

# Who Is Credible? Government Popularity and the Catalytic Effect of IMF Lending

**Sujeong Shim**

Ph.D. Candidate

University of Wisconsin - Madison

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## **Abstract**

In this paper, I explain variations in private international investors' reactions to International Monetary Fund (IMF) programs ("the catalytic effect"). Focusing on a borrower's domestic politics, I argue that a borrower government's popularity is an important cue for investors about its ability to implement essential IMF conditionality. Therefore, investors react more favorably to more popular IMF borrowers. However, the effect of government popularity on investor behavior decays over time: it provides the strongest impact at the beginning of a Fund program, when investors have less information about the IMF program's success. I demonstrate the plausibility of the theory through interviews with IMF officials and international investors. Then, using annual data from up to 52 emerging market economies from 1998 to 2017, I find robust statistical evidence supporting these claims after addressing the endogeneity issues and selection bias inherent in IMF programs: an IMF program alone does not restore investor confidence. Rather, an IMF program with extensive conditionalities carried out by a popular government does. My findings have important implications for the study of credible commitment and international organizations and the politics of international finance.

When does an International Monetary Fund (IMF) program work? In May 2010, the Greek government agreed to implement extensive austerity measures and structural reforms in exchange for a three-year, €110 billion loan from the IMF, the European Commission and the European Central Bank. Combining the largest loan in the IMF's history with an "ambitious" policy package, the bailout program was supposed to "restore market confidence."<sup>1</sup> The outcome was, however, disappointing. Throughout the 22 months of the program duration, investors became increasingly reluctant to lend to Greece. They asked the Greek government for an interest rate of 7% at the beginning of the program, and it spiked to a whopping 29% in February 2012, when the program was eventually canceled and replaced with a new program.

Why did the Greek bailout program fail to restore investor confidence despite the unprecedentedly large loan, coordinated support from the IMF and the European Union, and the government's overt commitment to extensive economic reforms? To use an IMF term, the Greek program failed to trigger "catalytic effects": it did not *catalyze* private financing. When private financing does not follow an IMF program, a borrower economy becomes vulnerable to a lengthened economic crisis, as was the case for Greece. Under what conditions can an IMF-participating government attract international private financing?

A substantial body of literature explores this question, with many studies focusing on political and economic structural factors such as a borrower's macroeconomic fundamentals and regime type. However, because structural factors tend to remain constant over a short period of time, they provide limited explanations for within-country variations, including the exacerbated

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<sup>1</sup> <https://www.imf.org/en/News/Articles/2015/09/14/01/49/pr10176>

investor reaction for Greece during 2010-2012.<sup>2</sup> In this paper, I suggest that explaining international investors' reaction requires much more than an examination of a borrower's macroeconomic or political structure. Investors reward borrowing governments that are credibly committed to implementing IMF conditionality. Investor reaction therefore depends on the domestic politics within which the borrower government carries out the IMF-mandated reform.

Specifically, I contend that mass-level opinion plays a critical role in shaping investors' perceptions of an IMF participant. Investors expect governments with lower levels of public support to have greater difficulty in fully implementing policy conditionality. Consequently, they react harshly (favorably) if a borrowing government loses (gains) public support. The effect of public support on investor behavior, however, decays over time. It provides the strongest impact during the initial years of IMF programs when investors have little information about the borrower's economic reform prospects. When sufficient information on the actual reform progress becomes available, investors rely less on government popularity.

My theoretical framework suggests that the terms of IMF programs as well as investors' reaction to the programs could depend on a borrower's popularity. IMF officials, for example, can grant more lenient programs to more popular borrowers because they appear more credible and thus more likely to make an IMF program a success. In the interests of space, I focus only on investor reactions in this article, while I fully control for the terms of IMF programs in the empirical analysis.

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<sup>2</sup> Eichengreen and Mody 2001; Morris and Shin 2006; Mody and Saravia 2006; Arabaci and Ecer 2014; Bauer, Cruz, and Graham 2012; Cho 2014; Chapman *et al.* 2015; Breen and Egan 2019

To probe the validity of the theory, I first conduct interviews with international investors and IMF officials. Then, moving on to rigorous statistical tests, I perform time-series regression analyses on the original annual dataset covering 52 emerging market economies during the period of 1998-2017. For the selection bias inherent in IMF participation, I use a compound instrumental variables approach applied in two-stage least square models. To set aside endogeneity concerns about government popularity, I closely examine the economic and political factors that contribute to government popularity and fully control for them. Additionally, I conduct monthly analyses as a robustness check to investigate the relationship between monthly variations in government popularity and those in investor reaction, keeping the economic and political components that do not change on a monthly basis fixed.

