IMF loans included numerous conditions, while others contained relatively few.

Despite an extensive empirical literature, scholars continue to disagree about the key factors explaining this variation in IMF lending (Joyce 2004; Steinwand and Stone 2008). Some argue that the Fund is a technocratic institution whose policies are determined solely by macroeconomic criteria and concerns about global financial stability. Others argue that IMF lending decisions are driven primarily by political factors, including the financial and geopolitical interests of the United States (Thacker 1999; Stone 2002, 2004, 2008; Oatley and Yackee 2004; Broz and Hawes 2006; Dreher and Jensen 2007), the structure of political institutions in borrower countries (Vreeland 2003, 2005), and/or the IMF staff's bureaucratic incentives (Vaubel 1991; Willett 2002; Dreher and Vaubel 2004b). Still others have argued that private international creditors influence the IMF independently, rather than as interest groups within the United States and other advanced industrialized countries (Gould 2003, 2006).

Thus, the empirical literature largely reinforces popular stereotypes of the IMF, which is described by various critics as an unaccountable technocracy, as a group of ''silk-suited dilettantes'' enjoying ''champagne and caviar at the expense of [American] taxpayers,''[3] and/or as the United States' ''lap dog.''[4] Quite clearly, the Fund cannot fill all of these roles simultaneously, yet the literature provides few tests of the conditions under which it conforms to each of these stereotypes. To what extent is the IMF the servant of its largest shareholders? How much autonomy does the Fund staff exercise? How and why does this vary over time and across cases? In this article, I seek to answer these questions and to explain the substantial variation in IMF loan size and conditionality. Drawing on principal–agent theories of international institutions, I treat IMF policymaking as a case of common agency in which the ''agent'' (the IMF staff) acts on behalf of a ''collective principal'' comprising the Fund's largest shareholders. I focus in particular on the ''G5'' countries (United States, United Kingdom, Germany, Japan, and France), as these governments collectively exercise *de facto* control over the IMFs ultimate decision-making body, the Executive Board (EB). Nevertheless, the Fund staff enjoys substantial autonomy, given its lead role in negotiating, designing, and proposing loans. Ultimately, both states and IMF bureaucrats exercise partial but incomplete authority over Fund lending.

This common agency framework yields two central hypotheses. First, it suggests that *preference heterogeneity* among the Fund's major shareholders will be a key determinant of variation in IMF loan size and conditionality. While the United States remains the Fund's largest and most influential shareholder, the other ''G5'' countries also exert substantial influence within the EB, and the degree to which these countries' interests coincide or conflict significantly influences IMF lending decisions. Second, the common agency framework predicts that IMF lending will vary based on the relative influence of G5 governments and the Fund staff in a particular case. When a borrower country is of substantial financial and/or geopolitical importance to the Fund's principals, G5 preference heterogeneity is a significant determinant of variation in IMF lending. However, when G5 interests are less intense, the staff's influence and autonomy are greater and Fund loans will more closely reflect its technocratic and/or

[2] The IMF operates much like a credit union: each member-state contributes to the Fund's quota resources and is eligible to borrow in proportion to these contributions.

[3] Senator Lauch Faircloth (R-NC), quoted in ''Funding IMF Good for US Business,'' *The Atlanta Journal Constitution*, March 31, 1998.

[4] David Sanger, ''A Fund of Trouble,'' *New York Times*, October 2, 1998.

bureaucratic interests. In short, IMF lending behavior depends not only on the intensity and heterogeneity of powerful states' preferences, but also on the relative influence of states and Fund bureaucrats in particular cases.

The remainder of the article proceeds as follows. I first describe the substantial variation in IMF lending over the last two decades and review the existing literature. I then present my common agency theory and test its hypotheses using an original data set constructed from IMF archival documents. I conclude by discussing the key implications of these findings for our understanding of both the IMF and policymaking within international organizations (IOs) more broadly.

The Empirical Puzzle: Variation in IMF Lending

IMF loans consist of two elements: a certain amount of financing and a set of economic policy reforms, or conditionality, that the borrower must implement to receive IMF credit. Although some vocal critics accuse the Fund of imposing identical ''cookie-cutter'' programs in all cases, IMF loans exhibit substantial variation along each of these dimensions.[5] Between 1984 and 2003, the Fund provided 197 nonconcessional loans to 47 developing countries, totaling Special Drawing Right (SDR) 253.8 billion.[6] While the mean loan amount was SDR 1.21 billion, these loans ranged widely in absolute size, from the SDR 7.1 million loan granted to Belize in 1984, to the SDR 22.8 billion loan approved for Brazil in 2002.[7] Similarly, loan amount varies substantially when controlling for country size by measuring loans in relation to a country's IMF quota: the average nonconcessional IMF loan during the 1984–2003 period was 1.26 times quota, with a minimum of 0.15 (Chile 1989) and a maximum of 19.38 (Korea 1997).[8] Although larger countries generally have received larger loans in absolute terms, one observes substantial puzzling variation across cases when measuring IMF loans in relation to country quotas. For example, Turkey, with the 18th-largest quota, has received three of the 10 largest loans since 1983, while Thailand, with the 22nd-largest quota, received a loan of SDR 2.9 billion (5.05x quota) in 1997.[9] On the other hand, many countries of substantial global economic and political importance have received relatively modest loans (for example, Russia 1999: 0.56x quota; Brazil 1992: 0.69). Finally, individual countries have received very different loans over time. For example, Argentina's 10 loans during the 1984–2003 period ranged in size from 0.47x quota (1996) to 5.27 (2003), while Mexico's five loans ranged in size from 1.2x quota (1986) to 6.88 (1995).

[5] Joseph Stiglitz, ''What I Learned at the World Economic Crisis.'' *The New Republic*, April 17, 2000.

[6] The SDR is the Fund's unit of account. Its value is derived from a basket of major international currencies. Currently (as of January 11, 2010), 1 SDR equals $1.57299 (http://www.imf.org).

[7] Nonconcessional IMF loans (Stand-by Arrangements, Extended Fund Facilities, and Supplemental Reserve Facilities) are extended to middle-income countries that typically borrow on global financial markets but seek temporary IMF aid when facing balance of payments problems. The IMF also lends on a concessional basis (that is, at submarket interest rates) through the Poverty Reduction and Growth Facility (PRGF) to extremely poor countries that rarely, if ever, borrow on global financial markets. These loans serve a very different purpose and group of countries than the Fund's nonconcessional facilities: concessional borrowers depend almost entirely on the Fund and other official international creditors for long-term access to external financing. Moreover, PRGF loans are fully financed from a separate dedicated trust fund, rather than from the IMFs main quota resources; the PRGF trust borrows directly from national governments and multilateral institutions and lends on a ''pass-through'' basis to eligible countries (http://www.imf.org/external/np/exr/facts/prgf.htm). PRGF eligibility is determined by the World Bank's poverty classifications: currently, the ceiling is $1,025 per capita in 2005 dollars. As of August 2007, 78 countries were eligible for PRGF financing.

[8] Country quotas and GDP are almost perfectly correlated (0.92) in the data sample. See Table 1 for summary statistics of this and all variables used below in the statistical analysis.

[9] Rankings exclude the Organization for Economic Cooperation and Development (OECD) countries.

TABLE 1. Summary Statistics, IMF Lending Dataset

Variable	*Observations*	*Mean*	*SD*	*Minimum*	*Maximum*
Amount/quota	177	1.26	2.21	0.15	19.38
Amount/GDP	177	2	2.13	0.22	14.85
Amount (SDR, million)	177	1,319.67	3,218.43	11.63	22,821.12
Performance criteria	173	6.51	2.49	0	16
Prior actions	171	2.67	5.7	0	37
Benchmarks/targets	171	4.18	5.84	0	27
G5 bank exposure ($billions)	894	8.82	14.04	0	78.05
Coefficient of variation, G5 bank exposure	894	115.77	45.77	0	223.61
US share, G5 bank exposure	894	0.28	0.23	0	1
UK share, G5 bank exposure	894	0.11	0.14	0	1
Japanese share, G5 bank exposure	894	0.14	0.19	0	0.94
German share, G5 bank exposure	894	0.23	0.24	0	1
French share, G5 bank exposure	894	0.19	0.22	0	1
GDP (log)	894	10.05	1.62	5.68	14.05
GDP per capita (log)	894	8.61	0.44	6.83	9.71
GDP growth (%)	894	3.22	5.46	−42.45	38.2
Current account/GDP (%)	894	−2.25	6.69	−56.2	25.6
External debt/GDP (%)	894	51.25	29.74	0.74	231.33
External debt service/exports (%)	894	20.37	14.58	0.28	117.81
Short-term debt/reserves (log)	894	−0.66	1.3	−4.61	5.03
Currency crash	894	0.12	0.32	0	1
Veto players (log)	894	0.89	0.62	0	2.08
G5 UN voting affinity (mean ''*S*'' score)	894	0.17	0.22	−0.22	1
Coefficient of variation, G5 ''*S*'' scores	894	24.89	6.47	0	49.39
Propensity score	894	0.2	0.15	0.002	0.75
IMF liquidity ratio	894	0.31	0.07	0.2	0.46
IMF quota review	894	0.6	0.49	0	1
Number of currency crises globally	894	6.16	2.85	1	12
LIBOR	894	5.98	2.15	1.73	10.75

(*Notes.* SDR, Special Drawing Right; LIBOR, London Interbank Offer Rate; IMF, International Monetary Fund.)

Similar variation is evident when examining IMF conditionality. Fund programs contain several different types of conditionality, each differing in content, specificity, and the degree to which it is ''binding'' on the borrower. *Performance criteria* (PCs) are mandatory conditions that must be implemented in order for credit to be disbursed. PCs typically specify key macroeconomic targets, such as a minimum level of international reserves or a maximum level of government borrowing. Increasingly, IMF programs have also incorporated ''structural'' PCs, such as requirements to privatize state-owned enterprises or to remove price controls. *Prior actions* (PAs) are measures that a country agrees to implement before IMF loan approval; they are designed to ''ensure that the program has the necessary foundation to succeed'' (IMF 2005). Like PCs, PAs are ''hard'' conditions: they must be implemented in order for a country to receive IMF credit. Indeed, PAs are, to some extent, ''harder'' conditions than PCs, as they must be implemented *prior* to receiving the first installment (''tranche'') of an IMF loan. PCs, in contrast, must be implemented only at subsequent interim reviews. Many Fund loans also often include nonbinding ''softer'' conditions, which do not automatically lead to the suspension of a loan if a borrower fails to implement them. ''Soft'' conditionality typically comes in two forms: *indicative targets*, which are similar in content to quantitative PCs but typically set for the later months of a program; and *structural benchmarks*, which are similar to structural PCs in substance but not stringency. Benchmarks are used ''for measures that cannot be monitored objectively enough to be PCs, or for small steps in a critical reform

process that would not individually warrant an interruption of Fund financing'' (IMF 2005).[10]

While the mean number of PCs included in nonconcessional IMF loans has remained roughly constant over time (6.5), there has been substantial cross-sectional variation, with the number ranging from 0 to 16 from 1984 to 2003.[11] In contrast, the Fund's use of PAs, benchmarks, and targets has increased notably in recent years: the average number of non-PC conditions has increased from 0.3 in 1984 to 11 in 2003. Furthermore, the Fund's use of softer (non-PC) conditionality has varied widely across cases, with the number of PAs ranging from 0 to 37 (mean 2.7), and the number of benchmarks/targets varying from 0 to 27 (mean 4.1).

The Existing Literature

What explains this variation in IMF lending? In deciding how much and on what terms to lend, the IMF faces a central tradeoff between liquidity and moral hazard. On the one hand, Fund lending directly benefits a country by providing it with the financing (liquidity) needed to service its debts. Indirectly, it may also enhance global financial stability by preventing a crisis in one country from becoming a larger systemic problem. On the other hand, IMF loans also create moral hazard-incentives for borrowers and lenders to assume additional risk in the expectation of future bailouts (Crockett 1997).[12] This tradeoff presents the IMF with a difficult choice: lend freely (large amounts on lenient terms) at the risk of increasing future demand for such bailouts, or limit current lending (smaller loans with more extensive conditionality) at the risk of having a country default and triggering a broader financial crisis.

