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De Facto Bank Bailouts

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Abstract

The U.S. government uses its voting power to direct IMF loans to countries where U.S. banks are exposed to sovereign default (a de facto bailout). This effect is stronger in years when the costs of direct bailouts are higher and is also found among major European IMF members. We find that de facto bailouts reduce government incentives to default and that U.S. Congressional voting on IMF funding is consistent with a private interest view of government. Overall, we identify an alternative mechanism through which governments can backstop the losses of large multinational banks.

I. Introduction

The events that occurred during and after the 2007–2009 global financial crisis reminded everyone of governments' willingness to bail out banks and sparked renewed interest in understanding the economic trade-offs associated with bank bailouts. In this article, we are interested in understanding the costs associated with bank bailouts from the politician's point of view.

First, there is a political cost attached to bank bailouts because using taxpayer money to bail out banks is rarely a popular decision. The academic literature has shown that politicians either avoid bailing out banks or take actions to delay bank failure altogether when political costs are high (see Brown and Dinc (2005), Liu and Ngo (2014), and Bian, Haselmann, Kick, and Vig (2019)). Second, bank bailouts entail a significant fiscal cost. For example, as the financial crisis spread around the world, there was an unprecedented wave of bank bailouts globally. Laeven and Valencia (2010) estimate that governments around the world spent an average of 5% of GDP bailing out their banks. Even if governments avoid large, immediate recapitalization expenditures by choosing instead to backstop bank losses with large guarantees, these guarantees can also have a devastating impact on public finances (Acharya, Drechsler, and Schnabl (2014), Leonello (2018)). Indeed, several papers have now documented that bailouts significantly weaken governments'

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fiscal positions and their own credit standing (see Acharya et al. (2014), Fratzscher and Rieth (2019), and Mäkinen, Sarno, and Zinna (2020)).

Given these costs, are there alternative and subtler ways for the government to prop up troubled banks, to obfuscate a bailout and to minimize voter backlash, or to reduce the burden on domestic resources? Our central argument is that the U.S. government uses its voting power and political influence to direct IMF loans to defaulting sovereigns where U.S. banks have large exposures to losses from default – a de facto bailout.[1] We argue that IMF loans reduce losses to U.S. banks primarily through loan conditionality, which typically enforces the payment of external debt in arrears from recipient governments. Thus, de facto bailouts not only spread the cost of absorbing bank losses across IMF member countries but also allow U.S. politicians to obfuscate bailouts, thus minimizing public condemnation.[2]

Using the Bank for International Settlements (BIS) consolidated banking statistics, we construct a measure of U.S. bank exposure to 47 developing countries between 1983 and 2016, covering 269 IMF loans. Our analysis reveals that the likelihood of a defaulting sovereign receiving an IMF loan increases significantly with U.S. bank exposure to that country. Specifically, a 1-standard-deviation increase in U.S. bank exposure increases the probability that a defaulting sovereign receives a loan by 97%. Next, we show that the likelihood of receiving a de facto bailout varies with the relative costs of direct bailouts: the likelihood of receiving de facto bailouts is higher when the fiscal position of the U.S. government is weaker and during federal election years. These findings hold in a number of robustness tests as well as an instrumental variables estimation to address endogeneity.

Despite U.S. dominance in IMF voting, the USA cannot unilaterally determine the allocation of IMF loans. Thus, other countries must vote in line with the USA. Accordingly, we investigate whether other major IMF member countries' exposure also determines the allocation of IMF loans. Of the major IMF members, we find that the exposure of German, French, and Italian banks to a defaulting sovereign also significantly increase the likelihood of a de facto bailout. We do not find that de facto bailouts are more likely for Japanese banks even though their foreign exposure is the most correlated with that of U.S. banks, nor do we find that de facto bailouts are more likely for traditional allies of the USA like the U.K., Canada, or Australia. We argue that this evidence is suggestive that the U.S. and major European governments trade IMF votes on a quid-pro-quo basis. Therefore, de facto bailouts are a broader phenomenon than just U.S. influence over the IMF.

We then investigate two ex ante implications of our de facto bailout hypothesis. First, we examine the incentives for governments to default. On the one hand, because the existence of de facto bailouts reduces foreign creditor losses from sovereign default, such bailouts also reduce the risk of sanction or financial exclusion upon default, thus increasing incentives to default. On the other hand, de facto

[1]The USA is by far the largest IMF member, with 16.52% of the vote share. We discuss these institutional details in Section II.

[2]We use the term *de facto bailout* to describe the more general case of the state backstopping bank losses, large or small, rather than only the case where the state rescues banks that are on the brink of failure.

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bailouts often come with conditions attached to ensure repayment to international creditors as well as to protect the investment of the (major) IMF members. These conditions typically enforce severe austerity measures and have been argued to increase the severity of economic contractions (Steinwand and Stone (2008)), at least in the short run (a situation that politicians seeking reelection find highly undesirable). As a consequence, these political costs reduce the incentives to default. On net, we find that U.S. bank exposure significantly reduces the likelihood of sovereign default.

Moreover, we ask whether these observed patterns can be explained by a public interest or a private interest view of government. Our argument is that U.S. politicians are responsive to special interest pressure from the banking lobby. However, it is possible that politicians act in the public interest if their constituency is reliant on lending from banks that are exposed to sovereign losses. To tease out which view of government is driving our findings, we examine congressional voting patterns related to IMF funding increases. Funding increases for the IMF expand its capacity to bail out sovereigns, so a vote in favor of an increase is a vote in favor of de facto bailouts. We construct a constituency-level measure for local banks' exposure to sovereign default to capture the public interest view and use campaign contributions from the finance industry to proxy for the private interest view. We find that our constituency exposure variable cannot explain congressional voting patterns for IMF funding increases. However, campaign contributions significantly increase the likelihood of a "yes" vote.

Finally, we confirm that exposed U.S. banks do indeed benefit from IMF loans to defaulting sovereigns by examining the implications for shareholder wealth. Specifically, we conduct an event study around the dates that IMF loans are announced and find that U.S. banks exposed to sovereign default experience, on average, a 3% cumulative abnormal return (CAR) over the event window. Thus, IMF loans, although directed to foreign governments, ultimately reach U.S. banks.

Our article is related to the literature studying the economic trade-offs associated with bank bailouts. On the one hand, bailouts may correct market failures and avoid the negative externalities associated with large bank failures (see Gorton and Huang (2004), Giannetti and Simonov (2013)). On the other hand, critics argue that bailouts exacerbate moral hazard problems in the banking industry (see Gropp, Hakenes, and Schnabel (2011), Dam and Koetter (2012), Farhi and Tirole (2012), Duchin and Sosyura (2014), and Chari and Kehoe (2016)). In addition, bank bailouts have been shown to be detrimental to public finances (see Acharya et al. (2014), Leonello (2018), Fratzscher and Rieth (2019), and Mäkinen et al. (2020)) and to politicians running for office (see Bian et al. (2019)). We contribute to this literature by identifying an alternative mechanism through which the U.S. government (and other major economies) can backstop banking losses (i.e., the use of IMF funds to bail out sovereigns to which their own banks are exposed: a de facto bailout). This indirect bailout mechanism reduces both the number of domestic resources used and the degree of discontent among voters, two highly desirable outcomes for politicians.

Our article contributes to the literature on sovereign default and bank bailouts. The conventional wisdom in this literature is that defaulting sovereigns can protect

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their domestic financial system through selective defaults only on foreign bondholders or selective bailouts to protect local banks. However, in reality, selective defaults are difficult given the extensive trading in government bonds (see Broner, Martin, and Ventura (2010)), and although bailouts for individual banks are possible, it is much more difficult to bail out the entire banking system, especially if the government itself is facing severe financial difficulties. Indeed, recent work by Gennaioli, Martin, and Rossi (2014), (2018) shows that government defaults impose significant costs on the domestic economy because they damage the balance sheets of domestic banks, which, in turn, reduces the credit supply of banks that are exposed to sovereign risk. Accordingly, a government whose domestic banks are heavily exposed to debt has fewer incentives to default (see Gennaioli et al. (2014)). We complement this literature by noting that bank bailouts can come not only from the defaulting government but also from international institutions such as the IMF. We also complement the finding of Gennaioli et al. (2014) by showing that the exposure of U.S. banks to a government (i.e., the likelihood of receiving de facto bailouts) also reduces the incentives for that government to default.

II. Background and Argument

The International Monetary Fund (IMF) is an organization of 189 member countries that works to support trade, growth, and financial stability by providing assistance to countries facing balance-of-payment problems.

The IMF obtains its financial resources from member country subscriptions, which are known as quotas. Each country's quota broadly represents its relative position in the world economy, calculated using various measures of output and trade. Quotas also play an important role in determining members' voting power and ultimately the IMF's governance. Each member country has 250 basic votes, plus one additional vote for each part of its quota equal to 100,000 Special Drawing Rights (SDR).[3] Since basic votes comprise a trivial fraction of total votes, voting power and control of IMF decisions are biased toward larger member countries. The USA is the largest member with a quota of SDR 82.9942 billion (or approximately USD 115.2 billion), which buys it 831,407 votes (or a 16.52% vote share). By contrast, Vanuatu has a quota of SDR 23.8 million and only 1,703 votes (or a 0.03% vote share).[4]

This imbalance of power gives theUSA in particular control over IMF decision making and allows it to direct IMF loans for reasons other than the prevailing economic needs of the recipient countries.[5] Indeed, a growing number of studies

[3]The value of the SDR currency is determined by summing together the values, in U.S. dollars, of a basket of five major currencies: the U.S. dollar, the euro, the Japanese yen, the pound sterling, and the Chinese renminbi.

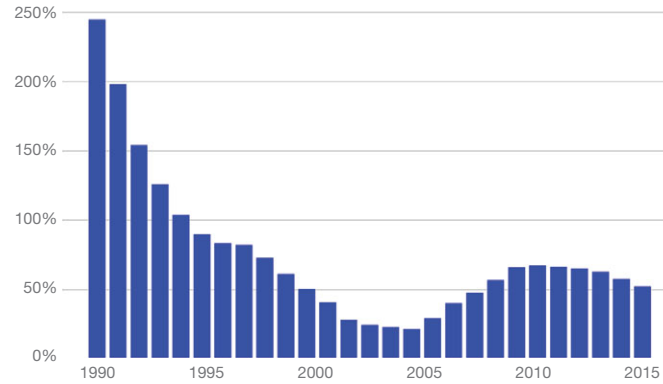
[4]See https://www.imf.org/external/np/sec/memdir/members.aspx for current information on quotas and voting power.

[5]Examples of American influence over the IMF can be found in media headlines such as "IMF Begins Work on Bailout for Argentina, with a U.S. Blessing" (see https://www.wsj.com/articles/imf-begins-negotiations-with-argentina-over-large-credit-line-1526664127) and "Rescuing Russia: A Special Report. The Bailout of the Kremlin: How the U.S. Pressed the IMF" (see https://www.nytimes.com/1998/07/17/world/rescuing-russia-special-report-bailout-kremlin-us-pressed-imf.html).

FIGURE 1

U.S. Banks Foreign Exposures Over Capital

Figure 1 shows a 5-year moving average for the aggregate foreign exposure of the nine largest U.S. banks, as a percentage of bank capital, to a sample of 47 developing countries between 1983 and 2016.



have now demonstrated that the USA uses its voting power to direct loans to countries that are more economically (i.e., through trade) or politically connected to it (see Thacker (1999), Stone (2004), Barro and Lee (2005), Dreher and Jensen (2007), and Dreher, Sturm, and Vreeland (2009)).

In this study, we argue that the U.S. banking lobby can also influence IMF decisions via its connection to the White House and Congress. In particular, international lending by U.S. banks exposes them to losses in the event of sovereign default. These losses can be substantial and are concentrated among money center banks (those with the greatest political clout). For example, Huizinga and Sachs (1987) report that the nine largest U.S. money-center banks held Latin American debt amounting to 176% of their capital during the Latin American debt crisis. Using data from the Federal Financial Institutions Examination Council (FFIEC), Figure 1 plots the exposure of the nine largest U.S. banks, as a fraction of their total capital, to developing countries in *our* sample over our sample period. Although we can see that exposure has declined over time, it remains significant at approximately 50% of capital.