I find supportive and consistent evidence across the interviews and statistical tests that an IMF borrower's popularity is strongly associated with international investors' reaction. I demonstrate that an IMF program *alone* does not restore international investors' confidence in the borrower's economy. Instead, IMF programs with extensive conditionality restore confidence primarily when provided to strong governments. The effect of government popularity is strongest in the first two years of an IMF program and becomes indiscernible from zero starting at the third year. These findings contribute to the expanding literature on IMF programs' catalytic effects by explaining how investors update their beliefs about the same IMF participant's credibility at different points in time as well as why we observe variations in the success of catalytic financing across IMF participants.

Beyond explaining variations in catalytic financing, my findings make contributions to

an important area of the literatures of international relations. This research brings the domestic public to the fore in the political economy literature on IMF lending. I gather and analyze comprehensive data on government popularity for 52 emerging market economies and demonstrate how mass-level opinion creates a substantial impact on the consequences of IMF programs. In addition, this research joins the conditionality debate by underscoring that conditionality can help borrowers restore international investors' confidence only when the borrowers have the political capacity to implement the reforms. My analysis also highlights a new pathway through which international investors evaluate country risk during an economic crisis. Investors' perceptions of countries do not always align with actual economic performance or policy outcomes (Gray 2013) but play a critical role in the international political economy.<sup>3</sup> Lastly, this research contributes to the literature on credible commitment and international organizations (IOs) by suggesting that domestic public opinion mediates IOs' function as a commitment mechanism.

## **IMF Program and its Catalytic Effects**

Every year, approximately 40 to 60 countries borrow from the IMF through conditional lending programs. Most of them approach the Fund because they need financing but cannot borrow from the international private market due to the lack of private investors' confidence in the country. In exchange for lending, the IMF demands that the borrowing state restructure its economy by implementing policy conditionality. Conditionality aims to instill confidence in creditors by

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<sup>3</sup> For example, Chwiroth 2009; Gray 2013; Brooks, Cunha and Mosley 2015.

tightening government spending and increasing government revenues. Theoretically, therefore, commitment through the Fund is the purchase of a “good housekeeping seal of approval.” A borrowing state sends a costly signal about “sound” economic policies by partially giving up its monetary and fiscal autonomy. However, despite the costly signal, not every borrower successfully regains market confidence or catalyzes private financing (“the catalytic effect”).

There is an expanding literature on the catalytic effect of IMF programs though with decidedly inconclusive results. Regarding the question of whether catalytic effects exist, most studies have found null or negative results, while some recent studies have shown catalytic effects.<sup>4</sup> Findings on the impact of IMF loan size and conditionality also disagree.<sup>5</sup> One line of thought is that countries with “intermediate” economic fundamentals, such as foreign reserves and debt, are likely to be able to restore investors’ confidence.<sup>6</sup> This notion, however, provides little explanation for short-term within-country variation, as macroeconomic fundamentals tend to change slowly.

Recently, political economy scholarship has explicitly investigated IMF participants’ *credibility* in an effort to explain varying catalytic effects. Chapman et al. (2015) make a compelling argument that countries that are geopolitically important to the U.S. experience the smallest catalytic effects because they receive weak conditions and little enforcement from the Fund due to U.S. influence. Bauer, Cruz, and Graham (2012) maintain that democratic leaders

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<sup>4</sup> Bird and Rowlands 2000; Cottarelli and Giannini 2002; Edwards 2006; Bird and Rowlands 2008; Van der Veer and de Jong 2010; Gehring and Lang 2018.

<sup>5</sup> Corsetti, Guimaraes, and Roubini 2003; Chapman *et al.* 2015; Díaz-Cassou 2006; Mody and Saravia 2006; Eichengreen and Mody 2001; Woo 2013.

<sup>6</sup> Eichengreen and Mody 2001; Bird and Rowlands 2002; Mody and Saravia 2006; Aracaci and Ecer 2014

are more credible than autocratic leaders because they have more flexible and fluid support coalitions. When a constituency opposes reform, a democratic executive has flexibility to build a new coalition of support, while a nondemocratic executive cannot easily do so. In addition, a left-wing government generates more credible signals about commitment to reform than a right-wing government because they are less likely to prefer to borrow from the IMF (Cho 2014). All of the studies confirm that the key to successful catalytic effects is the borrowing government's credible commitment to fixing fundamental economic problems.