From a purely economic perspective, choices over this tradeoff depend on whether a borrower is insolvent or illiquid—that is, whether the country is effectively bankrupt due to bad economic policies, or whether it faces a temporary liquidity problem caused by an unforeseen macroeconomic shock or a ''financial panic'' (Chang 1999). In this view, IMF lending is largely technocratic: Fund economists design loans based on country-specific macroeconomic indicators that determine a borrower's financing needs and the amount of policy adjustment necessary to ensure its long-term debt sustainability. To be sure, macroeconomic factors play a large role in IMF decision making: past studies have found that loans are larger and contain more conditions when a country has fewer foreign exchange reserves, higher levels of external debt, and a record of past IMF borrowing (Knight and Santaella 1997; Bird and Rowlands 2003). Nonetheless, the empirical record of this technocratic view of IMF lending is mixed: many key macroeconomic variables have weak or indeterminate effects on IMF lending (Joyce 2004). Furthermore, the Fund's provision of bailouts in a number of high-profile cases where the borrower appeared to be insolvent—most notably to Russia in the late 1990s and to Argentina in the early 2000s—strongly suggests that political factors also influence IMF lending (Mussa 2002).

Recognizing these limitations of a purely economic approach, international political economy (IPE) scholars have sought to identify the political determinants of IMF lending. In general, this literature offers two competing explanations of Fund behavior. On the one hand, some scholars argue that the IMF is the servant of the United States, which utilizes its position as the Fund's largest

[10] On the types of IMF conditionality, see http://www.imf.org/external/np/exr/facts/conditio.htm.

[11] Data are calculated from documents gathered by the author in the IMF Archives, including Letters of Intent, Memoranda of Economic Policies, and IMF Staff Reports for each loan in the data sample.

[12] The classic example of moral hazard is in insurance, where insurers assume two types of risk: the ''real hazard'' (for example, auto accident/theft) and the ''moral hazard'' arising from risky actions an individual may take once he is insured (for example, more reckless driving/not locking one's home).

shareholder to direct credit toward countries it deems important. The main variant of this argument is geopolitical: it claims that American foreign policy allies or countries of strategic importance receive more favorable treatment from the Fund. Along these lines, recent quantitative studies have found a relationship between IMF lending and countries' voting patterns in the United Nations General Assembly (UNGA) and/or levels of US foreign and military aid to a given borrower country (Thacker 1999; Stone 2002, 2004; Barro and Lee 2005; Vreeland 2005).[13] Several recent high-profile IMF lending cases are also frequently cited in support of this argument, including Russia, Turkey, and Pakistan. Most recently, Randall Stone has extended this logic further, arguing that the formal rules of IMF governance become irrelevant when American strategic interests are at stake. In such cases, he argues, the United States assumes ''temporary control'' of Fund decision making and ensures that its ''valued client'' states receive favorable IMF treatment, in the form of reduced conditionality (Stone 2008:590). An alternative but related perspective is that the United States utilizes IMF lending to protect its domestic financial interests. Studies in this vein have found that IMF loans tend to be larger when a borrower country owes large amounts of debt to private creditors—primarily commercial banks—located within the United States and other major IMF shareholders (Oatley and Yackee 2004; Broz 2005; Broz and Hawes 2006). Still others, such as Erica Gould, have argued that private international creditors influence the IMF independently, rather than as interest groups within the United States and other advanced industrialized countries (Gould 2003, 2006).

On the other hand, scholars in the ''public choice'' tradition argue that bureaucratic politics, rather than powerful states' interests, is the key political factor in IMF lending (Vaubel 1991; Willett 2002; Dreher and Vaubel 2004b). These scholars view the Fund not as the servant of its shareholders, but rather as a highly independent actor in its own right. Drawing on principal–agent theory, this alternative approach emphasizes IMF bureaucrats' incentives to engage in ''rent-seeking'' or to exploit ''agency slack'' to maximize their autonomy, budget, or the likelihood of program success.[14] From this perspective, we should observe the staff consistently favoring larger loans with more extensive conditionality, as more lending and a larger role for the Fund in monitoring its borrowers' economic policies enhances the staff's own influence.

As with purely economic explanations, each of these political arguments has significant limitations. Public choice models generate clear predictions about variation in IMF lending over time, but they do not explain variation across cases within time periods. For example, while it may be the case that the staff proposes larger loans during quota reviews, this prediction does not explain lending variation during these reviews. Furthermore, the rent-seeking logic presented in public choice models of the IMF begs the question of when the Fund staff is able to ''get away'' with this type of behavior. However, while bureaucratic arguments draw explicitly on principal–agent theory, they tend to leave unspecified both the identity and interests of the IMF staff's principal(s). Consequently, they offer few predictions about the scope conditions for staff autonomy. Similarly,

[13] See Reynaud and Vauday (2008) for an innovative variation of this approach, which attempts to more broadly define the geopolitical importance of a country based on energy and nuclear resources, geographic position, and military power.

[14] The ''rents'' accruing to the staff in this approach are defined broadly to include all of these factors; strictly speaking, staff members do not receive personal financial gains from more extensive IMF lending or conditionality. Willett (2002) emphasizes that, in addition to bureaucratic incentives, staff preferences are also shaped by genuine policy goals, such as improving the economic situation of IMF borrower countries. Willett also notes that the Fund staff and the IMF Managing Director may have different incentives. As my focus is on the relative influence of member-states and the IMF bureaucracy in particular lending cases, I do not explore these possible divisions in this paper.

arguments that the United States and other powerful states control the IMF pay insufficient attention to the role of the Fund staff, which enjoys considerable autonomy during the negotiation, design, and proposal of Fund loans. In addition, while a handful of existing studies have incorporated measures of non-US shareholders' preferences (for example, Oatley and Yackee 2004; Broz and Hawes 2006; Dreher and Sturm 2006), these studies overlook a critical variable shaping Fund lending decisions: *preference heterogeneity* among these large shareholders. Thus, while this paper consciously builds upon this past work emphasizing strong states' preferences within the IMF, it extends the literature in a new direction by focusing on Fund decision making as a case of common agency. In this framework, which I describe further below, the Fund's five largest shareholders exercise *de facto* political control over lending decisions, yet the IMF staff also enjoys substantial autonomy in some cases.

IMF Decision Making: A Common Agency Perspective

In recent years, international relations (IR) scholars have increasingly turned to principal–agent theories to study international institutions in general and the IMF in particular (Gould 2003, 2006; Hawkins, Lake, Nielson, and Tierney 2006; Martin 2006). A central tenet of such theories is the assumption that agents pursue their own interests, subject to the constraints imposed upon them by their principals (Kiewiet and McCubbins 1991). Principals will try to control their agents, but doing so is costly and some degree of *agency slack* is inevitable (Hawkins et al. 2006). Agency slack is even more severe in cases of *common agency* (collective or multiple principals), because the multiple members comprising the agent's principal may have heterogeneous preferences about the agent's behavior, which the agent can exploit to pursue its own interests (Ferejohn 1986). Similarly, the intensity of the principals' preferences affects an agent's discretion. When the principal has strong preferences over a particular decision, it has greater incentives to monitor the agent's behavior and agency slack should decrease.

G5 Governments as the Fund's Collective Principal

The Fund's member-states are its shareholders and formal political principals. Acting through the EB, a 24-member body composed of Executive Directors (EDs) representing shareholder governments, member-states have the final say over all IMF policy decisions. However, because member-states' voting power is directly proportional to their IMF quota contributions, the advanced industrialized countries' preferences carry the most weight in Fund decision making. As the Fund's five largest shareholders, the ''G5'' countries (United States, United Kingdom, Germany, Japan, and France) are entitled to appoint their own EDs, who hold a combined 38.39% of the votes.[15] This voting structure gives the advanced industrialized countries overwhelming influence within the IMF: EDs from constituencies encompassing the G7 (G5 plus Canada and Italy) cast a combined 46.13% of EB votes, and those representing the G10 (G7 plus Belgium, the Netherlands, Sweden, and Switzerland) collectively cast nearly two thirds (62.28%).[16]

[15] http://www.imf.org/external/np/sec/memdir/eds.htm.

[16] The Group of 10 comprises the 11 countries that participate in the major global financial regulatory institutions at the Bank for International Settlements and have made supplementary credit commitments to the IMF through the General Arrangements to Borrow and the New Arrangements to Borrow: http://www.imf.org/external/np/exr/facts/gabnab.htm.

As many of the Fund's nonlending decisions require EB supermajorities of 70–85%, the advanced industrialized countries hold collective (or the United States, with 16.77% of the votes, unilateral) veto power over a wide range of Fund policies, including quota increases, the sale of IMF gold reserves, and amendments of the Articles of Agreement.[17] However, this veto power does not extend to IMF lending decisions: formally, approval of an IMF loan requires the support of only a simple majority of EB votes, rather than a supermajority. Moreover, the Board's norm is to avoid formal votes on IMF lending decisions whenever possible. Rather, the Board makes lending decisions on a ''consensus basis with respect given to the relative voting power of the states'' (Mussa and Savastano 1999; IMF 2002; Van Houtven 2002). This informal norm of IMF policymaking suggests that the interests of the advanced industrialized countries are the dominant factor influencing Board decisions about the size and terms of IMF loans.

Put simply, the Fund's rules and decision-making norms give its largest shareholders *de facto* control over decision making. Indeed, the G5 countries must garner the support of only three other EDs from rich countries to assemble a Board majority and control IMF lending decisions. Given the deep economic and political ties between these countries, such cooperation and coordination between the G5 and their G7/G10 counterparts is highly likely to occur within the IMF. Moreover, as three G10 members (Belgium, Netherlands, and Italy) share a common currency with France and Germany as members of the eurozone (and a fourth, Sweden, is also a member of the European Union), these countries are very likely to share common preferences over international financial issues such as IMF lending. Finally, it is highly unlikely that the remaining Board members will override the collective objections of the Fund's five largest quota contributors and vote to approve a loan without their consent (Rieffel 2003; Fratianni and Pattison 2005). For these reasons, I focus in the remainder of this paper on G5 governments' interests as a strong proxy for the overall interests of the key players within the EB. Focusing on the G5 also controls for the fact that G7/G10 representation within the Board has changed over time as different countries have held these Director seats; in contrast, each of the G5 governments has had a seat at the table for all IMF lending decisions over the last two decades. Thus, treating the G5 as the Fund's *de facto* collective principal is a valuable shorthand that makes cross-case identification and comparison of the intensity and heterogeneity of preferences among the Fund's largest shareholders more tractable.

The IMF Staff as Agent

While member-states hold ultimate authority over IMF policymaking, they have delegated substantial authority to the Fund's bureaucratic staff. Consisting of approximately 2,400 members (half of whom are professional economists) from 143 countries, the IMF staff acts as the agent of the member-states in negotiating, designing, and proposing lending arrangements to the EB (Mussa and Savastano 1999).[18] Although the staff often consults with the Board during this process, the EB cannot approve a loan without first receiving a staff proposal. Moreover, while the EB retains formal authority to amend staff proposals, it almost never exercises this power (Southard 1979; Martin 2006). Indeed, ''there are only a few instances in the Fund's entire history of the Board turning down or even modifying a request for a conditional loan arrangement'' (Gould 2006:286). This

[17] See IMF (2001) for a detailed description of these special majority rules.
[18] http://www.imf.org/external/np/exr/facts/glance.htm.

agenda-setting power gives the staff significant influence over IMF lending.[19] However, as it operates ''in the shadow'' of an EB vote, the staff's autonomy is not complete; rather, it must take the EDs' preferences into account if it is to design a program that will secure Board approval.

The literature emphasizes two main determinants of staff preferences over the liquidity/moral hazard tradeoff: policy goals and bureaucratic incentives. Above all, staff members are economists and civil servants interested in achieving the IMFs policy objectives: ''to enable countries to rebuild their international reserves, stabilize their currencies, continue paying for imports, and restore conditions for strong economic growth'' (IMF 2002). This mandate suggests that staff preferences are driven largely by technocratic macroeconomic factors. At the same time, public choice theorists emphasize the staff's bureaucratic incentives to propose larger loans with more conditions, to maximize its budget, autonomy, and influence. Although scholars differ over the relative importance of each of these objectives, both factors are likely to influence IMF staff preferences. In short, Fund bureaucrats ''seek to do good, but are not immune to bureaucratic incentives and external pressures'' (Willett 2000:6).