Consequently, exposed banks have great incentives to lobby for government support. Unlike a domestic crisis in which support can come in the form of a direct bailout, the U.S. government has an alternative lever to pull when dealing with a foreign sovereign crisis: its influence over the allocation of IMF loans to defaulting sovereigns. By propping up countries struggling to make debt payments, the IMF and the U.S. government can indirectly absorb U.S. bank losses, whether these losses are large enough to cause bank failure or not – a de facto bailout.

A. Why Not Simply Bail Banks Out Directly?

We argue that the benefits of de facto bailouts are large. First, the use of the IMF obfuscates the bailout from the voting public and thus reduces its political costs. Recent evidence from Bian et al. (2019) suggests that politicians

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systematically avoid bailing out banks when the political costs of doing so are high (e.g., in election years or if political competition is high). As Vaubel (1986), (1991), (1996) would put it, delegating "dirty work" to international organizations allows governments to avoid political backlash. Next, there are domestic budgetary considerations. Broadly, direct bank bailouts can constitute either recapitalization of troubled banks by the state and/or the provision of guarantees on bank assets and liabilities by the state. Recent history shows the strain that state recapitalizations can place on public finances and on governments' own credit standing (e.g., the Troubled Asset Relief Program in the USA and the subsequent U.S. government rating downgrade). Even if governments avoid large, immediate recapitalization expenditures by choosing to backstop bank losses with large guarantees, these guarantees can still have a devastating impact on public finances (Acharya et al. (2014), Leonello (2018)).

De facto bailouts reduce the strain on public finances in two ways. First, IMF loans reduce losses to external creditors through loan conditionality, which enforces the payment of external debt in arrears from recipient governments. Evidence of this comes from Kentikelenis, Stubbs, and King (2016), who examine the conditionality in IMF loan agreements between 1985 and 2014 and show that 28% of all identified conditions related to the payment of external debt in arrears. For example, the 1990 package for Ecuador contained a provision to "eliminate arrears to Paris Club creditors."[6] Thus, rather than the U.S. government needing to backstop foreign lending losses through, say, the use of guarantees, IMF loans can be used to pay debt in arrears to U.S. banks directly.

Second, since other IMF member countries share the cost of a de facto bailout, this reduces the negative impact on U.S. resources. Therefore, from the point of view of the U.S. government, de facto bailouts reduce the need for direct capital outlays or the provision of guarantees to the U.S. banking sector in the face of sovereign default to which U.S. banks are exposed.[7]

B. The Role of Other Major Member Countries

Despite these benefits, there is a trade-off to using the IMF's money: transaction costs increase. Specifically, the USA has to leverage its influence in the IMF and convince other members to agree. Thus, a de facto bailout may be a less effective tool when the major IMF shareholders disagree or if bank failure is imminent. To understand how large these transaction costs may be, we examine the concentration of voting power among the other major IMF member countries.

The top 19 countries (those with a vote share greater than 1%) collectively control 67.89% of the vote, and thus IMF decision making is largely determined by

[6] See http://www.imfmonitor.org/conditionality.html.

[7] The corollary to this is that countries that lack the political clout to direct IMF loans to defaulting sovereigns to which their own banks are exposed only have the option of direct bailouts at their disposal to shore up the banking system. While an extensive empirical investigation of this possibility is outside the scope of this article, we provide some suggestive evidence that it is true in Table B5 of the Supplementary Material.

this small group of countries.[8] For most of our sample period, the countries with the greatest vote share, other than the USA, were Japan, Germany, France, the U.K., and Italy. However, in 2015, the IMF and the U.S. Congress approved an increase in IMF funding, which also resulted in a significant increase in the voting power of China, India, Russia, and Brazil and shifted the distribution of power away from continental Europe. All these countries are now in the top 10 countries in terms of voting power, with China benefiting the most from the policy shift and ranking third overall in terms of voting power. Even so, the European Union (EU), as a block, continues to command 25.54% of the vote share.

Given the concentration of power in so few countries, we argue that the USA can influence the direction of loans with relative ease.[9] There are several reasons why other countries would vote in line with the USA. First, it may be the case that certain countries' foreign exposure is correlated with that of the USA, making it economically sensible to vote in line with the USA. Second, many countries (the U.K., Canada, and Australia) are traditional allies and so would likely support the USA in return for the sustained (non-IMF) benefits stemming from that alliance. Third, other countries, especially those in Europe (e.g., Germany, France, Italy, and Spain), have bank-dominant financial systems with significant foreign exposure. Thus, these countries may vote in line with the USA under a quid-pro-quo arrangement. That is, voting in line with the USA may mean that these countries gain U.S. support for de facto bailouts that benefit non-U.S. banks. We formally investigate the role of other major IMF members in Section IV.C.

C. Government Incentives to Default

One implication of our de facto bailout hypothesis is that it may alter governments' ex ante incentives to default. The conventional wisdom in the literature on sovereign default and bank bailouts is that governments repay their debts to avoid foreign sanctions or exclusion from international financial markets. However, in practice, such sanctions are rarely observed, and market exclusion is transitory. Thus, to rationalize the low frequency of defaults, recent work has argued that defaults must also impose a large cost on the domestic economy and that governments meet debt obligations to avoid this cost (Arellano (2008), Hébert and Schreger (2017)).

Following this line of work, Gennaioli et al. (2014), (2018) show that government defaults impose significant costs on the domestic economy because they damage the balance sheets of domestic banks who are exposed to their sovereign debt, which, in turn, leads to a contraction of the domestic credit supply. Our de facto bank bailout hypothesis implies that exposure to external creditors (especially U.S. banks) increases the chances of an IMF loan conditional on sovereign default. Thus, if economic sanctions are imposed by foreign creditors because they experience losses from default and if IMF loans backstop these losses, then we expect the

[8]These are the United States (16.52%), Japan (6.15%), China (6.09%), Germany (5.32%), France (4.03%), the United Kingdom (4.03%), Italy (3.02%), India (2.64%), Russia (2.59%), Brazil (2.22%), Canada (2.22%), Saudi Arabia (2.02%), Spain (1.92%), Mexico (1.8%), the Netherlands (1.77%), South Korea (1.73%), Australia (1.34%), Belgium (1.3%), and Switzerland (1.18%).

[9]There is no way for us to verify this since IMF voting is confidential.

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risk of future sanctions to be lower in the presence of de facto bailouts. Other things equal, this implies that governments of countries where U.S. banks have greater exposure are more likely to default.

Although de facto bailouts have the benefit of reducing the risk of sanctions or exclusion from international finance, they can potentially have other negative consequences for the domestic economy. Certainly, the literature assessing the outcomes of IMF programs has delivered mixed findings, with many arguing that these programs have a negative impact on the recipient country's growth and its other outcomes such as education and employment (see Steinwand and Stone (2008) for a comprehensive review). One reason for these negative outcomes is the loan conditions imposed on the recipient countries. Loan conditionality is used not only to force payment of debt to foreign creditors, as discussed above, but also to maximize the chances of the IMF loan being repaid, thus protecting U.S. investments and those of other major IMF members (e.g., severe austerity measures, various reforms to improve efficiency, and limits on additional debt issuance). Thus, from the point of view of the recipient country, a de facto bailout further inhibits the ability of the government to insulate the domestic economy. This discussion implies that accepting an IMF loan may lead to higher unemployment and lower growth, at least in the short run, which are undesirable outcomes for politicians seeking reelection and so are likely to reduce the incentives to default.

Thus, governments to which U.S. banks are heavily exposed face a trade-off. On the one hand, de facto bailouts reduce the risk of sanctions being imposed upon default, which increases the incentive to default. On the other hand, de facto bailout conditions may exacerbate economic contractions, thus reducing the likelihood of sovereign default. The impact that de facto bailouts have on incentives to default is therefore an empirical issue, one that we investigate explicitly in Section IV.D of the article.

D. Anecdotal Evidence

1. The Greek Debt Crisis

In Oct. 2009, the Greek government revealed that Greece's budget deficit was 15.4% of GDP, more than double its projected deficit of 6.7%. This triggered a collapse in the Greek bond market and led to concerns over the Greek government's ability to meet its financial obligations. At the time, large U.S. banks had only modest exposure to the Greek government, totaling roughly USD 6 billion.[10] In contrast, large non-Greek European banks (especially German and French banks) were much more exposed, with estimates putting their exposure to the Greek government at approximately USD 50 billion. The most exposed banks were the Belgo-French lender Dexia (39% of equity); BPI (29% of equity), and BCP (13% of equity) of Portugal; Commerz (27% of equity), Postbank (21% of equity), and DZ Bank (11% of equity) of Germany; BPCE (13% of equity), BNP Paribus (8% of

[10]See FFIEC Reports – Statistical Releases E.16 Country Exposure Lending Survey and Country Exposure Information Report, Dec. 2009.

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equity), and Societe Generale (6% of equity) of France; and ING (6% of equity) of the Netherlands.[11]

By Apr. 2010, it had become clear that Greece would not be able to meet its debt obligations, which led to its credit rating being slashed to BB+ by S&P. Having just bailed out their own banking sectors at the height of the financial crisis, European governments risked political upheaval if they were to step in to absorb the losses of the same financial institutions once again.[12]

What followed was a series of massive EU-IMF-funded bailout programs orchestrated by the German and French governments (USD 146 billion in 2010, USD 172 billion in 2012, and USD 94 billion in 2015) in exchange for severe austerity measures that were broadly opposed by the Greek population. The bailout packages were also criticized for benefiting the creditors of Greece rather than Greece itself. For example, roughly USD 40 billion of the 2012 bailout never even reached Athens but instead went directly to its international creditors.[13] This example highlights that de facto bailouts are a broader phenomenon than just U.S. influence over the IMF (any country or group of countries with the political clout needed to direct bailout funds from international organizations will likely do so to protect their own banks).

2. The Latin Debt Crisis

In 1982, there was a sudden intensification of the debt crises of industrializing countries that exposed the insufficiency of the capital reserve levels of U.S. multinational banks in buffering against such external shocks. Specifically, in Aug. 1982, Mexico announced that it would not be able to meet its financial obligations on debts totaling USD 81 billion, of which USD 23 billion was owed to U.S. multinationals. The problem was exacerbated in November and December when, first, Argentina declared that it was experiencing financial difficulty and second, Brazil notified its creditors that it would not be able to honor payments due on external debt exceeding USD 79 billion. In short, the 9 largest banks in the USA had lent over 140% of their capital to these 3 countries alone, which totaled USD 30 billion.

The IMF's resources were considerably strained, and following a meeting of the IMF member countries, the U.S. brokered an agreement to increase IMF resources by 47% or approximately USD 32 billion, of which the U.S. share (which needed the approval of Congress) was on the order of USD 8.4 billion.

At the time, America was experiencing one of its worst recessions since World War II, so even before legislation authorizing the funds was sent to Capitol Hill by

[11]See "Greece Debt Crisis: How Exposed Is Your Bank?" The Guardian, June 17, 2011. Available at https://www.theguardian.com/news/datablog/2011/jun/17/greece-debt-crisis-bank-exposed (Accessed Mar. 3, 2021).

[12]For example, the French and German governments alone released bailout packages totaling almost USD 1.2 trillion. One of the beneficiaries of the bailout funds was Dexia (the bank most exposed to the Greek government), which received an USD 8.5 billion bailout in 2008 (a cost that was shared equally between the Belgium and French governments).

[13]See "Greek Bailout Deal a Farce to Benefit Banks at the Expense of Greece" Agustino Fontevecchia, Forbes, Feb. 21, 2012. Available at https://www.forbes.com/sites/afontevecchia/2012/02/21/greek-bailout-deal-a-farce-to-benefit-banks-at-the-expense-of-greece/?sh=501ab9972742 (Accessed Mar. 3, 2021).

the Reagan administration, there was strong opposition against the IMF quota increase. The general consensus was that the IMF quota increase was nothing but a sophisticated bailout for the large U.S. banks (Reinicke, 1995). Despite this, the Reagan administration, the regulatory authorities, and private banks continued to push their agenda. They argued that not approving an increase in IMF resources would lead to a financial disaster for heavily exposed multinational banks, which would ultimately lead to a domestic and international crisis not only in the financial sector but also in the real economy because a credit crunch would be the most likely outcome if Latin American countries defaulted.

The Senate was quick to respond and approved a bill authorizing a USD 8.4 billion increase in the USA. IMF contribution on the June 8, 1983. Nevertheless, progress in the House was much slower, where the bill was narrowly approved on the Aug. 3, 1983, winning 217–211.