However, there are still important empirical cases that remain to be explained. For example, during the IMF programs for the Papandreou government in Greece between 2010 and 2012 and the Yeltsin government in Russia between 1996 and 1998, investor confidence increasingly deteriorated to the point of causing regional crises. However, the economic and political factors that existing studies identify as critical for Greece and Russia mostly stayed constant in these periods. My research engages this gap by focusing on a borrower's domestic political development and how it affects investors' beliefs about the borrower's credibility.

## **A Theory of Government Popularity**

My argument has two central components. First, international investors reward governments that are credibly committed to implementing IMF conditionality, which will help resolve a country's balance of payment (BOP) problems. Investors therefore search for cues that can help them predict the implementation of IMF conditionality. Second, government popularity is a powerful cue. High levels of popular support facilitate the enactment of IMF reforms and generate strong public compliance. As a result, more popular governments receive more favorable investors'

reactions under IMF programs. I further suggest that once sufficient information on actual economic performance becomes available, investors no longer need a cue to predict the country's economic path.

## **International Investors and IMF Programs**

There are different types of lenders that can be catalyzed by IMF programs: creditor states, multilateral organizations and private financial institutions (Gould 2003). While creditor states played a central role in catalytic financing in the 1950s and 1960s, private financial institutions have dramatically expanded their volume and importance since the 1980s. Currently, most catalytic effects depend on private financing. The focus of this paper is, therefore, private market participants such as investment banks, mutual and hedge funds and individual bond traders, which I aggregately call international investors in this paper. They face informational constraints as they assess the riskiness of a particular country, and they quickly reallocate funds as new information about a government becomes available (Mosely 2003; Ahlquist 2006).

International investors have good reasons to be skeptical of a country under an IMF program. Investors want to minimize the risk of sovereign default and loss of real value of their assets;<sup>7</sup> however, a borrower's BOP problems represent significant threats to investors. A BOP problem can easily translate into a default on debts unless borrowers quickly acquire liquidity large enough to repay the loans. Moreover, the real value of an investor's holdings will greatly decrease if borrowers suggest debt restructuring.<sup>8</sup> Given that there is no legal institution that

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<sup>7</sup> Mosley 2003; Bernhard and Leblang 2006

<sup>8</sup> According to Reinhart and Trebesch (2016), there were 97 debt restructuring deals in the 35 economic crises

guarantees debt service from foreign debtors, creditors are left with few protections. For example, creditors can join together to lend to a cash-strapped government to prevent a default from lack of liquidity, but this requires effective coordination among international investors, which is challenging due to geographical dispersion and the large number of creditors. Creditors can also try to deter a default by refusing to lend again in the future. However, this strategy means that creditors lose along with debtors, giving their threat little credibility.

With few alternative solutions available, IMF programs aim to shift the center of gravity among investors from skepticism to a credible belief in a borrower's recovery. By giving a borrower government guidance on "sound" economic policies through policy conditionality attached to its loan, the Fund tries to attenuate investor concerns about sovereign default or debt restructuring. IMF conditionality does not exactly overlap with what investors want to demand from borrower governments.<sup>9</sup> Nonetheless, IMF conditionality does include essential reforms that creditors want to see, not just because the program's core objective is to catalyze private financing but also because private investors have direct contact with Fund officials and deliberately demand that certain conditions be included in Fund programs (Gould 2006). IMF conditionality commonly includes orthodox austerity measures that will strengthen borrowers' solvency, such as reducing government expenditure, selling off unprofitable state-owned enterprises, and raising government revenue. Despite the changing rhetoric about IMF

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during 1978-2010 and the average debt relief estimate is 36% of external debt.

<sup>9</sup> For example, IMF conditionality has expanded to cover structural reforms that lead to improved competitiveness in the long run but that are not a strong selling point for portfolio investors who are mainly concerned about short-term returns (Kentikelenis et al. 2016)

conditionality over recent years, external debt management remains the single most frequent conditionality in IMF programs (Kentikelenis et al. 2016).

Key for investors, then, is whether the borrower government will successfully implement the conditionality. Investors are not interested in seeing every single condition delivered, but committing to essential reforms that are either directly or indirectly related to debt sustainability is a necessary condition for catalyzing private financing. In addition, a good record of program implementation will result in the disbursement of the full amount of a Fund loan. Unsuccessful implementation, on the other hand, indicates that the fundamental problems that initially led a government to the Fund will remain unfixed, and IMF loan disbursement will likely be suspended. Given that the average implementation records are not high (Dreher 2009), investors carefully select those who are credibly committed.