Common Agency, Preference Heterogeneity, and Agency Slack in IMF Lending

Thus, to accurately explain variation in IMF lending, we need to know the conditions under which G5 governments exert the greatest influence, as well as those under which the Fund staff enjoys the greatest amount of ''agency slack.'' As noted earlier, principal–agent theory suggests that agent autonomy in cases of common agency is a function of both the *intensity* and *heterogeneity* of principals' preferences. With respect to the IMF, this logic suggests that G5 governments' influence over Fund lending decisions (and, by extension, the staff's autonomy) will be conditional on both the intensity and heterogeneity of their preferences in a particular case.

The impact of G5 preference intensity is straightforward: when the G5 countries collectively have a strong interest in lending to a particular IMF borrower country, Fund loans should more closely reflect their economic and financial interests. In contrast, when G5 preferences, as a group, are weaker, the IMF staff should enjoy greater autonomy and Fund loans should more closely reflect its technocratic and/or bureaucratic interests. Exactly how G5 preference heterogeneity influences IMF lending is less clear. Greater G5 preference heterogeneity might affect IMF lending in three very different ways. First, it might lead to distributional conflict within the EB, with different principals preferring different policy outcomes (Martin 2006). For example, it might be the case that the US government strongly favors a ''bailout'' for a particular country, while the European G5 countries have weaker financial or political ties to the borrower and are opposed to this outcome on moral hazard grounds.[20] If this view is correct, divergence in G5 preferences should result in approval of smaller IMF loans with more extensive conditionality. In effect, a reduction in loan size and/or the imposition of more stringent conditionality is the price

[19] The rarity of such events is itself evidence of the staff's ''gatekeeping power'' (Martin 2006): ''if the staff anticipates that the outcome of EB decisions will not be to its liking, it can refuse to present a program in the first place'' (p. 149). Martin also argues that the staff has informational advantages of the EB, as EDs are replaced more frequently than staff bureaucrats; this further increases the Board's propensity to accept staff proposals (pp. 145–147).

[20] Mexico in 1995 is a recent and prominent example, in which US financial and geopolitical interests were significantly stronger than those of its G5 counterparts. This discrepancy created serious tensions within the EB over the size and terms of the proposed IMF loan. See EBM/95/11, ''Minutes of Executive Board Meeting 95/11'' (10:00 AM, February 1, 1995), as well as George Graham, Peter Norman, Stephen Fiedler, and Ted Baracks, ''Mexican Rescue: Bitter Legacy of the Battle to Bail Out Mexico,'' *Financial Times*, February 16, 1995.

demanded by the less enthusiastic G5 governments in exchange for setting aside their moral hazard concerns and supporting their counterparts' interests within the EB.

Alternatively, greater G5 preference heterogeneity might have exactly the opposite effect: rather than creating distributional conflict within the EB, it might create opportunities for ''logrolling'' or ''horse trading'' among the Fund's largest shareholders. Put simply, while G5 governments may disagree significantly over the size and terms of a specific IMF program, they might support the demands of their most interested counterpart in the hopes of receiving similar treatment in the future for their own preferred borrowers. The underlying logic here is that EB policymaking is not a one-shot game, but rather entails repeated strategic interaction among the same group of countries. Consequently, G5 governments may find it useful to strike intertemporal bargains in exchange for the promise of future reciprocity. The observable implications of this logrolling logic are the opposite of those for the distributional conflict argument: we should observe the Fund treating its borrowers more generously (larger loans with fewer conditions) as G5 disagreement over the financial and geopolitical importance of a borrower country increases.

Finally, it may be the case that greater G5 preference heterogeneity simply increases IMF staff autonomy. Thus, rather than creating conflict or logrolling opportunities within the EB, G5 preference heterogeneity may allow the staff to exploit agency slack and maximize its independence. The key factor underlying this logic is the staff's agenda-setting authority: the Board cannot approve a loan unless and until it receives a proposal from the staff. The precise observable implications of greater agency slack for IMF lending outcomes are unclear, however, given that the Fund staff's interests are both technocratic and bureaucratic in nature. On the one hand, it may be the case that greater staff autonomy removes ''politics'' (that is, G5 financial and geopolitical interests) from the IMF lending process and frees the staff to act in pursuit of the Fund's technocratic policy objectives. On the other hand, more agency slack may free the staff to pursue its own bureaucratic political interests and engage in the types of ''rent-seeking'' described by public choice scholars.

Which of these effects will dominate in a particular case? I argue that the effects of G5 preference heterogeneity are conditional on G5 preference intensity. In other words, there is an interactive relationship between the two variables. When G5 governments have a strong collective interest in an IMF borrower (that is, high intensity), staff autonomy is limited and the Fund's principal shareholders exert substantial influence over lending decisions. In these cases, greater G5 preference heterogeneity should lead to either distributional conflict or logrolling within the EB, and IMF loans should strongly reflect these principals' interests.[21] In particular, we should observe G5 interests to be most significant in IMF lending during financial crises in large borrowers, such as Korea, Argentina, Brazil, and Mexico.[22] These countries are the largest recipients of private capital flows from G5 lenders, and their financial problems have repeatedly become issues of international importance over the last two decades. In contrast, when G5 collective interests are less intense, G5 preference heterogeneity should have little effect on IMF lending decisions. Indeed, as the Fund's principals have little at stake in these cases, the staff should enjoy substantial autonomy, and IMF loans should more closely reflect its technocratic or bureaucratic interests. Examples of these latter cases are smaller countries (for example,

[21] I do not have strong priors on which of these two effects will dominate in these cases. The evidence presented below, however, suggests that both dynamics are at work within the EB.

[22] Recent case studies support this expectation. See, in particular, Boughton (2001) and Blustein (2001).

El Salvador, Jamaica, and Jordan) that are of far less importance to both the G5 and global financial stability.

Ultimately, in contrast to existing theories, the common agency framework generates clear, testable hypotheses about variation in the relative influence of the principal (G5 governments) and the agent (the Fund staff) in IMF lending. In so doing, it moves beyond the standard views of the IMF as either ''master'' or ''servant''—stereotypes which remain deeply ingrained in both the academic and policy literatures—to generate case-specific predictions about the variable influence of powerful states and IMF bureaucrats over Fund lending decisions.

Empirical Analysis

To test this logic, I analyze an original data set of 197 nonconcessional IMF loans to 47 countries from 1984 to 2003.[23] This sample constitutes the universe of Fund loans during this period by all countries not eligible for the IMFs concessional lending facilities.[24] Data on the characteristics of each loan are taken directly from IMF archival documents, including the Letter of Intent declaring a country's intent to enter into a Fund program, the corresponding Memorandum of Economic Policies detailing the loan's terms and conditionality, and the Staff Reports to the EB. These documents contain detailed tables outlining the specific conditions included in each IMF program in the sample.

Dependent Variables: Loan Size and Conditionality

The first dependent variable is loan size, measured as a share of a country's IMF quota. This variable (*AMTQTA*) is the total amount of new IMF lending approved for country *i* in year *t*, divided by the country's quota. *AMTQTA* enters as a natural log to ensure that the data correspond as closely as possible to the ordinary least squares (OLS) assumption of a normally distributed dependent variable. I also test two alternative measures of loan size: amount (logged) relative to GDP (*AMTGDP*), and absolute amount (logged) in millions of SDRs (*AMTSDR*); the results are broadly robust to each of these alternative specifications. I focus primarily on *AMTQTA* for two reasons: access to IMF credit is explicitly linked to quotas, and absolute loan size is almost perfectly correlated with country size (0.87). Therefore, *AMTQTA* provides a more accurate measure of an ''oversized'' loan.

To measure conditionality, I count the number of conditions included in a Fund program. This coding strategy follows in the tradition of most recent quantitative analyses of IMF conditionality (Gould 2003, 2006; Dreher and Jensen 2007). Admittedly, a simple count of the number of conditions is only a rough proxy for the overall stringency of conditionality, and it is clearly a more subjective measure than the aforementioned loan size metrics. Nevertheless, there are two key reasons to believe that this metric, rather than the specific policy/numerical content of each condition, effectively gauges the overall stringency of conditionality in a given lending case. First, it is extremely difficult to measure the relative stringency of individual conditions (such as specific current account

[23] Each observation is a unique country-year loan. The data set begins in 1984, since the Bank for International Settlements' data for G5 commercial bank exposure (one of the key explanatory variables, as discussed below) is only available from 1983. The full data set of all country-years for these countries, as well as those eligible countries that did not borrow from the IMF from 1984 to 2003, consists of 894 observations and 55 countries. This larger sample is used in the propensity score matching estimation described below to control for possible selection effects.

[24] For the reasons outlined earlier—differences in the characteristics of the borrowing countries, the sources of the money, and the loans' purposes—I exclude concessional IMF lending from the analysis. While many studies of IMF lending pool these two types of loans (for example, Gould 2003, 2006), doing so is likely to result in biased predictions about the Fund's nonconcessional lending behavior.

balance targets), given the vastly different characteristics of IMF borrowers. Second, cross-national comparison of the content of conditionality is difficult, as the Fund sometimes grants waivers for individual missed conditions. Indeed, it is almost impossible to ascertain whether or not the same condition will be considered equally ''binding'' in different cases.[25]

In the conditionality models, I code three separate dependent variables. First, *PERFORMANCE CRITERIA* measures the number of PCs included in the IMF program. PCs, as noted above, are the most ''binding'' form of conditionality, as disbursement of IMF credit is explicitly linked to their implementation. The second variable is a count of the number of *PRIOR ACTIONS* included in the loan. Like PCs, PAs are ''hard'' conditions, in that their implementation is a prerequisite for IMF lending. Finally, *BENCHMARKS/TARGETS* counts the number of ''soft'' conditions, including quantitative benchmarks, indicative targets, and structural benchmarks.

Independent Variables

To test the common agency theory and its hypotheses, it is necessary to identify proxies for the intensity and heterogeneity of G5 interests in specific cases. Given the ongoing debate in the literature about which factors most influence G5 preferences, I test measures of both financial and geopolitical/foreign policy interests. As a proxy for G5 geopolitical interests, I follow the recent literature in using voting affinity within the UNGA. While most UNGA votes are symbolic, they are a good proxy for the overall foreign policy alignment between countries (Thacker 1999; Stone 2004; Vreeland 2005). For UN voting affinity, I utilize Erik Gartzke's Affinity of Nations data set, which calculates ''*S*-scores'' that measure ''the similarity between two countries' voting profiles as the length of a line between two points in a multidimensional issue space'' (Stone 2004:580; Gartzke 2006).[26] As a measure of G5 financial interests, I follow most recent work in utilizing commercial bank exposure data (Oatley and Yackee 2004; Broz and Hawes 2006). While other economic links between G5 countries and IMF borrowers are also important (for example, foreign direct investment and trade), these flows are, in general, highly correlated with bank lending. Moreover, commercial banks and other large private creditors stand to benefit most directly from IMF lending, as Fund credit is frequently transferred from the borrower to private creditors in the form of external debt payments (Broz 2005). In addition, as internationally active commercial banks are relatively few in number and frequently lend collectively through syndication, they are well-positioned to organize politically and pressure G5 governments for favorable international economic policies, including IMF bailouts (Gould 2006).[27] For these reasons, bank exposure provides a strong measure of a country's overall economic importance to G5 governments. Data on bank exposure are taken from the Bank for International Settlements' *Consolidated International Banking Statistics* database.

[25] Although the staff and Board review conditionality prior to each stage of a program, I focus on the total number of conditions specified when a loan is first approved. The reason for this coding is that the IMF almost never alters the number of ''hard'' conditions (PAs and PC) from stage to stage, even if it modifies specific numerical targets for these conditions. For example, if the initial program includes a PC governing central bank reserves, this criterion customarily remains throughout the lifespan of the loan. Moreover, as the number of conditions rarely varies from stage to stage of a loan, counting each stage as a separate ''case'' would give undue weight to longer loans in the data set. For example, a 36-month Extended Fund Facility containing six reviews would count as seven cases, while a 12-month Stand-by loan with a single program review would count as only two cases.

[26] The specific variable is S3UN, which ranges from −1 to 1 and is coded based on a yes/abstain/no voting record. To avoid complications arising from the inclusion of negative values when calculating the coefficient of variation discussed below (*COVS*), I rescale S3UN from 0 to 2.

[27] On the rationale for and process of syndication, see Smith and Walter (2003).