III. Data

We gather data on U.S. banks' foreign exposure from the BIS' consolidated banking statistics. For a given country, the BIS provides quarterly information on the claims (e.g., loans, deposits, debt, and equity securities) held by banking industry in a foreign state. We use this information to estimate an annual measure of U.S. banks' foreign exposure to a sample of 47 countries between 1983 and 2016. Appendix A lists the countries in our sample. ln(US_BANK_EXPOSURE) is measured as the natural logarithm of all claims that U.S. banks have on entities in a foreign country as a percentage of their total exposure worldwide.[14]

The main benefit of the BIS data is that it allows us to ask whether other major IMF members' bank exposure (e.g., Japan or Germany) also increases the likelihood that a defaulting sovereign receives an IMF loan, which we consider in Section IV.C. The Federal Financial Institutions Examination Council (FFIEC) also provides data on international exposure; however, this is only for U.S. banks. We make use of this alternative data source in robustness tests.

We identify historical episodes of sovereign debt defaults (SOVEREIGN_DEFAULT) over the sample period from the Harvard Business School (HBS) Global Crisis Data.[15] We also collect other country-level macroeconomic data (such as GDP, GDP_GROWTH_RATE, INFLATION, POPULATION, and the EXCHANGE_RATE) from the World Bank.

Finally, we obtain data on each country's openness and economic and political connectedness with the USA. The variables include a capital account openness index (ECONOMIC_OPENNESS) from the IMF, TRADE_WITH_US (measured as the sum of exports and imports and scaled by U.S. GDP) from the World Bank, each country's voting similarity with the USA in the United Nations (UN) General

[14]These claims are estimated on an immediate counterparty basis (i.e., they are allocated to the country of residence of the contract obligor).

[15]A sovereign default is defined as the failure of a government to meet a principal or interest payment on the due date (or within the specified grace period). These episodes include instances in which rescheduled debt is ultimately extinguished in terms less favorable than the original obligation (Reinhart and Rogoff (2009)). See www.hbs.edu/behavioral-finance-and-financial-stability/data/Pages/global.aspx.

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TABLE 1

Summary Statistics

Table 1 reports summary statistics. Panel A presents selected country characteristics for an unbalanced panel of 47 countries' recipients of IMF loans between 1983 and 2016. Panel B presents bank-level statistics around the time of IMF loan announcements. Panel C presents statistics for members of Congress who took part in IMF funding increases votes.

	No. of Obs.	Average	Std. Dev.	Min	Median	Max
Panel A. Country						
IMF_LOAN	1,598	0.28	0.45	0.00	0.00	1.00
IMF_LOAN_AMOUNT	269	2,987.84	7,986.80	15.00	300.20	62,388.90
ln(IMF_LOAN_AMOUNT)	269	6.08	1.85	2.71	5.70	11.04
SOVEREIGN_DEFAULT	1,529	0.26	0.44	0.00	0.00	1.00
US_BANK_EXPOSURE	1,598	0.01	0.02	7.58E-08	1.22E-03	0.14
ln(US_BANK_EXPOSURE)	1,598	−6.79	2.47	−16.39	−6.71	−1.98
LOCAL_BANK_EXPOSURE	1,447	0.39	0.33	0.02	0.29	3.12
ln(LOCAL_BANK_EXPOSURE)	1,447	−1.24	0.79	−4.17	−1.25	1.14
GDP	1,565	0.22	0.73	0.00	0.04	11.19
GDP_GROWTH	1,550	3.71	4.43	−36.70	4.10	33.74
INFLATION	1,550	68.25	578.48	−27.05	7.28	13,611.63
POPULATION	1,598	82.04	230.17	0.24	16.99	1,378.67
EXCHANGE_RATE	1,520	2.19	4.19	−22.11	2.53	22.63
ECONOMIC_OPENNESS	1,551	0.54	0.35	0.00	0.61	1.00
TRADE_WITH_US	1,528	0.11	0.12	0.00	0.07	0.96
TEMPORARY	1,598	0.09	0.28	0.00	0.00	1.00
UN_VOTING_SIMILARITY	1,487	0.26	0.14	0.00	0.22	1.00
POLITY	1,520	4.20	6.06	−9.00	7.00	10.00
Panel B. Bank Holding Company						
EXPOSED	29,309	0.01	0.11	0.00	0.00	1.00
EXPOSURE_TO_CAPITAL | EXPOSED = 1	348	0.18	0.33	2.25E-04	0.04	1.79
BANK_SIZE	29,309	14.64	1.66	12.12	14.29	20.25
RETURN_ON_ASSETS	29,309	0.20	0.42	−2.56	0.29	0.67
LEVERAGE_RATIO	27,088	0.09	0.04	0.04	0.09	0.86
TIER1_RATIO	27,088	0.13	0.07	0.05	0.12	1.88
SHORT_TERM_WHOLESALE_FUNDING	29,309	0.17	0.12	1.30E-06	0.15	0.55
RISK_WEIGHTED_ASSETS	27,088	0.72	0.12	0.40	0.72	1.62
LOANS_TO_DEPOSITS	29,309	0.88	0.18	0.39	0.87	1.49
Panel C. Congress						
FINANCE_CONTRIBUTIONS	1,222	0.18	0.10	0.00	0.16	0.68
CONSTITUENCY_EXPOSURE	1,126	0.26	0.23	0.00	0.20	0.97
STATE_EXPORTS_TO_GDP	1,696	0.12	0.33	1.76E-03	0.06	2.56
IDEOLOGY	1,696	0.02	0.40	−0.68	−0.02	0.88
DEMOCRAT	1,696	0.51	0.50	0.00	1.00	1.00
HOUSE	1,696	0.77	0.42	0.00	1.00	1.00

Assembly taken from the Harvard Dataverse (UN_VOTING_SIMILARITY), a democracy index (POLITY) from the Center for Systemic Peace, and a list of temporary members of the UN Security Council from the UN (TEMPORARY). Appendix B provides detailed definitions of all the main variables used in this study.

Panel A in Table 1 presents summary statistics for selected country-level characteristics. Our sample includes 269 IMF loans.[16] Detailed information on these loans (such as type, date of arrangement, and amount agreed upon (IMF_LOAN_AMOUNT)) is from the IMF's Monitoring of Fund Arrangements (MONA) database. Finally, there are 55 unique sovereign defaults corresponding to 393 country-year observations in which the sovereign is considered to be undergoing a sovereign debt crisis in the HBS Global Crisis Data. The average IMF_LOAN_AMOUNT is just under USD 3 billion. The exposure U.S. banks have to a given country (US_BANK_EXPOSURE) varies from *near* 0 to 14%, with a mean of 1%.

[16]Two main types of IMF lending programs are included in our sample: General Resources Account (GRA) and Poverty Reduction Growth Trust (PRGT) arrangements.

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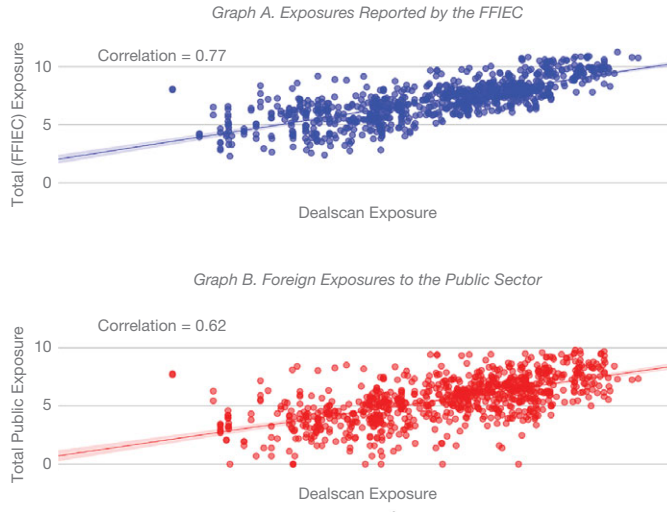
The mean POPULATION, EXCHANGE_RATE, GDP, GDP_GROWTH_RATE, and INFLATION are 82.04 (million), 2.19, 0.22 (trillion), 3.71%, and 68.25%, respectively. INFLATION is high due to the high inflationary periods of the 1980s and 1990s; the median value is 4.1%.

At the bank level, we estimate foreign exposure to particular countries as a fraction of bank capital. Data on individual U.S. bank holding companies' (BHCs) foreign exposure is from the DealScan database, which provides detailed historical information on global syndicated loan contracts. Additional bank characteristics are sourced from the Consolidated Financial Statements (FR Y-9C) that U.S. BHCs are required to file with the Federal Reserve. We follow the prior literature and use the DealScan database to calculate bank-level exposure to each country during our sample period (see James (1989), Giannetti and Laeven (2012a), (2012b)). The exposure of bank b to country c is simply the ratio of the value of lending to country c to bank capital (i.e., equity). DealScan is a database of syndicated loans to large corporations around the world. Thus, it does not contain nonsyndicated lending, nor does it contain lending to sovereigns or holdings of sovereign bonds. To ensure that exposure to syndicated corporate loans is a good proxy for bank foreign exposure in general, we present a scatter plot relating total foreign bank exposure, calculated using official data from the FFIEC, to aggregated exposure as obtained from the DealScan database. Figure 2 plots the results. Graph A is the scatter plot of FFIEC total exposure relative to DealScan exposure, whereas Graph B plots FFIEC public exposure against DealScan exposure. In each case, we can see that there is a strong

FIGURE 2

Commercial Versus Public Sector Foreign Exposures

Figure 2 shows the linear relationship between the aggregate foreign exposure of U.S. banks estimated using commercial loan market data from DealScan, and total U.S. banks exposures reported by the Federal Financial Institutions Examination Council (FFIEC) (Graph A), and foreign exposures to the public sector (Graph B). These U.S. foreign exposure metrics are calculated as the natural logarithm of the exposure U.S. banks have to a given country, as a percentage of their total exposure worldwide. The sample period spans 1983–2016.



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positive relation between the FFIEC and DealScan exposure measures (i.e., 0.77 for total exposure and 0.62 for public exposure).

Panel B in Table 1 presents summary statistics for bank-level variables observed around the dates when the IMF loans were granted (see Section IV.F for further details). We can see that only 1% of banks were exposed to international lending (EXPOSED; the money-center banks). Conditional on having foreign exposure, the mean (median) bank exposure amounts to 18% (4%) of the bank's capital (EXPOSURE_TO_CAPITAL|EXPOSED = 1). Though this exposure is based on corporate syndicated lending, it accords well with aggregate data from the FFIEC, which shows that the mean (median) exposure of the nine largest U.S. banks to foreign sovereigns is 19% (7.1%) of bank capital over our sample period.

Finally, we collect historical information on U.S. Congressional roll-call votes on IMF funding increases from the Congressional Roll-Call Votes Database Voteview.[17] For each member of the U.S. Congress, these data include whether that member supports IMF financing (i.e., gave a "yes" vote), his or her IDEOLOGY (i.e., his or her NOMINATE score from Poole and Rosenthal (1985)), and his or her party affiliation (DEMOCRAT). We also collect data from the U.S. Census Bureau to estimate the degree to which each member of Congress's home state is exposed to foreign trade by scaling total exports from that state by state GDP (STATE_EXPORTS_TO_GDP). We collect data on campaign contributions from the finance industry to individual members of Congress (FINANCE_CONTRIBUTIONS) from the Center for Responsive Politics (OpenSecrets). Finally, we use the Survey of Deposits (SOD) data set, taken from the Federal Deposit Insurance Corporation (FDIC), to estimate the deposit market share of foreign-exposed U.S. banks in a member's constituency (CONSTITUENCY_EXPOSURE).

The resulting data set comprises seven IMF-financing votes (three in the House of Representatives and four in the Senate) between 1983 and 2016. Panel C in Table 1 presents summary statistics for selected congress-level variables. We have a total of 1,696 votes cast by 1,293 unique members of Congress. The mean value for FINANCE_CONTRIBUTIONS is 0.18, implying that the average politician receives 18% of his or her campaign contributions from the finance industry, but this number varies from 0% to 68%. The mean value of CONSTITUENCY_EXPOSURE is 0.26, which can be interpreted as the average deposit market share, at the constituency level, of banks with foreign exposure to developing countries.