With the emphasis on commitment, it is important to note that investors operate in different information environments as IMF programs proceed over time. In the initial years of IMF programs, investors have little information on a borrower's prospective economic performance. Nonetheless, investors have incentives to move in the initial years because earlier movements are associated with higher returns. Investors therefore look for *cues* to estimate the credibility of the government's commitment to fixing the economy, which in turn helps them predict the borrower's prospective economy. As the program proceeds, however, cues are no longer necessary because a borrower's actual economic performance reveals whether its *ex-ante* commitment was credible.

## **Government Popularity and Implementation of IMF Conditionality**

What political conditions facilitate implementation and therefore act as a meaningful cue for investors? I argue that public support of a borrowing government plays a critical role. In doing so, I suggest that government popularity during IMF programs is not simply a reflection of underlying economic conditions but is an important concept on its own.<sup>10</sup>

Figure 1. Average development of government popularity during IMF programs for 52 emerging market economies, 1998-2017.

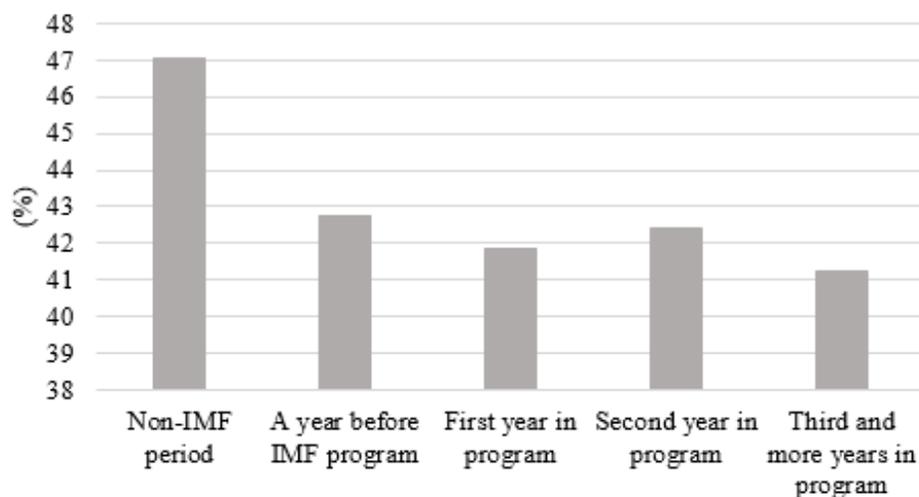


Figure 1 shows the average development of government popularity for 52 emerging market economies during 1998-2017. The average approval rating for IMF participants is lower (42%) than that for non-IMF participants (49%). Governments recorded low approval ratings a year before IMF programs, and the ratings decreased further during the first years of the programs. However, governments on average managed to shore up public support slightly in the second year, while they lost support again if the programs continued for more than two years.

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<sup>10</sup> In line with my argument, other studies empirically demonstrate that government popularity is not a mere reflection of underlying economic conditions when countries undertake economic reform. A variety of factors, such as the passage of time, globalization and IMF programs, mediate any impact of economy on government popularity. See Przeworski 1996; Laredo 1996; Anderson and Hecht 2014; Hellwig 2001.

Notwithstanding the dire macroeconomic conditions faced by many IMF borrowers, some borrowing governments manage to generate public support during the tough times of IMF programs. The South Korean government during the Asian financial crisis illustrated how appealing to nationalism can be one way to obtain popular support. Upon signing a three-year stand-by arrangement with the IMF in 1997, the Korean Minister of Finance and Economy said in a televised speech, “I have come here to beg the forgiveness of the Korean people... please understand the necessity of the economic pain we must bear and overcome.”<sup>11</sup> Major media described the day the government appealed to the Fund for financial assistance as a day of national shame, a nationalist framework that evoked public unity and support despite the bad economy. For example, in 1998, more than 3.5 million people nationwide voluntarily donated gold to the government in support of the economy, contributing 227 tons of gold worth approximately \$2.2 billion. As nationalist rallying continued throughout the crisis, the government enjoyed high approval ratings during the whole IMF program period.<sup>12</sup>

The patriotic appeal may be unique to South Korea, but public support for governments under IMF programs has been observable in other countries as well. In an interview with me, for instance, an official who worked for the Irish IMF program in 2010 recalled that the previous crisis that had led to a good recovery helped form nationwide support in Ireland. Owing to the experience of the Irish miracle in the 1990s, “they (the Irish) were willing to endure difficult