Utilizing these data sets, I calculate four variables measuring G5 preference intensity and heterogeneity. The first two variables measure aggregate G5 interest *intensity* in a particular lending case. *G5BANK* is the natural log of total G5 commercial bank exposure to country *i* in year *t*, while *G5S* is the mean ''*S*-score'' measuring voting similarity between the G5 countries, as a group, and each IMF borrower.[28] The final two variables seek to measure the *heterogeneity* of G5 interests in particular cases. Using individual data for each G5 country, I calculate the coefficient of variation of bank exposure (*COVG5BANK*) and UN voting affinity ''*S*-scores'' (*COVS*). The coefficient of variation, which is the ratio of the standard deviation to the mean, expressed as a percentage, measures the dispersion of G5 bank exposure and G5 UN voting affinity. Finally, to test my hypothesis that the relationship between G5 preference intensity and heterogeneity is conditional and interactive, I include two multiplicative interaction terms. Each of these terms (*COVXBANK* and *COVXS*) is the product of the relevant *G-* and *COV-* terms described above.

While these four variables measure G5 preference intensity and heterogeneity, they do not tell us which specific G5 country has the most at stake in a given lending case. Consequently, I also calculate an additional set of variables: the share of total G5 international bank lending provided by banks in each individual G5 country. These variables (*USSHARE*, *UKSHARE*, *GRSHARE*, *FRSHARE*, and *JPSHARE*) measure the extent to which each individual G5 government has strong domestic financial interests in a particular case. All else being equal, I expect these variables to be associated with larger IMF loans and less extensive conditionality.[29]

Control Variables

Along with these variables of direct interest, I also include a set of controls for the alternative explanations of IMF lending in the existing literature. Given the extensive list of possible factors influencing Fund policies, I include those variables most frequently cited in the existing literature as key determinants of variation in IMF lending (Bird and Rowlands 2003; Joyce 2004). The first set of variables controls for a borrower's past history with the Fund. To account for the possibility of temporal dependence in IMF lending, I include a dummy variable (*PASTLOAN*) in the loan size regressions that takes a value of ''1'' if a country is already under an IMF program. Although tests indicate that serial correlation is not a problem in the analysis, *PASTLOAN* acts as a modified lagged dependent variable.[30] In the conditionality regressions, I replace *PASTLOAN* with an alternative variable (*LASTLOAN*) that measures the number of years since a country last borrowed from the Fund; this variable controls for potential temporal dependence and serial correlation in event count and binary models (Beck, Katz, and Tucker 1998).[31]

The second set of controls includes a variety of macroeconomic factors previously identified as key determinants of IMF lending. These include: the borrower country's external debt to GDP ratio (*DEBTGDP*); external debt service to exports (*DEBTSVC*); the log of GDP (*GDP*); the log of GDP per capita (*GDPPC*), annual GDP growth (*GROWTH*), the current account as a

[28] As the minimum non-zero value of G5 bank exposure is $0.001 billion, I add 0.0009 to the zero values to calculate the natural log. The results are not sensitive to the use of alternative constant values.

[29] The individual G5 ''*S*-scores'' are extremely collinear, with correlations ranging from 0.75 to 0.94. As a result, I do not include these separate variables in the statistical analysis.

[30] Substituting the actual amount of outstanding credit (and credit relative to a country's quota) as an alternative control for temporal dependence does not alter the substantive results.

[31] Two cubic splines, which further model duration dependence in nonlinear regression models, are also included. The results are not sensitive to the inclusion of additional splines.

percentage of GDP (*CURRGDP*), and the logged ratio of short-term debt to reserves (*STDRES*).[32] I also include a dummy variable, *CRASH*, which takes a value of ''1'' if a country experienced a sharp depreciation, or ''currency crash'' in the year prior to the IMF loan. I define a currency crash as a nominal depreciation of the currency of at least 25% that is also at least a 10% increase over the previous year's depreciation rate (Frankel and Rose 1996).

The third set of controls includes proxies for alternative political explanations of IMF lending. Following Vreeland, I include the natural log of the number of veto players in a borrower country (*CHECKS*), as a control for the impact of domestic political institutions on Fund behavior (Vreeland 2003, 2005). Vreeland finds this variable to be a key determinant of a country's decision to seek IMF financing, as well as of the Fund's decision to lend. Thus, there is good reason to believe it also influences IMF program characteristics. I also include variables identified by public choice scholars as key determinants of the IMF staff's bureaucratic incentives. Past studies in this vein have found that such incentives are particularly strong in two cases: (i) when the Fund has more resources to spare and (ii) when its member-states are considering whether to increase the size of IMF quotas. As a test of these arguments, I include two variables. The first, *LIQRATIO*, is the IMFs ''liquidity ratio,'' which is generated by dividing the sum of the Fund's outstanding loans and used administrative resources by its total quota resources, then subtracting this value from 1. The second variable, *REVIEW*, is a dummy variable indicating years in which a quota review was underway. Specifically, *REVIEW* tests the public choice argument's ''hurry up'' lending hypothesis, which predicts that the staff will propose larger loans during quota reviews to generate pressure on the Board to approve quota increases.[33]

Finally, I include a time trend variable (*DATE*), individual country fixed effects to control for unobserved panel heterogeneity, and the borrower's propensity score (*PSCORE*), which, as discussed below, controls for the possibility of nonrandom selection into IMF programs.[34] I also include two variables to capture the effects of broader global macroeconomic trends on IMF lending decisions. *CRISES*, is the lagged count of the number of currency crashes in the 47-country sample in a given year (Frankel and Rose 1996). It serves as a proxy for the current level of global financial instability. *LIBOR* is the 3-month London Interbank Offer Rate—the interest rate that banks charge each other on interbank loans, which serves as the primary benchmark on international capital markets. As higher global interest rates may increase both a country's external debt service and new borrowing costs, IMF loan characteristics are likely to be influenced by their movements.[35]

Model Specifications

For the loan size models, I specify an OLS model with panel-corrected standard errors and the aforementioned variant of the lagged dependent variable,

[32] Data are from the World Bank's *World Development Indicators* and *Global Development Finance*; and from the Economist Intelligence Unit's *Country Data* tables.

[33] Both *LIQRATIO* and *REVIEW* are taken from Dreher and Vaubel 2004a. The effect of *REVIEW* on conditionality is more ambiguous. On the one hand, the staff may have incentives to decrease conditionality and lend more freely; on the other, it might seek to increase conditionality so as to increase its visibility as a responsible steward of Fund resources in the eyes of the EB.

[34] Regional dummies rather than country effects are used in the propensity score matching analysis. These geographic variables are based on the World Bank's five regional classifications: Americas (North/South America/Caribbean), Central Asia/Europe, Middle East/North Africa, East/South Asia, and Sub-Saharan Africa.

[35] Data are taken from the IMFs *International Financial Statistics* and Dreher and Vaubel (2004b).

PASTLOAN (Beck and Katz 1995; Beck 2004). This specification accounts for potential issues arising in time-series cross-sectional data from the pooling of observations across countries and time (heteroskedasticity, serial and spatial autocorrelation). For the conditionality analysis, I utilize a series of event count models for panel data (Long and Freese 2003). For the PC regressions, the model is a conditional fixed effects Poisson model with robust standard errors. For the other types of conditionality, I employ a conditional fixed effects negative binomial model, given the overdispersion of the dependent variables.[36]

In choosing model specifications, I also pay close attention to issues of endogeneity and selection bias. Given the duration of both the economic problems leading a country to seek IMF financing and the loan negotiations themselves, the time at which the independent variables are measured involves difficult problems of interpretation and the potential for endogeneity. To mitigate these issues, I follow most previous studies in lagging the explanatory variables by one period. This lag also reflects IMF officials' assessments about the timing of the lending process.[37] In addition to addressing endogeneity concerns, statistical analyses of IMF lending must also address the problem of *selection effects* (Przeworski and Vreeland 2000; Vreeland 2003). The basic problem is that selection into IMF programs may be nonrandom: the same variables that explain variation in loan size and conditionality also may explain a country's initial decision to request a loan. To address this problem, I employ propensity score matching (Abadie and Imbens 2004). Briefly, the critical idea is to match each ''treated'' observation (in this case, each country-year observation of an IMF loan) with a ''control'' observation for which the values of the explanatory variables are as close to identical as possible.[38] For each observation, this generates a ''propensity score'' (*PSCORE*) ranging from 0 to 1, which measures the predicted probability that a country will enter an IMF program given the observed values of the covariates. Including *PSCORE* in the analysis minimizes selection bias and enables the use of standard, parametric regression techniques (Ho, Imai, King, and Stuart 2007).[39]

Loan Size Results

Table 2 presents the propensity score matching estimation and loan size regressions. Model 1 presents the logit analysis used to generate the propensity

[36] A central assumption of the Poisson model is that the variance equals the mean. This is reasonable for PCs (mean = 6.38, variance = 6.01), but not for PAs (mean = 2.81, variance = 5.62), or benchmarks/targets (mean = 4.13, variance = 5.79). The total number of countries and observations are reduced in the conditionality models, as all countries for which the dependent variable does not vary over time (for example, cases in which PAs = 0 in all loan-years) are ''swept out'' by the fixed effects. This reduction in sample size, however, alleviates the ''excess zeros problem'' that frequently plagues analysis with count models (Cameron and Trivedi 2003).

[37] ''Programs approved by the end of the second quarter of a calendar year will normally have been designed on the basis of information about the macroeconomic picture for the preceding calendar year, while arrangements approved in the second half of the calendar year will generally be based on information that extends through the first half of the same year'' (Knight and Santaella 1997:413). In the data set, 92 of the 197 loans were approved on or after July 1 of the given year, while the remaining 105 were approved in the first half of the year. Therefore, a 1-year lag of the independent variables is a conservative estimate of the gap between the initiation of the Fund lending process and final EB approval.

[38] This strategy is known as ''nearest neighbor'' or ''one-to-one'' propensity score matching. Other methods are also available, although the results presented here do not vary based on the choice of estimators. Matching was done using the PSMATCH2 module for Stata (Leuven and Sianesi 2003).

[39] Alternative methods of addressing selection bias exist, including the Heckman selection model (Heckman 1979), which has become increasingly popular in political science (Berinsky 1999; Vreeland 2003; Von Stein 2005). Recent studies, however, highlight a number of key weaknesses of this model, including the need to identify ''exclusion restrictions'' and its strong reliance on distributional assumptions about the model's residuals (Winship and Mare 1992; Sartori 2003; Simmons and Hopkins 2005). While matching estimation also has limitations—most notably in terms of lost efficiency—it is less sensitive to such modeling assumptions (Ho et al. 2007; Persson and Tabellini 2007).