IV. Empirical Methodology and Results

A. Baseline Model

We estimate the impact of U.S. bank exposure on the likelihood of a country receiving an IMF loan using the following logistic regression:

[17]Broz (2011) provides a comprehensive list of roll-call votes on IMF financing in the U.S. congress between 1944 and 2009.

$$
\begin{aligned}
(1) \quad g(\text{IMF_LOAN}_{i,t}) = {} & \alpha_1 \ln(\text{US_BANK_EXPOSURE}_{i,t}) \\
& + \alpha_2 \text{SOVEREIGN_DEFAULT}_{i,t} \\
& + \alpha_3 \text{SOVEREIGN_DEFAULT}_{i,t} \\
& \times \ln(\text{US_BANK_EXPOSURE}_{i,t}) + \beta' \mathbf{X}_{i,t} \\
& + \gamma'(\text{SOVEREIGN_DEFAULT}_{i,t} \times \mathbf{X}_{i,t}) + I_i + T_t,
\end{aligned}
$$

where $\text{IMF_LOAN}_{i,t}$ is an indicator variable that takes on a value of 1 if country i has a current IMF loan in year t and 0 otherwise. $\ln(\text{US_BANK_EXPOSURE}_{i,t})$ is the natural logarithm of the exposure that U.S. banks have to country i as a percentage of their total exposure worldwide in year t.[18] $\text{SOVEREIGN_DEFAULT}_{i,t}$ is an indicator that equals 1 if country i is in default in year t and 0 otherwise. I_i is a country fixed effect and T_t is a time fixed effect that varies by year. Standard errors are clustered at the country level. We include a vector of control variables, $\mathbf{X}_{i,t}$, as well as the interaction of each of these control variables with the indicator SOVEREIGN_DEFAULT. The list of control variables includes i) GDP, annual GDP in trillions of current U.S. dollars; ii) GDP_GROWTH, the annual percentage growth rate of GDP at market prices based on constant local currency; iii) INFLATION, annual inflation as measured by the annual growth rate of the GDP implicit deflator; iv) POPULATION, the population in millions; v) EXCHANGE_RATE, the natural logarithm of the exchange rate in local units relative to the U.S. dollar; vi) ECONOMIC_OPENNESS, capital account openness index; vii) TRADE_WITH_US, gross trade with the USA expressed as a fraction of U.S. GDP; viii) UN_VOTING_SIMILARITY, an index measuring how similar a country's UN General Assembly voting is to that of the USA; ix) POLITY, the polity score, which is a scale measuring the degree of autocracy versus democracy; and x) TEMPORARY, an indicator that equals one if a country is currently a temporary member of the UN Security Council.

Our variable of interest is the interaction term SOVEREIGN_DEFAULT $\times \ln(\text{US_BANK_EXPOSURE})$, and our claim that the likelihood that a defaulting sovereign receives an IMF loan increases with the exposure of U.S. banks to that country implies that $\alpha_3 > 0$.

1. Baseline Estimation Results

Table 2 presents our baseline results across four columns. Column 1 presents the results of a simple regression without any control variables. Each subsequent column adds additional control variables and their interaction with SOVEREIGN_DEFAULT to the specification. Column 2 introduces time-varying country fundamentals that are correlated with sovereign default and thus IMF lending (GDP, GDP_GROWTH, INFLATION, POPULATION, and EXCHANGE_RATE). Next, in column 3, we add two variables to capture economic openness since countries that are more open are more vulnerable to external shocks. First, to

[18] $g(x) = \log\left(\frac{\Pr(x=1)}{1-\Pr(x=1)}\right)$ is the logit function or the logarithm of the odds.

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TABLE 2
Baseline Model

Table 2 presents coefficient estimates for the logistic model in equation (1) using an unbalanced panel of 47 countries between 1983 and 2016. The dependent variable is a dummy which takes 1 for countries that received an IMF loan, and 0 otherwise. The variable ln(US_BANK_EXPOSURE) is the natural logarithm of the exposure U.S. banks have to a given country, as a percentage of their total exposure worldwide. SOVEREIGN_DEFAULT is a dummy variable that takes 1 if a country's external debt is in default in a given year, and 0 otherwise. Column 2 includes country-specific macroeconomic characteristics as controls: GDP, GDP_GROWTH, INFLATION, POPULATION, and EXCHANGE_RATE. Column 3 controls for each country's degree of ECONOMIC_OPENNESS, as well as its level of trade relationship with the U.S. (TRADE_WITH_US); and column 4 accounts for whether a country is a temporary member of the United Nations (UN) Security Council (TEMPORARY), the country's voting similarity with the U.S. voting history at the UN (UN_VOTING_SIMILARITY), and for the country's level of democracy (POLITY). To aid comparison of economic magnitudes, the elasticity associated with our main variable of interest, SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE), for each model is presented in a separate row below the regression estimates. Regressions include country fixed effects to control for unobserved time-invariant characteristics, and year fixed effects to account for aggregate time trends that are common to all countries in the sample. Standard errors are clustered at the country level to allow for error correlation within each panel. Robust *z*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: IMF_LOAN			
	1	2	3	4
SOVEREIGN_DEFAULT	5.73***	5.48***	6.63***	6.00***
	(5.24)	(3.95)	(3.48)	(2.72)
ln(US_BANK_EXPOSURE)	0.06	0.00	0.04	0.02
	(0.47)	(0.01)	(0.19)	(0.09)
SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE) (2.76)	0.42***	0.46**	0.45**	0.54**
	(2.40)	(2.04)	(2.30)	
GDP		−1.83	−1.65	−0.74
		(−1.53)	(−1.50)	(−0.78)
SOVEREIGN_DEFAULT × GDP		−3.06	−2.43	−2.81
		(−1.13)	(−0.77)	(−0.74)
GDP_GROWTH		−0.17***	−0.17***	−0.17***
		(−5.26)	(−5.22)	(−4.69)
SOVEREIGN_DEFAULT × GDP_GROWTH		0.23***	0.22***	0.23***
		(3.64)	(3.75)	(3.88)
INFLATION		−0.00	−0.00	−0.00
		(−0.18)	(−0.25)	(−0.34)
SOVEREIGN_DEFAULT × INFLATION		0.00	0.00	0.00
		(0.16)	(0.26)	(0.35)
POPULATION		−0.01	−0.00	−0.01
		(−0.78)	(−0.63)	(−1.20)
SOVEREIGN_DEFAULT × POPULATION		0.00	−0.00	−0.00
		(0.15)	(−0.13)	(−0.29)
EXCHANGE_RATE		0.07	0.06	0.06
		(0.84)	(0.68)	(0.76)
SOVEREIGN_DEFAULT × EXCHANGE_RATE		0.02	0.03	0.01
		(0.32)	(0.41)	(0.19)
ECONOMIC_OPENNESS			0.55	0.65
			(0.57)	(0.67)
SOVEREIGN_DEFAULT × ECONOMIC_OPENNESS			−1.05	−1.52
			(−0.72)	(−1.02)
TRADE_WITH_US			0.78*	1.06**
			(1.79)	(2.42)
SOVEREIGN_DEFAULT × TRADE_WITH_US			0.26	0.08
			(0.79)	(0.22)
TEMPORARY				0.62**
				(2.21)
SOVEREIGN_DEFAULT × TEMPORARY				−0.43
				(−0.62)
UN_VOTING_SIMILARITY				5.55*
				(1.67)
SOVEREIGN_DEFAULT × UN_VOTING_SIMILARITY				4.56*
				(1.66)
POLITY				−0.05
				(−1.06)
SOVEREIGN_DEFAULT × POLITY				0.04
				(0.49)
Elasticities				
SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE)	2.07	2.26	2.21	2.66
No. of obs.	1,495	1,384	1,309	1,204
Pseudo-R^2	0.291	0.363	0.379	0.404
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

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capture general openness, we introduce the IMF capital account openness index, ECONOMIC_OPENNESS. Second, to capture trade relations specific to the USA, we introduce TRADE_WITH_US. Finally, in column 4, we add several variables capturing a country's political alignment with the USA as well as its ideology more generally, namely, UN_VOTING_SIMILARITY, POLITY, and TEMPORARY.

We find similar results across all specifications, and the coefficient on the interaction term SOVEREIGN_DEFAULT $\times$ ln(US_BANK_EXPOSURE) is positive and significant, as expected. For ease of comparison across models, we calculate the elasticities for our main independent variable of interest (SOVEREIGN_DEFAULT $\times$ ln(US_BANK_EXPOSURE)) and present them at the bottom of the table.

The economic magnitude of the estimates is large. The point estimate from column 4, our most restrictive model, implies that conditional on sovereign default, a 1% increase in ln(US_BANK_EXPOSURE) increases the probability that country *i* receives an IMF loan by 2.66%. Thus, a 1-standard-deviation increase in ln(US_BANK_EXPOSURE) (i.e., a 36% change) increases the probability that country *i* receives an IMF loan by 97%.

Our control variables have the expected signs. Higher GDP_GROWTH is negatively correlated with the likelihood of receiving an IMF loan. Being a temporary member of the Security Council (TEMPORARY) increases the likelihood of receiving a loan, which is consistent with the findings of Dreher et al. (2009). Finally, stronger economic and political alignment with the USA increases the likelihood of a loan (i.e., positive and significant coefficients on TRADE_WITH_US and UN_VOTING_SIMILARITY), which is consistent with the findings from papers such as Barro and Lee (2005) and Dreher and Jensen (2007).

We perform a series of robustness tests that we present and discuss in detail in the Supplementary Material. First, we find very similar, though quantitatively smaller, effects for the size of IMF loans granted to defaulting governments. Second, our results are robust to the use of data from the Federal Financial Institutions Examination Council (FFIEC) to measure U.S. bank foreign exposure. Finally, our results are robust to the use of a linear probability model.

2. Identification

There may be concerns that our results are contaminated by endogeneity. For example, it may be the case that U.S. banks are able to predict which countries are more likely to receive IMF loans and thus increase their exposure to those countries, knowing that there is a safety net in the event of default (i.e., reverse causality). We address this concern using an instrumental variables approach to identify causal effects.

Since our main model has two endogenous variables (i.e., ln(US_BANK_EXPOSURE) and SOVEREIGN_DEFAULT $\times$ ln(US_BANK_EXPOSURE)), we employ two instruments. Our first instrument is the physical distance between the USA and each country in our sample (GEODESIC_DISTANCE). Due to increased informational and transactional frictions, physical distance has been

TABLE 3

Instrumental Variable Estimation

Table 3 presents coefficient estimates for the instrumental variable model described in Section IV.A.2 using an unbalanced panel of 47 countries between 1983 and 2016. Columns 1 and 2 present estimates for First-Stage regressions where the endogenous variables are ln(US_BANK_EXPOSURE) and SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE), respectively. The instruments are ln(NEIGHBORING_EXPOSURE) and GEODESIC_DISTANCE. ln(NEIGHBORING_EXPOSURE) is calculated as the natural logarithm of the average exposure U.S. banks have (as a percentage of their total exposure) to the neighboring states of a given country. GEODESIC_DISTANCE measures the physical distance (in thousands of kilometers) from the USA. Column 3 shows coefficient estimates for a Second-Stage regression where the dependent variable is a dummy which takes 1 for countries that received an IMF loan, and 0 otherwise. To aid comparison of economic magnitudes, the elasticity associated with our main variable of interest, SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE), for each model is presented in a separate row below the regression estimates. All regressions include controls used in Table 2 column 4. Regressions include year fixed effects, and standard errors are clustered at the country level. Robust *t*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	First-Stage 1	First-Stage 2	Second-Stage
	1	2	3
SOVEREIGN_DEFAULT	−1.05***	−8.11***	1.82*
	(−2.59)	(−29.54)	(1.92)
ln(NEIGHBORING_EXPOSURE)	0.24***	0.07***	
	(12.05)	(5.10)	
GEODESIC_DISTANCE	−0.01	−0.04***	
	(−0.61)	(−3.55)	
$\widehat{\ln(\text{US_BANK_EXPOSURE})}$			−0.09**
			(−2.16)
$\widehat{\text{SOVEREIGN_DEFAULT} \times \ln(\text{US_BANK_EXPOSURE})}$			0.22*
			(1.87)
Elasticities			
SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE)			1.08
No. of obs.	1,153	1,153	1,153
R^2	0.618	0.919	0.233
Controls	Yes	Yes	Yes
Controls × SOVEREIGN_DEFAULT	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

shown to have a negative impact on cross-border banking and equity flows (see Buch (2005), Portes and Rey (2005), Aviat and Coeurdacier (2007), and Buch and Lipponer (2007)). As such, we expect physical distance to be negatively related to U.S. bank exposure, but physical distance is also clearly exogenous. For each country *i*, our second instrument is the average U.S. bank exposure to all the countries that border it (ln(NEIGHBORING_EXPOSURE)). In this instance, regional trends imply that U.S. bank exposure is likely to be correlated among neighboring countries, but it is unlikely that the average exposure of the countries bordering country *i* is *directly* related to the likelihood that country *i* receives a loan. We obtain estimates for the geodesic distance between the USA and each developing country from the CEPII institute and information on country borders from www.geodatasource.com.