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<sup>11</sup> New York Times (1997) <https://www.nytimes.com/1997/12/04/business/crisis-south-korea-bailout-package-loans-worth-55-billion-set-for-korea.html>

<sup>12</sup> According to polls conducted by Research N Research, one of the largest polls in South Korea, the average government approval ratings were 78% in 1998, 71% in 1999, and 65% in 2000. Interestingly, the approval rating declined to 42% after the government successfully repaid the loan to the Fund in 2001. These numbers confirm that underlying economic conditions do not fully explain variations in government popularity, and external shocks such as the IMF intervention may bring the rally-around-the-flag effects.

times because they have seen that recovery was possible.... There were a few protests, but the silent majority was the main people who voted, and they kept calm throughout the whole program,” he said.<sup>13</sup>

Empirical studies echo the idea that having an IMF program does not invariably decrease a government’s popularity. For instance, IMF programs for Central and Eastern European countries did not produce negative public opinion about government economic policies during either the post-communist transition in the 1990s or the great recession of 2008 (Imam 2007; Beissinger and Sasse 2014). While every IMF borrower wants a high level of public support, each government shows unique popularity dynamics as a result of various factors, including culture and history as well as the state of the economy.

Variations in government popularity are critical because international investors use them to assess an IMF borrower’s credibility in committing to essential reforms. A policy needs to go through two stages for successful implementation: enactment and compliance. For instance, in order to meet the conditions that require more government revenue, a government has to pass policy reforms (enactment), such as a tax increase. The tax law itself, however, does not guarantee compliance with the conditions. Domestic actors must accept the law and pay the increased taxes (compliance).

Government popularity is a critical asset in both stages. First, public support for government is valuable capital in the legislative arena. Higher government popularity leads to a higher bill-passage rate in legislatures because legislators take government popularity as a signal

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<sup>13</sup> Interview C.

of a public preference for the government agenda and because popular leaders can alter citizens' positions (Ostrom and Simon 1985; Calvo 2007). This effect is particularly pronounced if the bill in question holds some degree of public salience and issue complexity (Canes-Wrone and de Marchi 2002).

As IMF programs are almost always salient and complex, a more popular government is more likely to receive legislative approval for IMF programs. For instance, in the early 2000s, the IMF consistently demanded tax system reform in Argentina. Multiple governments in Argentina with little public support had attempted such reforms but could not get these programs past the Congress. Only when there was a large upward surge in government popularity in 2003 was the tax reform bill successfully enacted.

High government popularity also leads to public compliance because people tend to support government policies if they have a favorable opinion of the government. For example, Meneguello (2005) finds that in Brazil, support for various economic reforms, such as currency reform, pension and tax policies, is highly dependent on the evaluation of the government. Support for a policy moves with government approval ratings over time and even across different partisan administrations. Similarly, Franklin, van der Eijk, and Marsch (1995) show that referendum outcomes in Europe are tied to the popularity of the government in power, resulting in (un)favorable outcomes for (un)popular governments.

The positive relationship between government popularity and public support of new policies remains valid under IMF programs. For instance, the Portuguese parliament passed a set of IMF conditionalities in 2011. However, the government, whose approval ratings plunged to below 20%, could not enforce the planned package because the Portuguese public did not accept

it and held nationwide protests and demonstrations. Similarly, Mauricio Macri, a former Argentine president under an IMF program, highlighted the government approval ratings in his interview with market participants to show its credibility: “The administration still has around 38 percent approval ratings, high for Latin American governments, so we have a lot of support that is allowing us to go forward.”<sup>14</sup>

## Interviews

To probe the plausibility of the theoretical framework, I conduct eight interviews with IMF officials and international investors.<sup>15</sup> Senior investors told me that “dedicated emerging market investors study IMF conditionality, read IMF papers, and hire consultants (to better understand IMF programs),” and other investors “follow the informed investors.”<sup>16</sup> IMF programs are a “critical focus” of the market, and IMF conditionality is “generally embraced by the market” because “conditionality makes them (borrowers’ debt payments) more sustainable.”<sup>17</sup>

In answer to my question of why some IMF programs fail to restore investors’ confidence, all of the interviewees pointed out unsuccessful implementations of IMF programs and political dynamics in borrower countries. Specifically, investors want to know “the inside political stories to estimate if the government could implement the program.”<sup>18</sup> Investors value implementation far more than a government’s political orientation or a country’s regime type, as

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<sup>14</sup> Financial Times (2018). Available at: <https://www.ft.com/content/9521b860-c00d-11e8-95b1-d36dfef1b89a>

<sup>15</sup> I conducted all the interviews myself. For more details about the interviews, please see Appendix 3.