TABLE 2. Loan Size Regressions

Model	*1*	*2*	*3*	*4*	*5*	*6*
Variable	*IMF loan (binary)*	*Amount/quota*	*Amount/quota*	*Amount/GDP*	*Amount(SDR, millions)*	*Amount/quota*
G5 bank exposure (log) (G5BANK)	−0.1185 [0.1141]	−0.0540 [0.0813]	0.1559 [0.1525]	0.0211 [0.1478]	0.1664 [0. 1496]	
Coefficient of variation, G5 bank exposure (COVG5BANK)	−0.0008 [0.0028]	−0.0072*** [0.0025]	−0.0080*** [0.0025]	−0.0081*** [0.0028]	−0.0082*** [0.0026]	
G5BANK*COVG5BANK			−0.0014* [0.0008]	−0.0012 [0.0007]	−0.0014* [0.0008]	
US bank exposure (log)						0.1461 [0.0955]
US share, G5 bank exposure (%)	−0.1045 [1.1063]	1.6319** [0.6412]	0.7458 [0.8744]	1.2682 [0.8834]	1.0844 [0.8845]	−0.9355 [0.5780]
UK share, G5 bank exposure (%)	−1.0596 [1.4149]	−0.6543 [1.2608]	−0.9749 [1.3396]	0.2228 [1.3738]	−0.5177 [1.3560]	
Japanese share, G5 bank exposure (%)	−0.3923 [1.3798]	0.6639 [0.8934]	−0.3343 [1.0596]	0.3425 [1.1793]	−0.4993 [1.1062]	
German share, G5 bank exposure (%)	0.3326 [1.1390]	2.1305*** [0.5217]	1.1669 [0.8088]	1.7651** [0.7587]	1.2452 [0.7849]	
French share, G5 bank exposure (%)	−0.6399 [1.2335]	2.4909** [1.2030]	1.7869 [1.2781]	2.5141* [1.3466]	2.0679 [1.2996]	
Mean G5 ''*S*'' score (G5S)	0.3259 [1.0476]	1.3630* [0.7941]	−0.6802 [1.2920]	−1.5516 [1.2052]	−0.8239 [1.2021]	
Coefficient of variation, G5 ''*S*'' scores (COVS)	0.0024 [0.0239]	0.0232 [0.0153]	−0.1160* [0.0626]	−0.1597** [0.0601]	−0.1366** [0.0587]	
G5S*COVS			0.1115** [0.0464]	0.1417*** [0.0464]	0.1298** [0.0442]	
U5 ''*S*'' score						0.0273 [0.3743]
Years since last IMF loan	0.0063 [0.0203]					
Past IMF loan (dummy)		−0.2988* [0.1581]	−0.2486 [0.1632]	−0.1970 [0.1743]	−0.2442 [0.1705]	−0.2501 [0.1666]
GDP (log)	0.1758 [0.1579]	3.2672** [1.2690]	3.3360*** [1.1833]	3.1712** [1.2998]	3.7560*** [1.2201]	2.2681* [1.3307]
GDP per capita (log)	−0.3236 [0.2813]	−2.0290* [1.2207]	−2.1660* [1.1414]	−2.9015** [1.2296]	−2.5600** [1.1781]	−1.9005 [1.3767]
GDP growth (%)	−0.0605*** [0.0172]	−0.0159 [0.0135]	−0.0197 [0.0148]	−0.0172 [0.0147]	−0.0197 [0.0145]	−0.0211 [0.0141]
Current account/GDP (%)	−0.0343** [0.0163]	−0.0027 [0.0128]	−0.0008 [0.0130]	0.0084 [0.0142]	0.0023 [0.0131]	−0.0051 [0.0135]
External debt/GDP (%)	0.0054 [0.0043]	0.0040 [0.0029]	0.0024 [0.0030]	0.0083** [0.0033]	0.0029 [0.0029]	0.0032 [0.0034]

Table 2. (Continued)

Model	*1*	*2*	*3*	*4*	*5*	*6*
Variable	*IMF loan (binary)*	*Amount/quota*	*Amount/quota*	*Amount/GDP*	*Amount(SDR, millions)*	*Amount/quota*
External debt service/ exports (%)	0.0095 [0.0083]	0.0193*** [0.0060]	0.0202*** [0.0061]	0.0205*** [0.0057]	0.0219*** [0.0059]	0.0162*** [0.0059]
Short-term debt/ reserves (log)	0.3072*** [0.0961]	0.0151 [0.0808]	0.0125 [0.0744]	0.0159 [0.0751]	0.0166 [0.0726]	−0.0035 [0.0715]
Currency crisis (dummy)	−0.1836 [0.2854]	0.2461* [0.1339]	0.2391* [0.1344]	0.2748** [0.1242]	0.1934 [0.1256]	0.2086 [0.1303]
Veto players (log)	0.0736 [0.2034]	−0.1666 [0.1673]	−0.1738 [0.1661]	−0.0675 [0.1704]	−0.1565 [0.1615]	−0.1744 [0.1610]
Time trend	0.0366 [0.0391]	−0.0556 [0.0379]	−0.0712* [0.0371]	−0.0570 [0.0369]	−0.0455 [0.0363]	−0.0131 [0.0345]
IMF liquidity ratio (%)	−1.9766 [1.5973]	−0.3925 [0.9033]	−0.5126 [0.9400]	0.0361 [0.7680]	−0.0998 [0.7980]	−0.1804 [1.0284]
IMF quota review (dummy)	0.1646 [0.2434]	−0.0320 [0.1087]	0.0004 [0.1140]	0.1121 [0.0968]	0.0313 [0.1018]	−0.0443 [0.1164]
Number of currency crises worldwide	0.0888* [0.0457]	−0.0129 [0.0231]	−0.0132 [0.0230]	−0.0016 [0.0190]	−0.0016 [0.0207]	0.0020 [0.0261]
LIBOR (%)	0.0432 [0.0718]	0.0381 [0.0347]	0.0439 [0.0354]	0.0301 [0.0321]	0.0211 [0.0326]	0.0081 [0.0305]
Propensity score		−0.1003 [0.8420]	0.0806 [0.8214]	0.3249 [0.8183]	0.2076 [0.8138]	0.0406 [0.9598]
Constant	−1.6257 [3.4695]	−29.3373*** [10.3526]	−25.4959** [10.2432]	−22.7132** [10.6989]	−20.2240** [10.2981]	−15.8390* [9.5742]
Observations	894	177	177	177	177	177
Number of countries	55	43	43	43	43	43
R-squared (McFadden's for model 1)	0.136	0.665	0.676	0.606	0.915	0.637
Adjusted R-squared (McFadden's for model 1)	0.067	0.459	0.468	0.351	0.860	0.444
Log-likelihood	−384.252	−134.777	−131.715	−129.192	−128.306	−141.932
Percent correctly predicted	79.87%	–	–	–	–	–

(*Notes.* OLS, ordinary least squares; SDR, Special Drawing Right; LIBOR, London Interbank Offer Rate; IMF, International Monetary Fund. Standard errors in brackets, logit: robust; OLS; panel-corrected; regional dummies and two temporal splines [Model 1] and country fixed effects [Models 2–6] not shown; *significant at 10%, **significant at 5%, and ***significant at 1%.)

scores included in the subsequent loan size and conditionality regressions; in this specification, the binary dependent variable takes a value of ''1'' if a country received an IMF loan in a given year. Notably, the logit results illustrate that G5 financial and geopolitical interests are not significantly correlated with a country's decision to enter into an IMF program (and, by extension, the Fund's decision to lend). Rather, this appears to be driven primarily by macroeconomic factors: countries are more likely to enter IMF programs when they face lower economic growth, larger current account deficits, and higher levels of short-term debt to reserves. In addition, countries are more likely to receive IMF loans in years in which global financial instability (measured by *CRISES*) is more widespread.

The remaining models in Table 2 present alternative specifications of the loan size regressions. Model 2 presents the non-interactive analysis with amount/quota (*AMTQTA*) as the dependent variable, while Model 3 incorporates the multiplicative interaction terms for G5 bank exposure and UN voting affinity. Models 4 and 5 present robustness checks by substituting the two alternative measures of loan size (*AMTGDP* and *AMTSDR*). Finally, Model 6 tests a ''US-only'' model that substitutes measures of US bank exposure (*USBANK*) and American UNGA voting affinity (*USS*) for the aforementioned G5 measures. As this specification clearly illustrates, the US interest variables by themselves are not significant determinants of variation in IMF loan size. Moreover, the goodness-of-fit statistics clearly indicate that the G5 models explain a larger share of the overall variation in IMF loan size than the US-only specification.

Across these various specifications, many of the control variables are significant in the expected directions. Economic factors play an important role in shaping Fund lending behavior: a borrower's GDP, GDP per capita, GDP growth, external debt/GDP, external debt service/exports, and the currency crisis dummy are all significant determinants of loan size, although significance levels for some of these variables differ across specifications. Overall, these findings reinforce the results of previous models in the existing literature (Knight and Santaella 1997; Joyce 2004). Somewhat surprisingly, a country's past history with the IMF has little effect on loan size: *PASTLOAN*—the dummy indicating whether a country is already receiving IMF credit under a preexisting program—is negative and significant only in Model 2. Similarly, the loan size models provide little support for alternative political theories of IMF lending: neither the veto players measure (*CHECKS*) nor the public choice proxies (*LIQRATIO* and *REVIEW*) are significant in any of the specifications. Finally, the measures of global macroeconomic conditions (*LIBOR* and *CRISES*) and the propensity score (*PSCORE*) are also insignificant across the various loan size models.

Turning to the variables of direct interest for the common agency argument, Table 2 provides clear and robust evidence that the intensity and heterogeneity of G5 governments' interests heavily influence IMF lending. In the non-interactive specification (Model 2), G5 bank exposure heterogeneity (*COVG5BANK*) is *negative* and significant at the 99% confidence level, suggesting that greater divergence of G5 financial interests leads to distributional conflict within the EB and the approval of smaller loans. Second, the measure of aggregate G5 UN voting affinity (*G5S*) is *positive* and significant in Model 2 at the 90% confidence level. Thus, as past studies have found, countries of greater geopolitical or foreign policy importance to the G5 tend to receive larger IMF loans. Third, Model 2 also suggests that IMF loans are significantly larger in cases where American, German, and French banks hold a larger share of international claims on a borrower country (*USSHARE*, *GRSHARE*, and *FRSHARE*).

Model 3, which contains the multiplicative interaction terms (*COVG5BANK* and *COVXS*), provides even stronger evidence that G5 preference intensity and

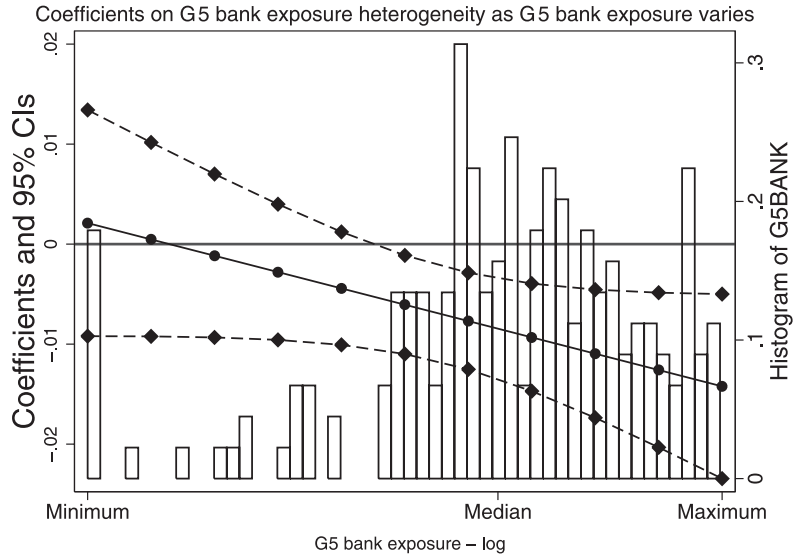

FIG 1. Loan Size (Amount/Quota): Interactive Effects
(*Note.* Coefficients on G5 bank exposure heterogeneity as G5 bank exposure varies.)

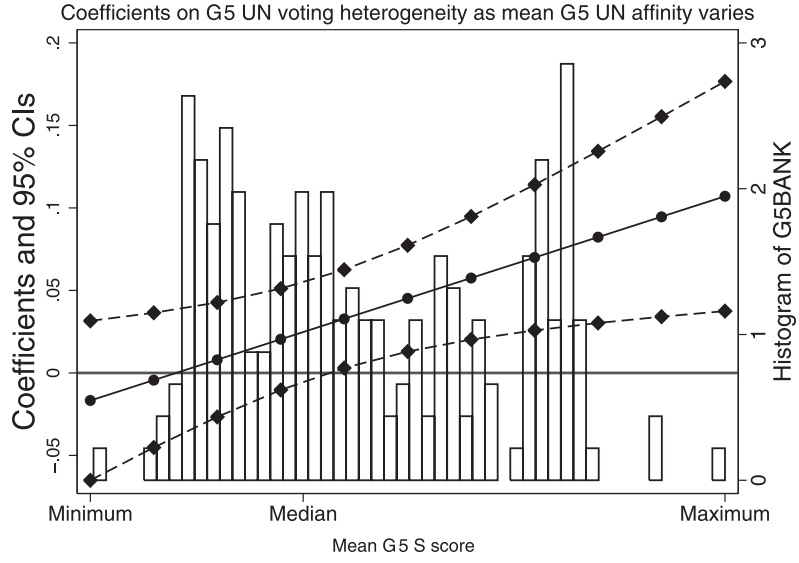

FIG 2. Loan Size (Amount/Quota): Interactive Effects
(*Note.* Coefficients on G5 UN voting heterogeneity as mean G5 UN affinity varies.)

heterogeneity are key determinants of IMF lending. As the goodness-of-fit statistics indicate, this model is clearly preferred over the non-interactive specification in Model 2. In these interactive models, however, one cannot independently interpret the regression coefficients on the interaction terms and their components (Braumoeller 2004; Brambor, Clark, and Golder 2005). Rather, as Figures 1 and 2 illustrate, the effect of G5 interest heterogeneity is conditional on the level of G5 interest intensity. These charts graph the coefficients on G5

preference heterogeneity (*COVG5BANK* and *COVS*) as the relevant G5 preference intensity variables (*G5BANK* and *G5S*) vary from their minimum to maximum values.[40] Each chart also includes a histogram illustrating the distribution of the relevant aggregate G5 variables (*G5BANK* and *G5S*) in the data set.