We present the first-stage results for each of the endogenous variables in Table 3, columns 1 and 2. The dependent variable in column 1 is ln(US_BANK_EXPOSURE), and the dependent variable in column 2 is SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE). We see that the two instruments have the expected signs and are significant. The instruments have a significant impact on SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE): a 1-standard-deviation increase in ln(NEIGHBORING_EXPOSURE) (GEODESIC_DISTANCE) leads to a 2.6% (2.1%) increase (decrease) in SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE) relative to their sample means. We compare the cluster-robust

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F-statistics from the first stage to the rule-of-thumb level for testing weak instruments (i.e., $F \geq 10$).[19] The F-statistics are well above 10 (19.82 and 14.67 in columns 1 and 2, respectively), which reduces the concern that weak instruments may contaminate our inference.

Importantly, we can see from the second-stage regression that the instrumented variable $\overline{\text{SOVEREIGN_DEFAULT} \times \ln(\text{US_BANK_EXPOSURE})}$ remains positive and significant. The point estimate, although slightly smaller than that in the main results, implies that a 1% increase in $\ln(\text{US_BANK_EXPOSURE})$ increases the probability that a defaulting country receives an IMF loan by approximately 1.1%.

In the Supplementary Material, as additional evidence against the reverse causality argument, we build a model for predicting which countries are more likely to receive IMF loans and show that U.S. bank exposure is *not* positively correlated with the predicted values from this model.

B. The Relative Cost of Direct Bailouts

As argued in Section II, the benefits of de facto bailouts are related to i) reductions in the political costs associated with direct bailouts and ii) reductions in the strain on domestic resources. Thus, de facto bailouts should be more likely when the political and fiscal costs of direct bailouts are higher.

To test these predictions, we estimate equation (1) on the following subsamples: federal election years versus nonelection years; and budget deficit >0.05 versus budget deficit <0.05. The expectation is that de facto bailouts are more likely to occur in election years, when governments are trying to avoid the bad press associated with a direct bailout. Likewise, de facto bailouts are more likely when government finances are poor.

The results are presented in Table 4 across four columns. Columns 1 and 2 present the results for the subsamples split by nonelection and election years, respectively. We can see that the coefficient on $\text{SOVEREIGN_DEFAULT} \times \ln(\text{US_BANK_EXPOSURE})$ is positive in both subsamples; however, the elasticity is 36% larger in the election-years subsample, as expected. However, the between-sample differences are not significantly different from each other.

Columns 3 and 4 split the sample according to the 75th percentile of U.S. government budget deficits (i.e., below and above a deficit of 5% of GDP). In this instance, we see a stark difference in the size of the effect across the two subsamples: the occurrence of de facto bailouts is much more likely when the U.S. government is in a poorer financial position. Specifically, the elasticity of $\text{SOVEREIGN_DEFAULT} \times \ln(\text{US_BANK_EXPOSURE})$ is 2.31 when the U.S. budget deficit is below 5% of GDP compared to 4.41 when the deficit is above 5% of GDP. The results in this section thus provide some evidence on how the likelihood of a de facto bailout varies with the relative costs of direct versus de facto bailouts.

[19]Note that the system is exactly identified. In this case, we report the Kleibergen–Paap F-statistic, which is equivalent to the Montiel Olea–Pflueger effective first-stage F-statistic. See Kleibergen and Paap (2006) and Olea and Pflueger (2013) for a detailed discussion.

TABLE 4

Bailout Cost

Table 4 presents coefficient estimates for the logistic model in equation (1) applied to subsamples based on proxies for political costs and fiscal costs. The sample consists of an unbalanced panel of 47 countries between 1983 and 2016. The variable ln(US_BANK_EXPOSURE) is the natural logarithm of the exposure U.S. banks have to a given country, as a percentage of their total exposure worldwide. SOVEREIGN_DEFAULT is a dummy variable, which takes 1 if a country's external debt is in default in a given year, and 0 otherwise. Columns 1 and 2 present coefficients for nonelection and U.S. Federal election years, respectively. Columns 3 and 4 show estimates for years in which the U.S. Budget Deficit (scaled by GDP) was below and above the 75th percentile (i.e., below or above 5% of GDP), respectively. To aid comparison of economic magnitudes, the elasticity associated with our main variable of interest, SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE), for each model is presented in a separate row below the regression estimates. Regressions include controls used in Table 2 column 4, country fixed effects, and year fixed effects. Standard errors are clustered at the country level. Robust *z*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: IMF_LOAN			
	Pres Elections = 0	Pres Elections = 1	Deficit < 0.05	Deficit > 0.05
	1	2	3	4
SOVEREIGN_DEFAULT	7.27***	5.42**	6.34***	2.84
	(2.90)	(2.02)	(3.02)	(0.42)
ln(US_BANK_EXPOSURE)	−0.04	0.02	0.05	0.14
	(−0.18)	(0.07)	(0.23)	(0.47)
SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE)	0.53**	0.72***	0.47**	0.89*
	(2.38)	(2.68)	(2.47)	(1.73)
Elasticities				
SOVEREIGN_DEFAULT × ln(US_BANK_EXPOSURE)	2.61	3.56	2.31	4.41
No. of obs.	568	550	788	286
Pseudo-R^2	0.421	0.484	0.438	0.574
Controls	Yes	Yes	Yes	Yes
Controls × SOVEREIGN_DEFAULT	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Between-sample differences				
$b2 - b1$	0.19	0.42*		

C. Other Major IMF Members

A natural question to ask is whether foreign bank exposure in the other major IMF member countries has a similar impact on the likelihood that a defaulting sovereign receives an IMF loan. In Section II.B, we noted that for the majority of our sample, the major non-U.S. member countries were Japan, Germany, France, the United Kingdom, and Italy. Further, the EU as a collective controls more than a quarter of the vote share, so it is conceivable that the EU and other major countries coordinate their votes with the USA if the benefits of doing so outweigh the costs.

We estimate models of the same nature as equation (1) and present the results in Table 5. We replace ln(US_BANK_EXPOSURE) with the individual exposure of Japan, Germany, France, the United Kingdom, and Italy (columns 1–5, respectively), the collective exposure of these five countries (column 6), and total European exposure (column 7). Judging from the coefficients on the interaction terms between SOVEREIGN_DEFAULT and ln(COUNTRY_BANK_EXPOSURE), German, French, and Italian bank exposure significantly increases the probability of receiving an IMF loan conditional on sovereign default, with German exposure displaying the largest elasticity. In contrast, the exposure of banks from Japan and the U.K. was not statistically significant. Next, the collective exposure of the five major IMF members, as well as of Europe altogether, is also significant in explaining the likelihood of obtaining an IMF loan. We also find that the

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TABLE 5
Other Countries

Table 5 presents coefficient estimates for the logistic model in equation (1) applied to the foreign bank exposures of other IMF members with high voting power. The sample consists of an unbalanced panel of 47 countries between 1983 and 2016. Column 1 presents regression coefficients for Japanese banks, column 2 for Germany, column 3 for France, column 4 for the UK, and column 5 for Italy. In addition, column 6 presents estimates for the foreign exposures of these five IMF members as a whole. Finally, in column 7, we present coefficient estimates for the foreign exposures of all European banks in our sample. The dependent variable is a dummy which takes 1 for countries that received an IMF loan, and 0 otherwise. The variables ln(COUNTRY_BANK_EXPOSURE), ln(MAJOR_NON_US_MEMBERS_BANK_EXPOSURE), and ln(EUROPE_BANK_EXPOSURE) are calculated as the natural logarithm of the exposure banks, from the selected IMF members, have to a given country, as a percentage of their total exposure worldwide. SOVEREIGN_DEFAULT is a dummy variable which takes 1 if a country's external debt is in default in a given year, and 0 otherwise. To aid comparison of economic magnitudes, the elasticity associated with our main variable of interest, SOVEREIGN_DEFAULT × ln(COUNTRY_BANK_EXPOSURE), for each model is presented in a separate row below the regression estimates. Regressions include all controls used in Table 2 column 4, country fixed effects, and year fixed effects. Standard errors are clustered at the country level. Robust *z*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: IMF_LOAN						
	Japan	Germany	France	UK	Italy	Major Non-US	Europe
	1	2	3	4	5	6	7
SOVEREIGN_DEFAULT	10.56***	7.31***	5.24**	4.02*	5.95***	5.60**	5.85**
	(3.47)	(2.75)	(2.02)	(1.68)	(2.62)	(2.29)	(2.32)
ln(JAPAN_BANK_EXPOSURE)	−0.20						
	(−1.23)						
SOVEREIGN_DEFAULT × ln(JAPAN_BANK_EXPOSURE)	0.26						
	(1.47)						
ln(GERMAN_BANK_EXPOSURE)		−0.27					
		(−1.14)					
SOVEREIGN_DEFAULT × ln(GERMAN_BANK_EXPOSURE)		0.39***					
		(2.96)					
ln(FRANCE_BANK_EXPOSURE)			−0.34**				
			(−2.07)				
SOVEREIGN_DEFAULT × ln(FRANCE_BANK_EXPOSURE)			0.38*				
			(1.83)				
ln(UK_BANK_EXPOSURE)				0.04			
				(0.25)			
SOVEREIGN_DEFAULT × ln(UK_BANK_EXPOSURE)				0.20			
				(1.02)			
ln(ITALY_BANK_EXPOSURE)					−0.13		
					(−1.24)		
SOVEREIGN_DEFAULT × ln(ITALY_BANK_EXPOSURE)					0.34***		
					(2.67)		
ln(MAJOR_NON_US_MEMBERS_BANK_EXPOSURE)						0.03	
						(0.16)	
SOVEREIGN_DEFAULT × ln(MAJOR_NON_US_MEMBERS)						0.39*	
						(1.93)	
ln(EUROPE_BANK_EXPOSURE)							−0.00
							(−0.01)
SOVEREIGN_DEFAULT × ln(EUROPE_BANK_EXPOSURE)							0.42*
							(1.96)
Elasticities							
SOVEREIGN_DEFAULT × ln(COUNTRY_BANK_EXPOSURE)	1.43	2.82	1.91	1.04	1.97	1.98	2.10
No. of obs.	901	1,204	1,204	1,204	1,204	1,204	1,204
Pseudo-R^2	0.491	0.405	0.400	0.392	0.400	0.397	0.397
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls × SOVEREIGN_DEFAULT	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

exposure of other traditional U.S. allies (Canada and Australia) are insignificant in explaining the allocation of IMF loans.[20]

Section II.B offered three nonmutually exclusive reasons why countries may vote in line with the USA. First, a country's foreign exposure may be highly correlated with that of the USA. Second, countries may support the USA in order to maintain a strategic alliance that brings with it benefits unrelated to the allocation of IMF loans. Finally, some countries may vote in line with the USA under a quid-pro-quo arrangement. While it is not possible to differentiate among these alternatives in our setting, to better understand which of these mechanisms is likely at work, we calculate the correlation between U.S. exposure and the exposure of non-U.S. members. The correlations are on average high; however, they range from a low of 0.69 for Germany to a high of 0.84 for Japan. It is interesting to note that although Japan has the highest correlation and Germany has the lowest, we find insignificant results for Japan, while the results for German exposure are the most significant.

To summarize, we do not find that de facto bailouts are more likely for Japanese banks, even though their foreign exposure is the most correlated with that of U.S. banks, nor do we find that de facto bailouts are more likely for traditional allies of the USA such as the U.K., Canada, and Australia. Only the exposure of the major European IMF members is significant in explaining the allocation of IMF loans. Though not definitive, we argue that this evidence is suggestive of the USA and major European governments trading IMF votes on a quid-pro-quo basis. These results are consistent with the anecdotal evidence around the Greek debt crisis and provide evidence that de facto bailouts are a broader phenomenon than only USA influence over IMF decisions.