<sup>16</sup> Interview G.

<sup>17</sup> Interview H.

<sup>18</sup> Interview B.

one investor explicitly stated: “Markets are relatively agnostic about political morals.... It’s not about left versus right or democracy versus non-democracy. It’s about delivery versus non-delivery” in terms of what makes governments credible under IMF programs.<sup>19</sup>

IMF officials and investors emphasized that public support for borrower governments is an important cue in assessing the borrower’s credibility. Senior IMF economists noted that during IMF programs, “government popularity, or the public’s perception of the political leadership,” is important “political capital” because “if they (borrowers) deplete the political capital too quickly, the truly important things cannot be done.”<sup>20</sup> Similarly, IMF officials with decades of experience noted that “public opposition is the largest challenge” in implementing IMF conditionality,<sup>21</sup> and therefore, “you (borrowing governments) have to have political support from the cabinet, (and) parliament, but ultimately from the people.”<sup>22</sup>

In the same way, international investors told me that a borrower’s credibility comes from its “political capacity,” which is “affected by politicians’ popularity” because “whatever the promises are, if they (borrowers) can’t deliver, they won’t deliver it.”<sup>23</sup> In other words, “when it’s obvious that significant public sentiment is against, to the point that it weakens government’s capacity (to implement IMF conditionality), it’s all negative.”<sup>24</sup> Investors therefore do not invariably prefer stringent IMF conditionality. While “more conditionality means more adjustments,” the market shows “counter effects” for too strong conditionality because it will

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<sup>19</sup> Interview G.

<sup>20</sup> Interview C.

<sup>21</sup> Interview E.

<sup>22</sup> Interview F.

<sup>23</sup> Interview H.

<sup>24</sup> Interview G.

“provoke backlash,” and the program will then be “unsustainable.”<sup>25</sup> The evidence from the mouths of investors and IMF officials clearly illustrates that government popularity is an important cue, not because it reflects the underlying economy, but because it suggests that IMF programs will be implemented, which investors expect will lead to improved economic performance.

## **Empirical Strategy**

In this section, I base my argument on robust statistical tests and analyze 52 emerging market economies from 1998 to 2017. I limit my analysis to emerging market economies because they actively participate in the international financial market yet represent significant risks to international investors.<sup>26</sup> I rely on JP Morgan’s Emerging Market Bond Index (EMBI) dataset to define the population, which includes only countries that are active participants in the international financial market.<sup>27</sup> The EMBI included 23 states in 1997, and the number increased to 67 in 2017, of which data availability limits my sample to 52 states.<sup>28</sup>

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<sup>25</sup> Interview G.

<sup>26</sup> In contrast, low-income countries do not participate in the international financial market, giving international investors little reason to react to their IMF programs. Similarly, high-income countries have stable political and economic environments, making them less susceptible to credibility questions.

<sup>27</sup> Specifically, a government’s debt instruments must have a minimum outstanding face value of \$500 million.

<sup>28</sup> The launch of the EMBI coincides with the shift toward portfolio-market-based government financing in the developing world and the termination of the EMBI coincides with a shift toward a developed world.