These charts further clarify the nature and extent of G5 governments' influence over IMF decision making. Figure 1 illustrates that the statistically significant, negative effect of G5 bank exposure heterogeneity (*COVG5BANK*) on IMF loan size only exists at higher levels of aggregate G5 bank exposure (*G5BANK*). In other words, distributional conflict among the Fund's principals results in smaller IMF loans only in cases where G5 government have a strong collective financial interest (that is, when *G5BANK* is at or above its median value). Recent examples of such cases, in which aggregate G5 bank exposure was very high but quite unevenly distributed, include Russia (1998/1999) and Thailand (1997).[41] Conversely, in cases where aggregate G5 bank exposure is limited, G5 preference heterogeneity has no significant influence on IMF loan size.[42]

Figure 2 illustrates that heterogeneity in G5 UN voting affinity (*COVS*) also strongly influences IMF lending, but only in cases of high G5 aggregate UN affinity (*G5S*). In contrast to the bank exposure results, however, the coefficient on *COVS* is positive, indicating that geopolitical preference heterogeneity among the G5 leads to *larger* IMF loans. Thus, greater variation in G5 foreign policy interests appears to create scope for ''geopolitical logrolling,'' in which individual G5 governments support larger loans for each other's preferred foreign policy allies, even though they themselves may have relatively weaker ties to a borrower than their counterparts. Such logrolling, however, only occurs in cases where G5S exceeds the median value—that is, in countries where the G5 as a group have relatively strong ties to the borrower country.[43] In contrast, the distribution of G5 foreign policy preferences has no significant effect on IMF loan size when *G5S* is below its median value (that is, for countries of less geopolitical importance to the G5 as a group). Thus, as with G5 bank exposure heterogeneity, divergent G5 foreign policy interests only shape IMF lending outcomes in cases where the Fund's principals, as a group, have sufficiently intense preferences.

In sum, the loan size models provide strong evidence that G5 preference heterogeneity influences IMF lending behavior, although the effects vary substantially across cases.[44] When G5 governments have strong collective financial

[40] Charts calculated using Bear Braumoeller's Stata module (http://www.polisci.osu.edu/faculty/braumoeller/custom/).

[41] In Russia (1998) aggregate G5 bank exposure was $46.8 billion, similar to that of Argentina in 2001 ($48.4 billion) and Mexico in 1989 ($46.5 billion). However, *COVG5BANK* equaled 137.6 (compared with 98.1 in Argentina and 67.6 in Mexico), largely as a result of German banks' extremely high exposure) (61% of total G5 lending). Similarly, in Thailand (1997), G5 bank exposure was $62.8 billion, roughly equal to Korea's bank exposure in the same year ($62.2 billion). However, *COVG5BANK* was 117.8 (compared with 45.1 in Korea), due to Japanese banks' heavy exposure (60% of total G5 lending). In each case, the IMF approved loans (Russia: 0.93x quota, 11 conditions; Thailand: 5.05x quota, 9 conditions) that were smaller and contained more conditions than those provided to the counterpart countries.

[42] Examples of nonconcessional IMF borrowers with little or no G5 bank exposure (that is, less than $1 billion) include Bosnia and Herzegovina, Fiji, Belize, El Salvador, Jamaica, and Estonia.

[43] In the IMF loan sample, *G5S* has a minimum of 0.89 (Hungary 1984), a maximum of 2 (Bosnia & Herzegovina 1998), and a median of 1.31 (Brazil 2002). *COVS* has a minimum of 0 (Bosnia & Herzegovina 1998), a maximum of 39.5 (Panama 1985), and a median of 23.7 (Brazil 1998). Examples of recent IMF borrowers with above-average levels of G5 UN voting affinity include: Croatia 1994 (1.78), Romania 1997 (1.76), Czech Republic 1993 (1.73), Turkey 2000 (1.60), and Korea 1997 (1.57). The most prominent recent case in which both *G5S* and *COVS* were very high in a borrower country was Argentina 2003 (*G5S* = 1.44, *COVS* = 30.5), where US voting affinity (0.67) was significantly lower than its G5 counterparts (1.52 – 1.74).

[44] Robustness checks substituting measures of G7 and G10 preference intensity and heterogeneity for the G5 measures yield substantively similar results. Thus, focusing on the G5, as noted earlier, proves to be a useful shorthand and accurate proxy for the interests of the Fund's largest shareholders. Results available on request.

interests, preference heterogeneity creates conflict over the severity of the moral hazard problem and results in EB approval of smaller IMF loans. In contrast, when a borrower country is of greater geopolitical importance to G5 governments, preference heterogeneity leads to ''logrolling'' and the approval of larger loans. Finally, in cases where G5 governments have weaker aggregate interests—both financial and geopolitical—their ability to influence Fund policymaking dissipates and IMF staff autonomy increases. In these latter cases, Fund loans more closely reflect the technocratic economic criteria found to be significant in the analysis. Thus, the relative influence of powerful states and Fund bureaucrats varies systematically across cases, and this variation significantly influences IMF loan size.

Conditionality Results

Table 3 presents the conditionality regressions. In Models 1–3, the dependent variables are *PERFORMANCE CRITERIA*, *PRIOR ACTIONS*, and *BENCHMARKS/TARGETS*, respectively. Given the clear evidence in support of the interactive specification in the loan size results, each of the conditionality models includes the interaction terms, *COVXBANK* and *COVXS*. Models 4–6 are robustness checks that test the same three dependent variables but substitute the ''US-only'' variables for the measures of G5 preference intensity and heterogeneity. Once again, many of the control variables are significant as expected, based on the findings of past studies. In Model 1, external debt service/exports and the time trend are significant at the 95% level or greater and positively associated with the number of PCs. The veto players measure (*CHECKS*) is negative and significant at the 90% confidence level, suggesting that the Fund is less likely to impose stringent conditionality when a borrower government faces strong domestic political opposition. In Model 2, GDP growth, the current account balance, debt service/exports, and short-term debt/reserves are all significant determinants of the number of PAs included in a Fund loan. In addition, *CHECKS* is once again negative and significant, as is *CRISES*, the measure of global financial instability. This latter result suggests the Fund is less likely to require *ex ante* policy reform of its borrowers in times of major international financial crises, when concerns about financial contagion are high. Both the IMF liquidity ratio (*LIQRATIO*) and the propensity score (*PSCORE)* are also positive and significant in Model 2; thus, the Fund appears to require more PAs of its borrowers when it has more resources to spend, and there is strong evidence that selection effects do exist in IMF lending. Finally, in Model 3, GDP growth, debt service/exports, short-term debt/reserves, the currency crash dummy, the time trend, LIBOR, and the propensity score are all statistically significant. In addition, *LIQRATIO* and *REVIEW* are positive and significant in Model 3, lending some support to the public choice view of IMF politics.

In sum, there is substantial evidence across the models that technocratic economic factors, as well as some of the political variables previously identified in the literature, are key determinants of IMF conditionality. Above all, these findings suggest that the IMF staff does indeed exercise substantial authority and autonomy over the design of IMF lending programs. In contrast to the loan size results, the models in Table 3 also suggest that G5 governments have significantly less influence over conditionality decisions. Indeed, G5 preference heterogeneity (whether measured in financial or geopolitical terms) has no statistically significant effect on the Fund's use of either PAs or benchmarks/targets.[45] In fact, preference heterogeneity among the Fund's principals only has a significant effect in one specific case (Figure 3): greater heterogeneity of G5 bank exposure

[45] Interactive charts for these types of conditions are available on request.

TABLE 3. Conditionality Regressions

Model	*1*	*2*	*3*	*4*	*5*	*6*
Variable	*Performance criteria*	*Prior actions*	*Benchmarks/targets*	*Performance criteria*	*Prior actions*	*Benchmarks/targets*
G5 bank exposure (log) (G5BANK)	−0.1307 [0.0834]	−0.2574 [0.5303]	−0.7091 [0.4464]			
Coefficient of variation, G5 bank exposure (COVG5BANK)	−0.0023* [0.0013]	0.0091 [0.0082]	0.0055 [0.0058]			
G5BANK*COVG5BANK	0.0003 [0.0003]	0.0023 [0.0027]	−0.0010 [0.0019]			
US bank exposure (log)				0.0335 [0.0528]	0.2728 [0.2336]	−0.4271** [0.1885]
US share, G5 bank exposure (%)	0.1958 [0.3337]	2.8430 [3.1214]	−1.0981 [2.4159]	−0.5800 [0.3630]	−3.1960 [2.2894]	0.9079 [1.5687]
UK share, G5 bank exposure (%)	−0.0683 [0.8407]	5.5339 [3.8823]	0.2559 [3.3620]			
Japanese share, G5 bank exposure (%)	0.5672 [0.5079]	1.8351 [4.3641]	−3.9343 [3.0202]			
German share, G5 bank exposure (%)	0.7088** [0.3338]	1.2779 [2.8069]	1.4527 [2.3880]			
French share, G5 bank exposure (%)	0.2180 [0.5454]	9.4437*** [3.2117]	0.2123 [2.7791]			
Mean G5 ''*S*'' score (G5S)	−0.0149 [0.0350]	−0.0635 [0.2788]	−0.3178 [0.2002]			
Coefficient of variation, G5 ''*S*'' scores (COVS)	−0.5679 [0.4177]	−3.4406 [5.1408]	−7.7528* [4.4803]			
G53*COVS	0.0101 [0.0269]	0.0215 [0.1972]	0.1981 [0.1383]			
US ''*S*'' score				−0.2237 [0.1867]	0.2551 [1.1233]	0.6497 [0.8808]
Years since last IMF loan	0.0024 [0.0077]	0.0099 [0.0419]	0.0008 [0.0308]	−0.0015 [0.0080]	0.0188 [0.0318]	−0.0036 [0.0269]
GDP (log)	0.3088 [0.7588]	0.4538 [0.5847]	0.0928 [0.5373]	0.4894 [0.6815]	−0.0032 [0.3738]	0.1608 [0.3080]
GDP per capita (log)	−1.2364 [0.9030]	0.4086 [1.1827]	0.2548 [0.8290]	−1.6203** [0.8019]	−1.3553 [1.1381]	−0.4455 [0.6336]
GDP growth (%)	−0.0225 [0.0179]	0.2514** [0.1236]	−0.1460* [0.0800]	−0.0126 [0.0142]	−0.0397 [0.0786]	−0.0559 [0.0845]
Current account/GDP (%)	−0.0051 [0.0098]	0.2107*** [0.0745]	−0.0157 [0.0619]	0.0009 [0.0087]	0.0264 [0.0553]	−0.0107 [0.0645]
External debt/GDP (%)	0.0021 [0.0023]	−0.0013 [0.0111]	0.0131 [0.0095]	0.0002 [0.0019]	0.0039 [0.0073]	0.0056 [0.0002]
External debt service/ exports (%)	0.0104*** [0.0040]	−0.0567** [0.0251]	0.0305* [0.0173]	0.0079** [0.0039]	−0.0108 [0.0173]	0.0181 [0.0145]
Short-term debt/reserves (log)	0.1520 [0.0932]	−1.3220*** [0.4780]	1.0316** [0.4189]	0.0654 [0.0544]	−0.1379 [0.2489]	0.4175 [0.2906]
Currency crisis (dummy)	0.1289 [0.1055]	0.6315 [0.4271]	−1.0771** [0.5286]	0.1997* [0.1052]	0.6872 [0.4320]	−0.4256 [0.4953]

Table 3. (Continued)