D. De Facto Bailouts and Government Incentives to Default

In this section, we investigate the relation between de facto bailouts and government incentives to default. In Section II.C, we argued that on the one hand, de facto bailouts reduce the risk of sanctions or exclusion from international finance conditional on default and thus may increase incentives to default. On the other hand, because of loan conditionality, de facto bailouts may impose additional costs on the domestic economy even though they allow countries to pay off arrears to external creditors. Whether the presence of de facto bailouts increases or decreases incentives to default is therefore an empirical issue. Accordingly, we regress our variable SOVEREIGN_DEFAULT on lagged $\ln(\text{US_BANK_EXPOSURE})$ as well as the same set of controls we used in equation (1). The results are presented in Table 6.

In column 1, we begin by confirming the results from Gennaioli et al. (2014): a government is less likely to default if local banks are more exposed to its bonds. To proxy for local bank exposure to government debt, we construct the variable $\ln(\text{LOCAL_BANK_EXPOSURE})$, which is the natural logarithm of local banking sector exposure (i.e., credit) to the local private sector, scaled by GDP. Data for this measure of local bank exposure come from the World Bank Development Indicators.

[20]We do not report these results.

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TABLE 6

Sovereign Default

Table 6 presents coefficient estimates for a logistic model in which the dependent variable is a dummy variable which takes 1 if a country's external debt is in default in a given year, and 0 otherwise. In column 1, the explanatory variable of interest, ln(LAGGED_LOCAL_BANK_EXPOSURE), is the natural logarithm of the lagged local banking sector exposure to the local private sector (scaled by GDP). In column 2, the main explanatory variable, ln(LAGGED_US_BANK_EXPOSURE), is the natural logarithm of the lagged exposure U.S. banks have to a given country, as a percentage of their total exposure worldwide, and column 3 includes both (lagged) local and U.S Bank exposures. The sample consists of an unbalanced panel of 47 countries between 1983 and 2016. To aid comparison of economic magnitudes, the elasticity associated with our main variable of interest for each model is presented in a separate row below the regression estimates. Regressions include lagged values for all controls used in Table 2 column 4, country fixed effects, and year fixed effects. Standard errors are clustered at the country level. Robust *z*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: SOVEREIGN_DEFAULT		
	1	2	3
ln(LAGGED_LOCAL_BANK_EXPOSURE)	−0.92**		−0.79*
	(−2.15)		(−1.93)
ln(LAGGED_US_BANK_EXPOSURE)		−1.12**	−1.17**
		(−2.53)	(−2.54)
No. of obs.	934	866	800
Elasticities			
ln(LAGGED_LOCAL_BANK_EXPOSURE)	−0.84		−0.72
ln(LAGGED_US_BANK_EXPOSURE)		−5.52	−5.77
Pseudo-R^2	0.451	0.590	0.589
Lagged controls	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

We regress SOVEREIGN_DEFAULT on ln(LOCAL_BANK_EXPOSURE), controlling for the same set of variables as in equation (1). We can see that the higher the exposure of local banks to the local economy, the less likely governments are to default, consistent with Gennaioli et al. (2014).

Next, in column 2, we replace ln(LOCAL_BANK_EXPOSURE) with our main variable of interest, ln(US_BANK_EXPOSURE), and we find a negative and significant coefficient, which implies that greater U.S. bank exposure to a country reduces that country's incentive to default. In column 3, we include both ln(LOCAL_BANK_EXPOSURE) and ln(US_BANK_EXPOSURE) and find that both remain negative and significant. Therefore, although U.S. bank exposure increases the chances of receiving an IMF loan (which reduces external creditor losses and thus the risk of sanctions upon default) it also appears that the expected costs associated with de facto bailouts may outweigh the benefits. These costs likely relate to the severe austerity conditions that are often attached to IMF loans that may, at least in the short run, result in even weaker economic growth and higher unemployment (Steinwand and Stone, 2008). As such, austerity measures are never popular with the voting public, as is evident from the recent Greek experience, in which between 2010 and 2015, seven different Prime Ministers took office. Therefore, from the point of view of a politician who is interested in maximizing her term in office, de facto bailouts are to be avoided.

In Table B6 of the Supplementary Material, we investigate whether the exposure of other major non-U.S. members also alters default incentives. We do not find any evidence that other countries' exposure significantly alters government default incentives.

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E. Public or Private Interest? Congressional Voting on IMF Funding Increases

Proponents of direct bank bailouts argue that bailouts ameliorate the significant negative externalities associated with bank failure (the public interest view of government). In the other camp, the belief is that politicians may follow their own interests when bailing out banks (i.e., they may give in to special interest pressure) to increase their probability of being reelected (a private interest view of government).

Our argument is that de facto bailouts occur because U.S. politicians respond to special interest pressure from the banking lobby, especially from those banks exposed to losses from overseas lending. However, it is certainly plausible that politicians are responding in the public interest if losses from overseas lending have negative repercussions for their local constituencies, e.g., from a contraction in local lending and real activity.

In this section, we ask the following question: Are the patterns we observe above more in line with a public interest or private interest view of government? To answer this question, we examine roll-call voting data related to funding increases for the IMF. Funding increases raise the resources available to the IMF for the provision of assistance to defaulting sovereigns. Hence, we consider politicians who vote in favor of IMF funding increases as being in favor of de facto bailouts. To tease out whether public or private interest is the motivation for voting yes, we construct a proxy to capture each of these concepts.

To capture the private interest view, we create the variable FINANCE_CONTRIBUTIONS$_{i,t}$, which is calculated as the total campaign contributions received by member of Congress i from the finance industry, as a percentage of the total contributions received by that member, up until roll-call vote t. We are able to construct this variable for the full sample period covering seven IMF-financing roll-call votes between 1983 and 2016.[21] The sample mean and standard deviation for FINANCE_CONTRIBUTIONS are 0.18 and 0.1, respectively.

Our proxy for the public interest view is more involved in its calculation. We proceed as follows: First, as discussed in Section III, we calculate the bank-level exposure to each country that has experienced a sovereign default during our sample period using the DealScan database. Second, we obtain summary of deposit (SOD) data from the FDIC (available beginning in 1994) to determine the deposit share for each bank in each constituency. We then create the variable CONSTITUENCY_EXPOSURE$_{i,t}$, which measures how exposed each constituency is to foreign countries that experienced a sovereign default during the sample period. For member of Congress i's constituency, this is calculated as the weighted sum of each bank's foreign exposure, where the weights are the banks' corresponding deposit market shares.[22] Because of the SOD data limitations, we are able to calculate this variable for only five roll-call votes between 1994 and 2016. There is significant variation in CONSTITUENCY_EXPOSURE. The mean and standard deviation for this variable are 0.26 and 0.23, respectively.

[21]The IMF roll-call votes occurred in 1983, 1991, 1998, 2009, and 2015.

[22]For Senators, we consider the state they represent to be their constituency.

We then examine the determinants of voting in favor of IMF funding increases with the following logit model:

$$(2)\quad g(\text{IMF_VOTE}_{i,t}) = \beta_1 \text{FINANCE_CONTRIBUTIONS}_{i,t} + \beta_2 \text{CONSTITUENCY_EXPOSURE}_{i,t} + \beta_3 \text{STATE_EXPORTS_TO_GDP}_{i,t} + \beta_4 \text{IDEOLOGY}_{i,t} + \beta_5 \text{DEMOCRAT}_{i,t} + \beta_6 \text{HOUSE}_{i,t} + T_t,$$

where $\text{IMF_VOTE}_{i,t}$ corresponds to an indicator that equals 1 if member of Congress i votes to support an IMF funding increase in roll-call vote t and 0 otherwise. Our control variables include $\text{STATE_EXPORTS_TO_GDP}_{i,t}$, which we include to control for the degree to which the state each member of Congress is located in is exposed to foreign markets; $\text{IDEOLOGY}_{i,t}$, which is estimated based on historical voting patterns available at www.voteview.com and serves as a proxy for member of Congress i's political ideology; $\text{DEMOCRAT}_{i,t}$ is an indicator that takes on the value 1 if the member is part of the Democratic party; $\text{HOUSE}_{i,t}$ is an indicator that equals 1 if the vote took place in the House of Representatives; and T_t is a roll-call number fixed effect.

Our results are presented in Table 7. Column 1 includes only FINANCE_CONTRIBUTIONS along with controls. We can see that FINANCE_CONTRIBUTIONS has a strong positive relation with IMF_VOTE. Specifically, a standard deviation increase in FINANCE_CONTRIBUTIONS raises the probability of voting in favor of IMF funding by almost 11%. Next, in column 2, we replace FINANCE_CONTRIBUTIONS with CONSTITUENCY_EXPOSURE and reestimate the model. Interestingly, we find no significant relation between CONSTITUENCY_EXPOSURE and IMF_VOTE.

Finally, in column 3, we include both FINANCE_CONTRIBUTIONS and CONSTITUENCY_EXPOSURE and once again find that only FINANCE_CONTRIBUTIONS is positive and significant. Consequently, the results here point toward a private interest view of government: de facto bailouts of U.S. banks appear to be driven by special interest considerations.

F. U.S. Bank Stock Returns Around IMF Loan Announcements

Since IMF loans are official monies to governments, one may wonder whether any of this money actually reaches U.S. banks. While it is impossible to track where this money goes, we make two observations in this section. First, as discussed in Section II.A, IMF loan conditionality typically enforces the payment of external debt in arrears from recipient governments. Second, we take an indirect approach to confirm that U.S. banks benefit significantly from IMF loans by examining the impact of IMF loan announcements (i.e., the announcement of IMF bailout packages) on U.S. bank shareholder wealth.

To do so, we employ a standard event study approach. First, we calculate the CARs for all U.S. BHCs for the 20 days around (10 days prior to and 10 days after) the announcement of an IMF loan. Our model for expected returns is the Fama and

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TABLE 7

Congressional Voting

Table 7 presents coefficient estimates for the logistic model in equation (2) on a sample of U.S. Congress roll-call votes on IMF funding increases. The dependent variable is a dummy which takes 1 for votes that support IMF financing, and 0 otherwise. Column 1 shows coefficients for a sample of 7 IMF-financing roll-call votes between 1983 and 2016, while column 2 presents estimates for a sample of five roll-call votes between 1998 and 2016. The variable FINANCE_CONTRIBUTIONS is the campaign contributions from the finance industry received by each member of Congress, as a percentage of their total contributions received. In column 2, we control for the variable CONSTITUENCY_EXPOSURE. For a given constituency, this variable measures the total deposit market share of U.S. banks exposed to countries that experienced a sovereign debt crisis. In addition, the model in column 3 controls for both FINANCE_CONTRIBUTIONS and CONSTITUENCY_EXPOSURE. For each member of Congress, additional controls include the fraction of Exports to GDP in the state represented by the member for the year the vote takes place (STATE_EXPORTS_TO_GDP), an ideology index (IDEOLOGY), a dummy variable which takes 1 for Democrats and 0 for Republicans (DEMOCRAT), and a dummy which equals 1 for members of the House of Representatives and 0 for the Senate (HOUSE). To aid comparison of economic magnitudes, the elasticity associated with our main variable of interest for each model is presented in a separate row below the regression estimates. Regressions include rollnumber fixed effects and robust standard errors. Robust *z*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: IMF_VOTE		
	1	2	3
FINANCE_CONTRIBUTIONS	2.93***		2.66***
	(3.65)		(2.94)
CONSTITUENCY_EXPOSURE		0.44	0.35
		(1.01)	(0.77)
STATE_EXPORTS_TO_GDP	−1.16**	−0.64	0.01
	(−2.33)	(−0.30)	(0.00)
IDEOLOGY	−4.48***	−4.11***	−3.91***
	(−8.16)	(−7.22)	(−6.47)
DEMOCRAT	−0.83*	−0.51	−0.19
	(−1.95)	(−1.15)	(−0.39)
HOUSE	−0.79*	−1.04***	−1.08***
	(−1.73)	(−3.75)	(−2.97)
Constant	0.52	0.95***	0.36
	(1.05)	(2.76)	(0.79)
Elasticities			
FINANCE_CONTRIBUTIONS	0.21		0.19
No. of obs.	1,222	1,126	1,036
Rollnumber fixed effects	Yes	Yes	Yes

French three-factor model.[23] We use a longer event window because of the public nature of sovereign defaults and IMF loan allocations. Second, using our bank-level exposure estimated via DealScan data (see Section III), we classify banks as being exposed or unexposed to a given country at the time the IMF loan is announced. Third, we calculate and compare the average CARs for exposed and unexposed banks.