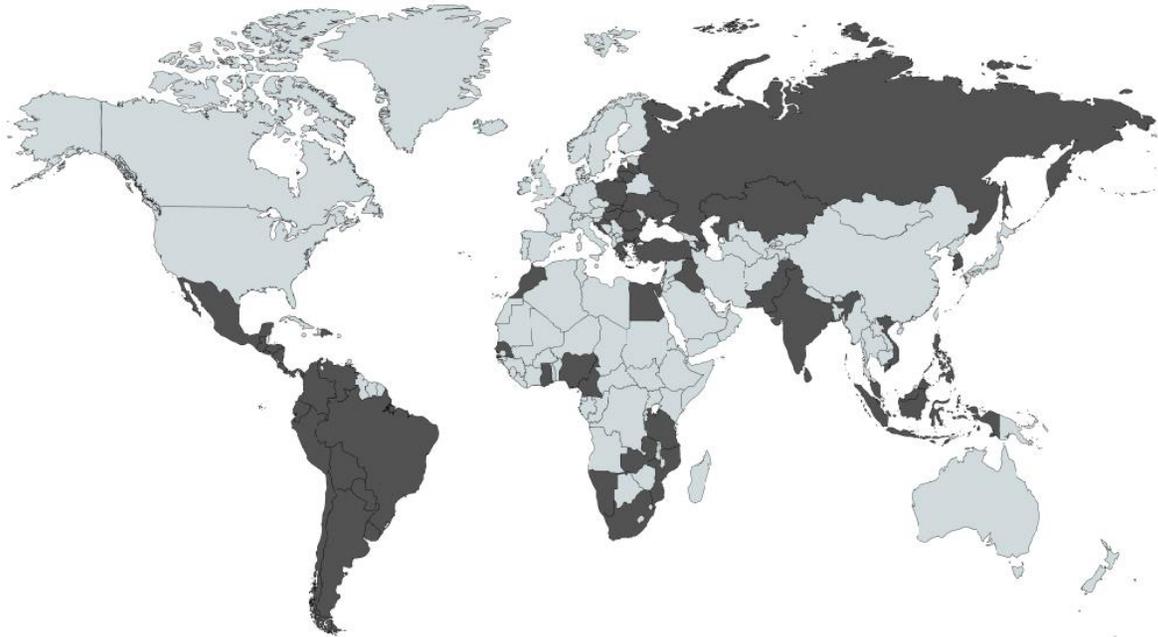


Figure 2. Sample countries (shaded)

The main outcome of interest is international investors' assessment of each country. Following previous studies, I use sovereign bond spreads to measure this outcome (Chapman et al. 2015; Mody and Saravia 2006; Eichengreen and Mody 2001). Specifically, I use yearly averages of sovereign bond spreads from the EMBI.<sup>29</sup> Sovereign bond spreads show international investors' risk evaluation of each economy compared to the U.S. economy, with larger spreads reflecting investors' higher skepticism toward the issuing government. Sovereign bond spreads are a better measure of market confidence than capital flows because capital flows reflect numerous factors not related to market confidence, such as a government's external financing needs. Similarly, the

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<sup>29</sup> The EMBI index aggregates differences in varying maturities, repayment guarantees and liquidities, making bond instruments comparable across countries. I take monthly spreads from the EMBI and annualize them.

recent literature shows that there is little relationship between actual FDI inflows and market confidence in the host country (Blanchard and Acalin 2016). In contrast, as Gray (2013) notes, sovereign bond spreads are generated precisely by a group of people who have incentives to get the risk perception right: traders of sovereign bonds. Indeed, studies have demonstrated that bond spreads are a function of market sentiment, especially for emerging economies.<sup>30</sup>

## **Independent Variables**

### *Public Support for Government*

I use a government's approval rating to measure the level of public support for the government. To cover all the countries in the sample, I assemble a comprehensive popularity dataset, using various sources including the Executive Approval Projects (Carlin et al. 2019) and regional and global polls such as Eurobarometer and Gallup polls as well as country-specific polls.<sup>31</sup> Most polls show reasonable distributions with mean approval ratings between 35 and 66%. Polls from Eurobarometer and Razumkov Center (Ukraine) show much lower average approval ratings, 24% and 13%, respectively.<sup>32</sup> Including country fixed effects alleviates concerns about bias that might arise from combining different polls by limiting my analysis to the variation within a poll over time. Government popularity in the full sample is roughly normally distributed, ranging from 3.8% (Ukraine, 2009) to 88.2% (Namibia, 2014), with a mean of 50.1% (Figure 3, left). Note that popularity for IMF participants is also normally spread out between 3.8% and 83%,