Model	*1*	*2*	*3*	*4*	*5*	*6*
Variable	*Performance criteria*	*Prior actions*	*Benchmarks/targets*	*Performance criteria*	*Prior actions*	*Benchmarks/targets*
Veto players (log)	−0.0963* [0.0545]	−1.5271*** [0.4888]	0.3024 [0.3264]	−0.1282** [0.0588]	−1.3188*** [0.4997]	0.0838 [0.3251]
Time trend	0.0482** [0.0195]	0.1396 [0.0861]	0.5201*** [0.0964]	0.0238 [0.0168]	0.2470*** [0.0696]	0.3505*** [0.0641]
Propensity score	−2.1481 [1.4080]	18.8576** [8.0531]	−12.3302* [6.6063]	−1.1536 [0.9997]	0.3603 [4.2683]	−5.1436 [4.3696]
IMF liquidity ratio (%)	−0.6997 [0.6893]	13.0485*** [4.6357]	5.7581** [2.8689]	−0.4306 [0.6751]	0.6547 [2.9040]	6.2436** [2.6609]
IMF quota review (dummy)	0.0793 [0.0925]	−0.0729 [0.4979]	1.6466*** [0.4449]	0.0213 [0.0687]	0.3440 [0.4249]	0.8873*** [0.3213]
Number of currency crises worldwide	0.0161 [0.0252]	−0.2548* [0.1533]	0.1835 [0.1204]	−0.0039 [0.0215]	0.1444 [0.1166]	0.0302 [0.0960]**
LIBOR (%)	0.0233 [0.0259]	−0.0157 [0.1317]	0.4495*** [0.1303]	−0.0013 [0.0217]	0.0287 [0.1173]	0.2442** [0.0969]
Constant		−15.4821 [17.6867]	−1.4111 [10.1818]		8.4982 [10.8665]	−6.8980 [6.5277]
Observations	167	122	157	167	122	157
Number of countries	37	26	35	37	26	35
Log-likelihood	−247.197	−119.446	−176.253	−248.513	−131.207	−183.521
Poisson's goodness-of-fit (χ^2)	73.253	193.874	289.206	75.884	211.006	349.886
$P > \chi^2$	0.983	0.000	0.000	0.993	0.000	0.000

(*Notes*. LIBOR, London Interbank Offer Rate; IMF, International Monetary Fund. Standard errors in brackets, Models 1 and 4, robust; Country fixed effects and two temporal splines not shown; *significant at 10%, **significant at 5%, and *** significant at 1%.)

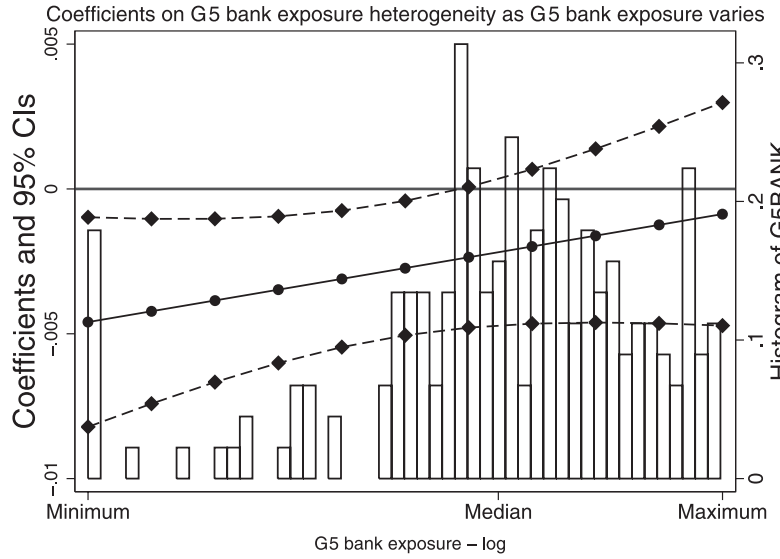

Fig 3. Performance Criteria: Interactive Effects
(*Note.* Coefficients on G5 bank exposure heterogeneity as G5 bank exposure varies.)

(*COVG5BANK*) results in fewer PCs, but only at low levels of aggregate G5 exposure (*G5BANK*).

This result provides additional support for the ''logrolling'' view of politics within the EB. G5 governments appear to support each other's financial interests by approving loans with less extensive conditionality, but only in cases where the borrower is of relatively limited financial importance to the group as a whole. Indeed, when G5 collective interests are more intense (that is, as values of *G5BANK* approach the median value in the data set), the negative coefficient on *COVG5BANK* loses statistical significance. Similarly, G5 financial and geopolitical preference heterogeneity has no significant effect in the remaining conditionality models. Finally, the conditionality models also offer some evidence that certain G5 countries are better able to achieve their interests within the EB than others. Specifically, Germany and France appear to be less successful than their G5 counterparts in securing preferential treatment for countries they deem financially important: IMF loans contain *more* PCs as German banks' share of total G5 bank exposure increases, and they contain *more* PAs in cases where French banks are more heavily exposed. In contrast, the variables measuring American, British, and Japanese bank exposure shares have no significant effect on conditionality outcomes.

Drawing on the statistically significant results from Tables 2 and 3, Table 4 presents substantive quantities of interest illustrating the impact of 1 *SD* increases in the G5 preference heterogeneity variables (*COVG5BANK* and *COVS*) at different levels of G5 preference intensity (*G5BANK* and *G5S*), holding all other variables constant at their means. Three sets of first differences are presented (i) predicted changes in loan size as G5 bank exposure heterogeneity increases; (ii) predicted changes in loan size as G5 ''*S*-score'' heterogeneity increases; and (iii) predicted changes in the number of PCs as G5 bank exposure heterogeneity increases. In other words, Table 4 illustrates the substantive impact of the marginal effects presented in Figures 1–3.

As the first differences illustrate, a 1 *SD* increase in G5 bank exposure heterogeneity (*COVG5BANK*) leads to substantial reductions in IMF loan size (''distributional conflict''), but only at medium to high levels of aggregate G5 bank

TABLE 4. First Differences, G5 Preference Heterogeneity*

Predicted loan size, amount/quota (AMTQTA), all variables at means: 0.89	
Values of G5 bank exposure (log)	*Predicted change in loan size (AMTQTA)*
G5BANK = −3.38 (−1.5 *SDs*)	−13.60%
G5BANK = 0.45(mean)	−26.92%*
G5BANK = 4.28 (+1.5 *SDs*)	−41.97%*
Values of G5 UN Voting Affinity ("S" score)	*Predicted change in loan size (AMTQTA)*
G5S = −0.15 (−1.5 *SDs*)	−1.74%
G5S = 0.22 (mean)	28.43%
G5S = 0.58 (+ 1.5 *SDs*)	173.10%*
Predicted number of performance criteria (PCs), all variables at means: 5.78	
Values of G5 bank exposure (log)	*Predicted change in number of PCs*
G5BANK = −3.38 (−1.5 *SD*)	−1.26*
G5BANK = 0.45 (mean)	−0.57
G5BANK = 4.28 (+1.5 *SD*)	−0.17

(*Notes.* 1 *SD* change in G5 bank exposure heterogeneity [*COVG5BANK*] and G5 UN voting affinity heterogeneity [*COVS*], holding all other variables constant at means. Asterisks indicate significance at the 95% confidence level.)

exposure. Conversely, a corresponding increase in G5 UN voting affinity heterogeneity leads to very large *increases* in IMF loan size (''logrolling''), but only at high values of *G5S*. Finally, an increase in *COVG5BANK* leads to a reduction in the number of PCs included in a loan, but only when overall G5 financial interests are weak. These results further reinforce the notion that the direction and extent of G5 governments' influence over IMF lending varies across cases.

Ultimately, the statistical analysis provides strong support for the common agency theory of IMF decision making. In particular, it offers three critical insights about the politics of IMF lending. First, it illustrates that the United States does not unilaterally control IMF lending; rather, the G5 countries as a group exercise substantial influence, and the heterogeneity of their preferences is a key determinant of IMF lending policies. Second, the results illustrate that G5 governments' influence over IMF policymaking varies systematically across cases. In some instances, G5 preference heterogeneity leads to distributional conflict within the EB and the approval of smaller loans with more extensive conditionality, while in others it creates scope for ''logrolling'' and results in the approval of bailouts (large loans with fewer conditions). Finally, the models confirm that the Fund staff also exercises significant authority and autonomy in many IMF lending cases. In particular, staff autonomy is greatest in countries of lesser financial importance for the G5, including small countries in Latin America and the Caribbean such as Costa Rica, Jamaica, and Ecuador. Moreover, the models suggest that, in general, the staff enjoys greater autonomy and influence over the Fund's use of conditionality, while G5 governments exert greater control over decisions about loan size.

Conclusions

Who controls the IMF, and what explains variation in its lending policies across cases? In this article, I seek to answer this question using a common agency framework, in which lending decisions are influenced by the intensity and

heterogeneity of G5 governments' preferences, as well as the extent to which the IMF staff exercises autonomy or agency slack. The empirical analysis provides strong support for this framework and its empirical predictions. These findings have important implications for our understanding of the politics of IMF lending. Above all, they clearly illustrate that both the ''master'' and ''servant'' views in the literature paint overly simplistic and incomplete pictures of IMF behavior. While powerful states exert substantial influence over IMF decisions, this influence does not lie unilaterally with the United States, and it is partially constrained by the staff's autonomy. Likewise, the EB's ultimate authority circumscribes the staff's autonomy, despite its agenda-setting authority and lead role in negotiating and designing lending programs.

Thus, rather than rejecting existing political explanations of IMF lending, this article more clearly delineates the scope conditions under which competing theories of IMF politics hold true. As its critics argue, the Fund does indeed act as the servant of its largest shareholders in many high-profile cases, such as Korea, Brazil, and Argentina, while it acts as a largely autonomous bureaucracy in others. To some extent, prevailing stereotypes of the Fund among politicians, the media, and academics are therefore accurate. The results presented here, however, suggest that these one-dimensional explanations of IMF behavior are overly simplistic. In the end, ''who controls the IMF?'' is a complex question that can only be answered on a case-specific basis: the Fund is neither ''runaway bureaucracy'' nor ''lap dog'' in all cases, despite its critics' accusations.

In addition, this article has important policy implications for the current debate on reforming the Fund and its decision-making process. In particular, my findings cast doubt on the merits of proposals to further alter the distribution of EB votes to give developing countries a greater voice.[46] Implicit in many of these proposals is the assumption that reducing G5 influence will remove ''politics'' from IMF lending by enhancing the Fund's independence from the United States and other large shareholders. In contrast, my findings suggest that this outcome is highly unlikely to occur. Indeed, replacing G5 votes with those of other countries would not necessarily result in a more technocratic or independent IMF; rather, it would simply replace G5 governments' political interests with those of other large countries. Moreover, spreading voting power more evenly among a broader group of states would likely increase the scope for agency slack by exacerbating the problem of preference heterogeneity within the EB. Thus, reducing the influence of G5 domestic politics through voting reform might have the paradoxical effect of increasing the prevalence of bureaucratic politics in IMF lending.

More broadly, this article addresses an important yet under-researched question about IOs: what exactly do they do and why? Surprisingly, IR scholars have paid relatively little attention to the dynamics of IO policymaking, choosing instead to focus on questions about cooperation, institutional design, and compliance. While these are critical issues, the results presented here suggest that we can significantly enhance our understanding of IOs by focusing on the policies they make, rather than solely on the reasons they are created or why they vary in design. Furthermore, this study addresses a key question for both rationalist and constructivist IPE scholars: the relative influence of states and bureaucrats in IO policymaking. Rationalists have addressed this issue largely from a state-centric standpoint by focusing on agency slack and the logic of delegation (Hawkins et al. 2006). In contrast, constructivists have focused more extensively on the independent influence of IO bureaucrats, arguing that they are ''authorities in their own

[46] The IMF Executive Board approved a modest reallocation of voting rights and quotas in April 2008. See "IMF Executive Board recommends reforms to overhaul quotas and voice," Press Release No. 08/64, International Monetary Fund, March 28, 2008. For a detailed analysis of these reforms, see Linn, Bryant, and Bradford (2008).

right, and that authority gives them autonomy vis-à-vis states, individuals, and other international actors'' (Barnett and Finnemore 2004:5). My findings suggest that these approaches are complementary, and that we cannot explain IO behavior without considering the interests and influence of both sets of actors.

Finally, this article highlights the utility of common agency models of delegation for analyzing policymaking within a variety of different institutions. For instance, this framework might be applied usefully in the domestic context to analyze the extent to which central banks and regulatory agencies act independently of their legislative or executive principals. Likewise, we might explain variation in the policies of the World Bank, the European Union, and other formal IOs by focusing more closely on preference heterogeneity among these institutions' member-states. By focusing on preference heterogeneity as an important explanatory variable, we can generate clear, testable hypotheses about the relative influence of principals and agents in a wide variety of domestic and international institutions.