Panel A in Table 8 presents the univariate results from this comparison. We can see that exposed banks (EXPOSED = 1) experience an average CAR of 3.4% around the announcement of an IMF loan. In contrast, the market response is fairly neutral for unexposed banks (EXPOSED = 0), which experience only a 0.1% CAR. Since foreign lending is heavily concentrated in money-center banks, most other U.S. banks never report having international exposure. As a result, comparing exposed banks to all other unexposed banks could be misleading. Therefore, in Panel B of Table 8, we keep only internationally active banks in our sample (i.e., banks that at some point in our sample have made a foreign loan). In this instance, the CAR for unexposed banks is marginally negative.

[23] We find similar results when using a market model instead.

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TABLE 8

Univariate Event Study

Table 8 shows average cumulative abnormal returns (CAR) for US bank holding companies (BHC) around the dates an IMF loan was granted. The sample consists of 269 IMF loans to 47 countries between 1983 and 2016. EXPOSED refers to those BHC which, on the event date, were exposed to the recipient country. In Panel A, the sample includes all BHC for which price data is available, whereas Panel B considers a subsample of internationally active BHC (i.e., banks with any foreign exposures). Robust *t*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	CAR	No. of Obs.
	1	2
Panel A. All BHC		
EXPOSED	0.034**	54
	(2.30)	
UNEXPOSED	0.001*	35,777
	(1.88)	
Panel B. Internationally Active BHC		
EXPOSED	0.034**	54
	(2.30)	
UNEXPOSED	−0.005**	1,764
	(−2.06)	

FIGURE 3

Wealth Effects Around IMF Loan Announcements

Figure 3 shows the average cumulative abnormal returns (CAR) of U.S. banks that were exposed to a country experiencing a sovereign debt crisis, around the date in which the IMF granted a loan to the sovereign.

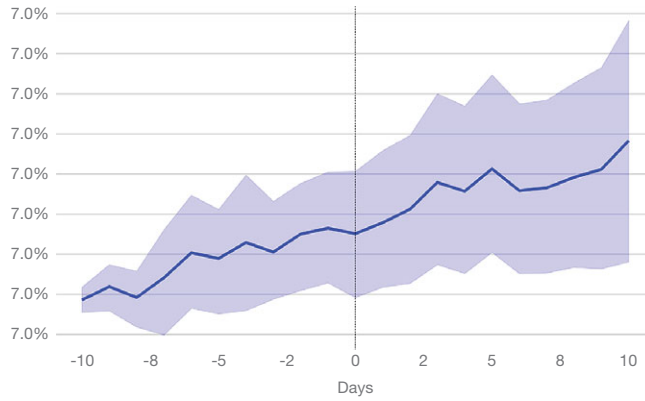


Figure 3 summarizes these results nicely. It plots the CAR for exposed banks over the 20-day window and shows a clear increase around the time of IMF loan announcements. We observe here how the public nature of IMF bailouts leads to an upward drift in CARs in the pre-event period, followed by another jump in CARs in the post-event period.

Since the univariate results are subject to omitted variable bias, we conduct a multivariate analysis of bank CARs in the following cross-sectional regression:

$$\begin{aligned}(3)\qquad \mathrm{CAR}_{b,c,t} = {} & \alpha_1 \mathrm{EXPOSED}_{b,c,t} + \alpha_2 \mathrm{SOVEREIGN_DEFAULT}_{c,t} \\ & + \alpha_3 \mathrm{SOVEREIGN_DEFAULT}_{c,t} \times \mathrm{EXPOSED}_{b,c,t} \\ & + \beta' \mathbf{X}_{b,t} + B_b + \varepsilon_{b,t},\end{aligned}$$

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where $CAR_{b,c,t}$ is the cumulative abnormal return for bank b around the announcement of a loan to country c at time t; $EXPOSED_{b,c,t}$ is an indicator that equals 1 if bank b is exposed to country c at time t; $SOVEREIGN_DEFAULT_{c,t}$ is an indicator that equals 1 if country c defaulted a time t; $\boldsymbol{X}_{b,t}$ is a vector of bank-level controls that includes: BANK_SIZE, the natural log of assets; RETURN_ON_EQUITY; LEVERAGE_RATIO, the ratio of tier 1 capital to total assets; TIER1_RATIO, the tier 1 capital-to-risk weighted assets (RWAs) ratio; SHORT_TERM_WHOLESALE_FUNDING, the ratio of short-term wholesale funding to liabilities; RISK_WEIGHTED_ASSETS, the ratio of RWA to assets; and LOANS_TO_DEPOSITS, the ratio of loans to deposits. Finally, B_b is a bank fixed effect.

The results are presented in Table 9 across two columns. Column 1 includes all BHCs in our sample, whereas column 2 restricts the sample to internationally active banks only. Let us focus on column 2. We observe that, compared with unexposed banks, exposed banks experience a small (1%) increase in CARs around

TABLE 9

Multivariate Event Study

Table 9 presents coefficient estimates for the OLS regression model in equation (3). The dependent variable is the cumulative abnormal returns (CAR) for US bank holding companies (BHC) on the dates an IMF loan was granted. The sample consists of 269 IMF loans to 47 countries between 1983 and 2016. EXPOSED is a dummy which takes 1 for those BHC which, on the event date, had commercial exposures to the recipient country. SOVEREIGN_DEFAULT is a dummy variable that takes 1 if the recipient country's external debt is in default, and 0 otherwise. In column 1 the sample includes all BHC for which price data is available, whereas column 2 considers a subsample of internationally active BHC (i.e., banks with foreign exposures). In addition, column 3 presents coefficient estimates for a quantile (median) regression using the subsample of internationally active BHC. Controls include BANK_SIZE, the natural log of assets; RETURN_ON_EQUITY; LEVERAGE_RATIO, the ratio of tier 1 capital to total assets; TIER1_RATIO, the tier 1 capital-to-risk weighted assets (RWAs) ratio; SHORT_TERM_WHOLESALE_FUNDING, the ratio of short-term wholesale funding to liabilities; RISK_WEIGHTED_ASSETS, the ratio of RWA to assets; and LOANS_TO_DEPOSITS, the ratio of loans to deposits. Regressions include bank fixed-effects and standard errors are clustered at the bank level. Robust *t*-statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: CAR		
	OLS All Banks	OLS Internationally Active Banks	Median Regression Internationally Active Banks
	1	2	3
EXPOSED	0.02***	0.01**	0.01**
	(2.88)	(2.14)	(2.28)
SOVEREIGN_DEFAULT	0.01***	−0.01*	−0.01
	(4.04)	(−1.84)	(−0.94)
SOVEREIGN_DEFAULT × EXPOSED	0.03***	0.05***	0.03*
	(2.75)	(3.29)	(1.76)
BANK_SIZE	0.00	0.01	0.01
	(1.18)	(1.50)	(1.28)
RETURN_ON_EQUITY	0.00	0.07*	0.03
	(0.60)	(1.85)	(1.35)
LEVERAGE_RATIO	−0.10	−0.09	0.16
	(−0.76)	(−0.14)	(0.37)
TIER1_RATIO	−0.05	0.06	−0.19
	(−0.72)	(0.15)	(−0.63)
SHORT_TERM_WHOLESALE_FUNDING	−0.05**	0.01	−0.05*
	(−2.35)	(0.38)	(−1.66)
RISK_WEIGHTED_ASSETS	−0.03	−0.04	−0.05
	(−1.34)	(−0.51)	(−0.79)
LOANS_TO_DEPOSITS	0.00	−0.00	−0.02
	(1.26)	(−0.03)	(−0.78)
No. of obs.	27,087	1,315	1,315
R^2	0.035	0.032	0.014
Bank fixed effects	Yes	Yes	Yes

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the announcement of an IMF loan (i.e., there is a positive and significant coefficient on EXPOSED). However, the largest gains are to the exposed banks when an IMF loan announcement also coincides with a sovereign default. That is, the coefficient on SOVEREIGN_DEFAULT × EXPOSED is positive and significant, and the point estimate suggests that banks exposed to sovereign default experience a 5% CAR when an IMF loan is announced. On the other hand, unexposed banks actually experience a slight decline in CARs when the IMF loan announcement relates to a defaulting sovereign. This is perhaps because a defaulting sovereign is the most extreme case of balance-of-payment problems that might require an IMF loan; however, unexposed banks do not stand to benefit from the IMF loan. Finally, since the sample of exposed banks is small (54), to ensure that our estimates are robust to outliers, we reestimate column 2 using a quantile (i.e., median) regression and present the results in column 3. We see that the point estimate of interest falls to 3% for exposed banks and is insignificant for unexposed banks.

Therefore, our conservative estimates suggest that conditional on sovereign default, an IMF loan increases U.S. bank share prices by about 3%. To determine the reasonableness of this estimate, we note that the mean foreign exposure for exposed banks is 18% of bank capital (see Panel B of Table 1). Thus, to achieve a 3% increase in equity following an IMF loan, U.S. banks must recover an additional 17% from defaulting sovereigns compared to defaulting sovereigns that do not receive an IMF loan. To make our calculation, we start with work from Moody's Global Credit Research (2008), which documents that recovery rates for a sample of sovereign defaults in the 1990s and 2000s range from 18% to 95%. Next, we determine the countries that receive IMF loans versus those that did not following a default; the latter group forms our counterfactual group.[24] Finally, to obtain the expected recovery rates for U.S. banks in the two scenarios, we weight the recovery rates using the exposure of U.S. banks to these countries in the year of the default. By doing this, we obtain an expected recovery rate of 12.5% from defaulting sovereigns not receiving an IMF loan, compared to 30.4% for sovereigns receiving an IMF loan. The difference between the two is 17.9%, which is slightly higher than the required 17% noted above.

In sum, this section demonstrates that IMF loans, although directed toward governments, ultimately reach U.S. banks. Moreover, the market appears to be quite adept at differentiating between the foreign exposure of different banks as well as the severity of the balance-of-payment problems that the loan-recipient countries are facing.

V. Conclusion

We show that the U.S. government uses its voting power and political influence to direct IMF loans to defaulting sovereigns where U.S. banks are highly exposed to losses from default. By using IMF loans to prop up countries struggling

[24]Countries receiving IMF loans are Argentina in 2001, the Dominican Republic in 2005, and Uruguay in 2003. Defaulting sovereigns not receiving an IMF loan are Ecuador in 1999, Cote D'Ivoire in 2000, and Russia in 1998. See Moody's Global Credit Research (2008). Sovereign Default and Recovery Rates, 1983–2007, Mar. 2008. Available at https://www.moodys.com/sites/products/DefaultResearch/2007100000482445.pdf (Accessed Mar. 6, 2021).

to make debt payments, the U.S. government can indirectly absorb U.S. bank losses – a de facto bailout.

De facto bailouts are a broad phenomenon that are also apparent among major European countries, and their presence reduces the incentive for governments to default, likely due to loan conditionality, which exacerbates the short-run contraction experienced by the defaulting country. Further, campaign contributions from the finance industry, but *not* the exposure of a politician's constituency to foreign lending losses, are an important determinant of members of Congress's support for IMF funding increases and thus de facto bailouts. We interpret this as evidence of special interest pressure from the U.S. banking lobby. Finally, we document positive wealth effects accruing to U.S. banks exposed to a defaulting sovereign around the time an IMF loan is granted.

Overall, we identify an alternative mechanism through which the U.S. government can backstop the losses of large banks while also reducing both the amount of domestic resources used and the degree of discontent among voters.

Appendix A. List of Countries

Appendix A lists the 47 developing economies for which we observe U.S. banks foreign exposure in this study. In addition to U.S. banks exposure, this list is defined based on whether country-level data on IMF loans and instances of sovereign debt crises are available between 1983 and 2016.

#	Country	#	Country
1	Algeria	25	Kenya
2	Angola	26	Korea
3	Argentina	27	Mauritius
4	Bolivia	28	Mexico
5	Brazil	29	Morocco
6	Central African Republic	30	Nicaragua
7	Chile	31	Nigeria
8	China	32	Panama
9	Colombia	33	Paraguay
10	Costa Rica	34	Peru
11	CoteD'Ivoire	35	Philippines
12	Dominican Republic	36	Poland
13	Ecuador	37	Portugal
14	Egypt	38	Romania
15	El Salvador	39	Russia
16	Ghana	40	Sri Lanka
17	Greece	41	Thailand
18	Guatemala	42	Tunisia
19	Honduras	43	Turkey
20	Hungary	44	Uruguay
21	Iceland	45	Venezuela
22	India	46	Zambia
23	Indonesia	47	Zimbabwe
24	Ireland		

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Appendix B. Variable Definitions

Appendix B reports detailed descriptions for the main country-, bank-, and congress-level variables used in this study.