References

ABADIE, ALBERTO, AND GUIDO IMBENS. (2004) Large Sample Properties of Matching Estimators for Average Treatment Effects. Available at http://www.emlab.berkeley.edu/users/imbens/sme21jan04.pdf. (Accessed August 31, 2009.)

BAGEHOT, WALTER. (2006) *Lombard Street: A Description of the Money Market*. New York: Cosimo Classics. Originally published in 1873.

BARNETT, MICHAEL, AND MARTHA FINNEMORE. (2004) *Rules for the World: International Organization in Global Politics*. Ithaca: Cornell University Press.

BARRO, ROBERT, AND JONG-WHA LEE. (2005) IMF Programs: Who is Chosen and What are the Effects? *Journal of Monetary Economics* 52 (7): 1245–1269.

BECK, NATHANIEL. (2004) Longitudinal (Panel and Time Series Cross-Section) Data. Available at http://www.nyu.edu/gsas/dept/politics/faculty/beck/beck_home.html. (Accessed August 31, 2009.)

BECK, NATHANIEL, AND JONATHAN N. KATZ. (1995) What To Do (and Not To Do) With Time-Series Cross-Section Data. *American Political Science Review* 89(September):634–647.

BECK, NATHANIEL, JONATHAN N. KATZ, AND RICHARD TUCKER. (1998) Taking Time Seriously: Time-Series–Cross-Section Analysis With a Binary Dependent Variable. *American Journal of Political Science* 42: 1260–1288.

BERINSKY, ADAM. (1999) The Two Faces of Public Opinion. *American Journal of Political Science* 43 (4): 1209–1230.

BIRD, GRAHAM, AND DANE ROWLANDS. (2003) Political Economy Influences Within the Life-Cycle of IMF Programmes. *World Economy* 26 (9): 1255–1278.

BLUSTEIN, PAUL. (2001) *The Chastening: Inside the Crisis That Rocked the Global Financial System and Humbled the IMF*. New York: PublicAffairs.

BOUGHTON, JAMES. (2001) *The Silent Revolution*. Washington, DC: International Monetary Fund.

BRAMBOR, THOMAS, WILLIAM ROBERTS CLARK, AND MATTHEW GOLDER. (2005) Understanding Interaction Models: Improving Empirical Analyses. *Political Analysis* 14 (1): 63–82.

BRAUMOELLER, BEAR. (2004) Hypothesis Testing and Multiplicative Interaction Terms. *International Organization* 58 (4): 807–820.

BROZ, J. LAWRENCE. (2005) Congressional Politics of International Financial Rescues. *American Journal of Political Science* 49 (3): 479–496.

BROZ, J. LAWRENCE, AND MICHAEL BREWSTER HAWES. (2006) Congressional Politics of Financing the International Monetary Fund. *International Organization* 60 (1): 367–399.

CAMERON, A. COLIN, AND PRAVIN K. TRIVEDI. (2003) Essentials of Count Data Regression. In *A Companion to Theoretical Economics*, edited by Badi Baltagi. New York: Wiley-Blackwell.

CHANG, ROBERTO. (1999) Understanding Recent Crises in Emerging Markets. *Federal Reserve Bank of Atlanta Economic Review*, Second Quarter: 6–16.

CROCKETT, ANDREW. (1997) *The Theory and Practice of Financial Stability*. Princeton Essays in International Finance, No. 203. Princeton: International Finance Section, Department of Economics, Princeton University.

DREHER, AXEL, AND NATHAN JENSEN. (2007) Independent Actor or Agent? An Empirical Analysis of the Impact of US Interests on IMF Conditions. *Journal of Law and Economics* 50 (1): 105–124.

Dreher, Axel, and Jan-Egbert Sturm. (2006) Do IMF and World Bank Influence Voting in the UN General Assembly? KOF Working Paper No. 137, ETH Zurich.

Dreher, Axel, and Roland Vaubel. (2004a) Do IMF and IBRD Cause Moral Hazard and Political Business Cycles? Evidence From Panel Data (With Roland Vaubel). *Open Economies Review* 15 (1): 5–22.

Dreher, Axel, and Roland Vaubel. (2004b) The Causes and Consequences of IMF Conditionality. *Emerging Markets Finance and Trade* 40 (3): 26–54.

Ferejohn, John. (1986) Incumbent Performance and Electoral Control. *Public Choice* 50: 5–25.

Frankel, Jeffrey, and Andrew Rose. (1996) Currency Crashes in Emerging Markets: An Empirical Treatment. *Journal of International Economics* 41: 351–366.

Fratianni, Michele, and John Pattison. (2005) Who is Running the IMF: Critical Shareholders or the Staff? In *Multidisciplinary Economics: The Birth of a New Economics Faculty in The Netherlands*, edited by Peter de Gijsel, and Hans Schenk. Dordrecht: Springer.

Gartzke, Erik. (2006) The Affinity of Nations Index, 1946–2002. Version 4.0. Available at http://www.dss.ucsd.edu/~egartzke/. (Accessed August 31, 2009.)

Gold, Joseph. (1979) *Conditionality*. Pamphlet Series, No. 31. Washington DC: International Monetary Fund.

Gould, Erica R. (2003) Money Talks: Supplementary Financiers and International Monetary Fund Conditionality. *International Organization* 57 (3): 551–586.

Gould, Erica R. (2006) *Money Talks: The International Monetary Fund, Conditionality, and Supplementary Financiers*. Palo Alto: Stanford University Press.

Hawkins, Darren, David A. Lake, Daniel Nielson, and Michael J. Tierney. (2006) *Delegation Under Anarchy: States, International Organizations and Principal Agent Theory*. New York: Cambridge University Press.

Heckman, James J. (1979) Sample Selection Bias as a Specification Error. *Econometrica* 47 (1): 153–161.

Ho, Daniel, Kosuke Imai, Gary King, and Elizabeth Stuart. (2007) Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. *Political Analysis* 15 (3): 199–236.

IMF (International Monetary Fund). (2001) Financial Organization and Operations of the IMF. Pamphlet Series, No. 45 (Sixth Edition). Available at http://www.imf.org/external/pubs/ft/pam/pam45/contents.htm. (Accessed January 9, 2010.)

IMF (International Monetary Fund). (2002) What is the IMF? Available at http://www.imf.org/external/pubs/ft/exrp/what.htm. (Accessed June 20, 2007.)

IMF (International Monetary Fund). (2005) Conditionality—Factsheet. Available at http://www.imf.org/external/np/exr/facts/conditio.htm. (Accessed June 20, 2007.)

Joyce, Joseph. (2004) Adoption, Implementation, and Impact of IMF Programmes: A Review of the Issues and Evidence. *Comparative Economic Studies* 46 (3): 451–467.

Kenen, Peter B. (2001) *The International Financial Architecture: What's New? What's Missing?* Washington: Institute for International Economics.

Kiewiet, Roderick, and Mathew McCubbins. (1991) *The Logic of Delegation: Congressional Parties and the Appropriations Process*. Chicago: University of Chicago Press.

Knight, Malcolm, and Julio A. Santaella. (1997) Economic Determinants of IMF Financial Arrangements. *Journal of Development Economics* 54 (2): 405–436.

Leuven, Edwin, and Barbara Sianesi. (2003) PSMATCH2: Stata Module to Perform Full Mahalanobis and Propensity Score Matching, Common Support Graphing, and Covariate Imbalance Testing. Available at http://www.ideas.repec.org/c/boc/bocode/s432001.html. (Accessed August 31, 2009.)

Linn, Johannes, Ralph C. Bryant, and Colin I. Bradford. (2008) Experts Critique Proposal for International Monetary Fund Quota Reform. Washington, DC: Brookings Institution. Available at http://www.brookings.edu/opinions/2008/0409_imf_linn.aspx. (Accessed January 9, 2010.)

Long, J. Scott, and Jeremy Freese. (2003) *Regression Models for Categorical Dependent Variables Using Stata*. Revised edition. College Station, TX: Stata Press.

Martin, Lisa L. (2006) Distribution, Information, and Delegation to International Organizations: The Case of IMF Conditionality. In *Delegation and Agency in International Organizations*, edited by Darren G. Hawkins, David A. Lake, Daniel L. Nielson, and Michael J. Tierney. New York: Cambridge University Press.

Mussa, Michael. (2002) Reflections on Moral Hazard and Private Sector Involvement in the Resolution of Emerging Market Financial Crises. Paper presented at the Bank of England Conference on the Role of the Official and Private Sectors in Resolving International Financial Crises, July

23–24. Available at http://www.bankofengland.co.uk/publications/events/conf0207/mussa.pdf. (Accessed August 31, 2009.)

MUSSA, MICHAEL, AND MIGUEL SAVASTANO. (1999) *The IMF Approach to Economic Stabilization*. IMF Working Paper WP/99/104. Washington: Research Department, International Monetary Fund.

OATLEY, THOMAS, AND JASON YACKEE. (2004) American Interests and IMF Lending. *International Politics* 41 (3): 415–429.

PERSSON, TORSTEN, AND GUIDO TABELLINI. (2007) The Growth Effect of Democracy: Is It Heterogeneous and How Can It Be Estimated? NBER Working Paper 13150. Cambridge: NBER, June.

PRZEWORSKI, ADAM, AND JAMES VREELAND. (2000) The Effect of IMF Programs on Economic Growth. *Journal of Development Economics* 62: 385–421.

REYNAUD, JULIEN, AND JULIEN VAUDAY. (2008) *IMF and Geopolitics*. Working Paper 965. Frankfurt: European Central Bank, November.

RIEFFEL, LEX. (2003) *Restructuring Sovereign Debt: The Case for Ad Hoc Machinery*. Washington, DC: Brookings Institution Press.

SARTORI, ANNE E. (2003) An Estimator for Some Binary-Outcome Selection Models Without Exclusion Restrictions. *Political Analysis* 11: 111–138.

SIMMONS, BETH A., AND DANIEL J. HOPKINS. (2005) The Constraining Power of International Treaties: Theory and Methods. *American Political Science Review* 99 (4): 623–631.

SMITH, ROY C., AND INGO WALTER. (2003) *Global Banking*. New York: Oxford University Press.

SOUTHARD, FRANK A. JR. (1979) *The Evolution of the International Monetary Fund*. Essays in International Finance, No. 135. Princeton: Princeton University Press.

STEINWAND, MARTIN, AND RANDALL A. STONE. (2008) The International Monetary Fund: A Review of Recent Evidence. *Review of International Organizations* 3 (2): 123–149.

STONE, RANDALL. (2002) *Lending Credibility: The IMF and the Post-Communist Transition*. Princeton: Princeton University Press.

STONE, RANDALL. (2004) The Political Economy of IMF Lending in Africa. *American Political Science Review* 98 (4): 577–591.

STONE, RANDALL. (2008) The Scope of IMF Conditionality. *International Organization* 62 (4): 589–620.

THACKER, STROM. (1999) The High Politics of IMF Lending. *World Politics* 52: 38–75.

VAN HOUTVEN, LEO. (2002) *Governance of the IMF: Decision Making, Institutional Oversight, Transparency, and Accountability*. Pamphlet Series, No. 53. Washington, DC: International Monetary Fund.

VAUBEL, ROLAND. (1991) The Political Economy of the International Monetary Fund: A Public Choice Analysis. In *The Political Economy of International Organizations*, edited by Roland Vaubel, and Thomas Willett. Boulder: Westview Press.

VON STEIN, JANA. (2005) Do Treaties Constrain or Screen? Selection Bias and Treaty Compliance. *American Political Science Review* 99 (4): 611–622.

VREELAND, JAMES. (2003) *The IMF and Economic Development*. New York: Cambridge University Press.

VREELAND, JAMES. (2005) *The International and Domestic Politics of IMF Programs*. Unpublished manuscript. New Haven, CT, Yale University.

WILLETT, THOMAS. (2000) A Soft-Core Public Choice Analysis of the International Monetary Fund. Claremont Colleges Working Papers in Economics, 2000-56. Claremont McKenna College.

WILLETT, THOMAS. (2002) Toward a Broader Public Choice Analysis of the IMF. In *Organizing the World's Money*, edited by David Andrews, Randall Henning, and Louis Pauly. Ithaca: Cornell University Press.

WINSHIP, CHRISTOPHER, AND ROBERT D. MARE. (1992) Models for Sample Selection Bias. *Annual Review of Sociology* 18: 327–350.