Country

IMF_LOAN: Dummy variable which takes 1 if, in a given year, a country received an IMF loan, and 0 otherwise. Source: IMF.

IMF_LOAN_AMOUNT: IMF loan amount in millions of USD. Source: IMF.

ln(IMF_LOAN_AMOUNT): Natural logarithm of IMF Loan Amount. Source: IMF.

SOVEREIGN_DEFAULT: Dummy variable which takes 1 if, in a given year, a country's external debt is in default. A sovereign default is defined as the failure of a government to meet a principal or interest payment on the due date (or within the specified grace period). These episodes include instances in which rescheduled debt is ultimately extinguished in terms less favorable than the original obligation (Reinhart and Rogoff (2009)). Source: HBS.

US_BANK_EXPOSURE: Exposure of US banks to a given country as a percentage of its total exposure worldwide. Source: BIS.

LOCAL_BANK_EXPOSURE: Domestic credit to private sector by local banks, scaled by GDP. Source: World Bank.

GDP: GDP in current U.S. trillions. Source: World Bank.

GDP_GROWTH: Annual percentage growth rate of GDP at market prices based on constant local currency. Source: World Bank.

INFLATION: Inflation measured by the annual growth rate of the GDP implicit deflator. Source: World Bank.

POPULATION: Total population in millions. Source: World Bank.

EXCHANGE_RATE: Natural logarithm of local exchange rate (local currency units relative to the U.S. dollar). Source: World Bank.

ECONOMIC_OPENNESS: Index of economic openness. Source: IMF.

TRADE_WITH_US: Total gross trade (imports and exports) with the US, scaled by GDP. Source: IMF.

TEMPORARY: Dummy variable which takes 1 if a country is a temporary member in the UN Security Council, and 0 otherwise. Source: UN.

UN_VOTING_SIMILARITY: Voting similarity index, between 0 and 1, with the US UN voting history. Source: Harvard Dataverse.

POLITY: Index, between −10 and 10, of the level of democracy of a given country. Source: Center for Systemic Peace.

Bank Holding Company

EXPOSED: Dummy variable which takes 1 if a US bank is exposed to institutional borrowers from a foreign country, and 0 otherwise. Source: DealScan.

EXPOSURE_TO_CAPITAL | EXPOSED=1: US bank loan exposure to a foreign country as a percentage of the bank's capital, conditional on Exposed =1. Source: DealScan.

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BANK_SIZE: Natural logarithm of total assets. Source: Federal Reserve (FR Y-9C).

RETURN_ON_EQUITY: Return on equity. Source: Federal Reserve (FR Y-9C).

LEVERATE_RATIO: Tier 1 capital divided by total assets. Source: Federal Reserve (FR Y-9C).

TIER1_RATIO: Tier 1 capital divided by risk-weighted assets (RWA). Source: Federal Reserve (FR Y-9C).

SHORT_TERM_WHOLESALE_FUNDING: Short-term wholesale funding divided by total liabilities. Source: Federal Reserve (FR Y-9C).

RISK_WEIGHTED_ASSETS: Risk-weighted assets divided by total assets (risk-taking measure). Source: Federal Reserve (FR Y-9C).

LOANS_TO_DEPOSITS: Total loans divided by total deposits. Source: Federal Reserve (FR Y-9C).

Congress

FINANCE_CONTRIBUTIONS: Contributions from the finance industry to individual US members of congress as a percentage of their total contributions received. Source: Center for Responsive Politics.

CONSTITUENCY_EXPOSURE: Total deposit market share, at the constituency level, of US banks with foreign exposures to countries that experienced a sovereign debt crisis. Source: FDIC and DealScan.

STATE_EXPORTS_TO_GDP: Exports at the state level scaled by state GDP. Source: TSE and US Census.

IDEOLOGY: NOMINATE score for political ideology. Scores closer to -1 are associated with liberal values and values closer to 1 with conservative values. Source: Voteview.

DEMOCRAT: Dummy variable which takes 1 for members of Congress affiliated with the Democratic party, and 0 otherwise. Source: Voteview.

HOUSE: Dummy variable which takes 1 for members of the House of Representatives, and 0 for members of the Senate. Source: Voteview.

Supplementary Material

To view supplementary material for this article, please visit http://doi.org/10.1017/S0022109022000126.

References

Acharya, V.; I. Drechsler; and P. Schnabl. "A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk." *Journal of Finance*, 69 (2014), 2689–2739.

Arellano, C. "Default Risk and Income Fluctuations in Emerging Economies." *American Economic Review*, 98 (2008), 690–712.

Aviat, A., and N. Coeurdacier. "The Geography of Trade in Goods and Asset Holdings." *Journal of International Economics*, 71 (2007), 22–51.

https://doi.org/10.1017/S0022109022000126 Published online by Cambridge University Press

Barro, R. J., and J.-W. Lee. "IMF Programs: Who Is Chosen and What Are the Effects?" *Journal of Monetary Economics*, 52 (2005), 1245–1269.
Bian, B.; R. Haselmann; T. Kick; and V. Vig. "The Political Economy of Decentralization: Evidence from Bank Bailouts." Working Paper, University of British Columbia (2019).
Broner, F.; A. Martin; and J. Ventura. "Sovereign Risk and Secondary Markets." *American Economic Review*, 100 (2010), 1523–1555.
Brown, C. O., and I. S. Dinc. "The Politics of Bank Failures: Evidence from Emerging Markets." *Quarterly Journal of Economics*, 120 (2005), 1413–1444.
Broz, J. L. "The United States Congress and IMF Financing, 1944–2009." *Review of International Organizations*, 6 (2011), 341–368.
Buch, C. M. "Distance and International Banking." *Review of International Economics*, 13 (2005), 787–804.
Buch, C. M., and A. Lipponer. "FDI Versus Exports: Evidence from German Banks." *Journal of Banking & Finance*, 31 (2007), 805–826.
Chari, V. V., and P. J. Kehoe. "Bailouts, Time Inconsistency, and Optimal Regulation: A Macroeconomic View." *American Economic Review*, 106 (2016), 2458–2493.
Dam, L., and M. Koetter. "Bank Bailouts, Interventions, and Moral Hazard: Evidence from Germany." *Review of Financial Studies*, 25 (2012), 2343–2380.
Dreher, A., and N. M. Jensen. "Independent Actor or Agent? An Empirical Analysis of the Impact of US Interests on International Monetary Fund conditions." *Journal of Law and Economics*, 50 (2007), 105–124.
Dreher, A.; J.-E. Sturm; and J. R. Vreeland. "Global Horse Trading: IMF Loans for Votes in the United Nations Security Council." *European Economic Review*, 53 (2009), 742–757.
Duchin, R., and D. Sosyura. "Safer Ratios, Riskier Portfolios: Banks' Response to Government Aid." *Journal of Financial Economics*, 113 (2014), 1–28.
Farhi, E., and J. Tirole. "Collective Moral Hazard, Maturity Mismatch, and Systemic Bailouts." *American Economic Review*, 102 (2012), 60–93.
Fratzscher, M., and M. Rieth. "Monetary Policy, Bank Bailouts and the Sovereign-Bank Risk Nexus in the Euro Area." *Review of Finance*, 23 (2019), 745–775.
Gennaioli, N.; A. Martin; and S. Rossi. "Sovereign Default, Domestic Banks, and Financial Institutions." *Journal of Finance*, 69 (2014), 819–866.
Gennaioli, N.; A. Martin; and S. Rossi. "Banks, Government Bonds, and Default: What Do the Data Say?" *Journal of Monetary Economics*, 98 (2018), 98–113.
Giannetti, M., and L. Laeven. "Flight Home, Flight Abroad, and International Credit Cycles." *American Economic Review*, 102 (2012a), 219–224.
Giannetti, M., and L. Laeven. "The Flight Home Effect: Evidence from the Syndicated Loan Market During Financial Crises." *Journal of Financial Economics*, 104 (2012b), 23–43.
Giannetti, M., and A. Simonov. "On the Real Effects of Bank Bailouts: Micro Evidence from Japan." *American Economic Journal: Macroeconomics*, 5 (2013), 135–167.
Gorton, G., and L. Huang. "Liquidity, Efficiency, and Bank Bailouts." *American Economic Review*, 94 (2004), 455–483.
Gropp, R.; H. Hakenes; and I. Schnabel. "Competition, Risk-Shifting, and Public Bail-Out Policies." *Review of Financial Studies*, 24 (2011), 2084–2120.
Hébert, B., and J. Schreger. "The Costs of Sovereign Default: Evidence from Argentina." *American Economic Review*, 107 (2017), 3119–3145.
Huizinga, H., and J. Sachs. "U.S. Commercial Banks and the Developing-Country Debt Crisis." *Brookings Papers on Economic Activity*, 18 (1987), 555–606.
James, C. "Empirical Evidence on Implicit Government Guarantees of Bank Foreign Loan Exposure." In *Carnegie-Rochester Conference Series on Public Policy*, Vol. 30. Amsterdam: North-Holland (1989), 129–162.
Kentikelenis, A. E.; T. H. Stubbs; and L. P. King. "IMF Conditionality and Development Policy Space, 1985–2014." *Review of International Political Economy*, 23 (2016), 543–582.
Kleibergen, F., and R. Paap. "Generalized Reduced Rank Tests Using the Singular Value Decomposition." *Journal of Econometrics*, 133 (2006), 97–126.
Laeven, M. L., and F. Valencia. "Resolution of Banking Crises: The Good, the Bad, and the Ugly." IMF Working Paper No. 10-146 (2010).
Leonello, A. "Government Guarantees and the Two-Way Feedback Between Banking and Sovereign Debt Crises." *Journal of Financial Economics*, 130 (2018), 592–619.
Liu, W.-M., and P. T. Ngo. "Elections, Political Competition and Bank Failure." *Journal of Financial Economics*, 112 (2014), 251–268.
Mäkinen, T.; L. Sarno; and G. Zinna. "Risky Bank Guarantees." *Journal of Financial Economics*, 136 (2020), 490–522.

https://doi.org/10.1017/S0022109022000126 Published online by Cambridge University Press

Moody's Global Credit Research. "Corporate Default and Recovery Rates, 1920–2007," available at https://www.moodys.com/sites/products/DefaultResearch/2007100000482445.pdf (2008).
Olea, J. L. M., and C. Pflueger. "A Robust Test for Weak Instruments." *Journal of Business & Economic Statistics*, 31 (2013), 358–369.
Poole, K. T., and H. Rosenthal. "A Spatial Model for Legislative Roll Call Analysis." *American Journal of Political Science*, 29 (1985), 357–384.
Portes, R., and H. Rey. "The Determinants of Cross-Border Equity Flows." *Journal of International Economics*, 65 (2005), 269–296.
Reinhart, C. M., and K. S. Rogoff. *This Time is Different: Eight Centuries of Financial Folly*. Princeton: Princeton University Press (2009).
Reinicke, W. H. *Banking, Politics, and Global Finance: American Commercial Banks and Regulatory Change, 1980–1990*. Aldershot: Edward Elgar (1995).
Steinwand, M. C., and R. W. Stone. "The International Monetary Fund: A Review of the Recent Evidence." *Review of International Organizations*, 3 (2008), 123–149.
Stone, R. W. "The Political Economy of IMF Lending in Africa." *American Political Science Review*, 98 (2004), 577–591.
Thacker, S. C. "The High Politics of IMF Lending." *World Politics*, 52 (1999), 38–75.
Vaubel, R. "A Public Choice Approach to International Organization." *Public Choice*, 51 (1986), 39–57.
Vaubel, R. "Chap. 10: The Political Economy of International Organizations: A Public Choice Approach." In *The Political Economy of the International Monetary Fund: A Public Choice Analysis*, R. Vaubel, and T. D. Willett, eds. Boulder, CO: Westview Press (1991), 204–244.
Vaubel, R. "Bureaucracy at the IMF and the World Bank: A Comparison of the Evidence." *World Economy*, 19 (1996), 195–210.

https://doi.org/10.1017/S0022109022000126 Published online by Cambridge University Press