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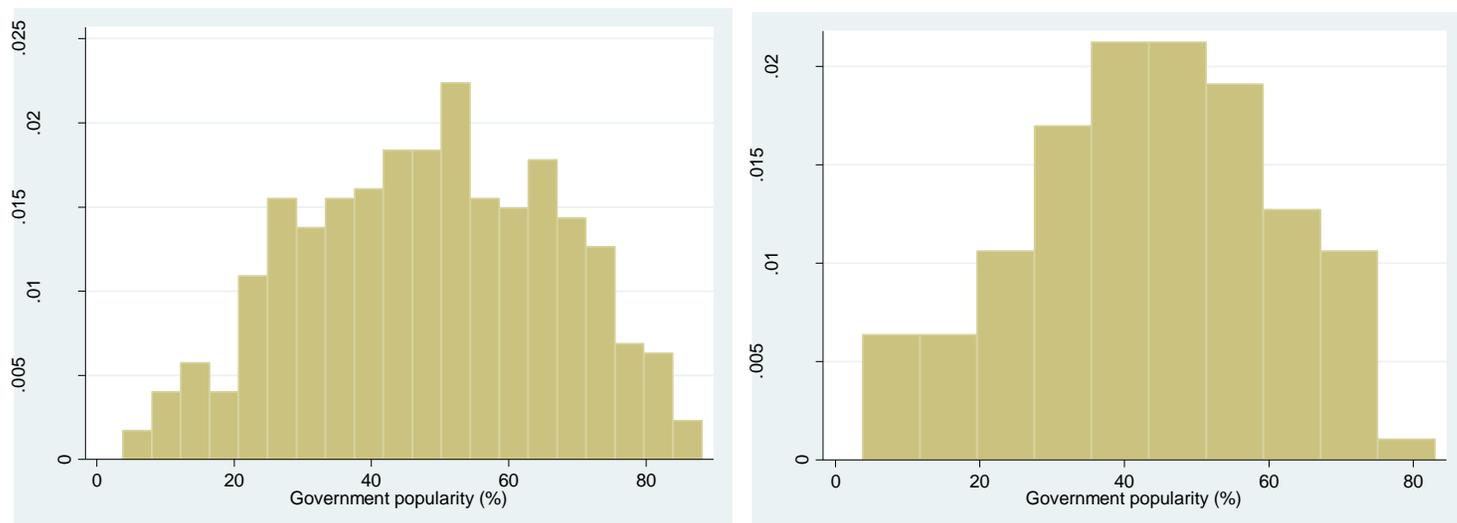
<sup>30</sup> Eichengreen and Mody 1988

<sup>31</sup> I thank Ryan Carlin and his team for providing me with the access to the raw data of various polls.

<sup>32</sup> Appendix 2 presents detailed descriptive statistics for each poll.

with a mean of 42.7% (Figure 3, right).

Figure 3. Histogram of government popularity: whole sample (left) and IMF participants (right)



Some may raise concerns about the endogeneity of government popularity to the state of the economy because economic performance is critical for public evaluations of leaders (Lewis-Beck 1986). However, it is important to note that most “economic voting” theory evidence has been found in advanced Western democracies during normal times.<sup>33</sup> In times of economic reform, in contrast, people can support their government despite a deteriorating economy, as I illustrated earlier with the South Korean and Irish cases. In fact, empirical studies focusing on reform periods consistently report that a bad economy does not necessarily reduce government popularity (Stokes 1996; Przeworski 1996; Laredo 1996; Echegaray and Elordi 2001). At the same time, other factors, including IMF programs and globalization mediate any impact from the

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<sup>33</sup> See Nannestad and Paldam (1994) for the summary of the literature.

economy on government popularity.<sup>34</sup>

Borrowing from these studies, I consider that economic conditions may partially, but not fully, explain government popularity; therefore, government popularity is an important concept on its own, especially during economic reforms. I run a few analyses to empirically evaluate this insight by regressing government popularity on various economic indicators in the sample. The results (in the Appendix, Table A4) show supportive evidence: for emerging market economies, economic indicators explain only 2% of the variations in government popularity across countries and 12% of those within countries. Estimated coefficients of current account balance, GDP per capita and GDP growth rate systematically explain government popularity, which I fully control in my analysis, but those of other economic indicators, such as sovereign default rates and inflation rates, fail to reach statistical significance.

#### *IMF Participation and Selection Bias*

Coding IMF participation to tease out the program effect is not a simple task because IMF-participating governments may be systematically different from nonparticipants. To adjust for any selection bias, I follow recommendations from Stubbs et al. (2020) and employ an instrumental variable approach with two-stage least square models (IV-2SLS). Borrowing the novel approach developed by Lang (2016),<sup>35</sup> I construct the following instrumental variables for

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<sup>34</sup> See, for example, Przeworski 1996; Laredo 1996; Anderson and Hecht 2014; Hellwig 2001.

<sup>35</sup> Drawing on the empirical strategy of Nunn and Qian (2014), Lang suggests that interacting the IMF's available resources in year  $t$  with each country's likelihood of participating in an IMF program in year  $t$  is a plausibly exogenous instrument for IMF participation. This idea has been widely adopted in the recent IMF literature (Nelson and Wallace 2017; Gehring and Lang 2018; Stubbs et al. 2020).

IMF participation:

$$\begin{aligned} IMF\ program_{i,t} &= \alpha_1(Past\ IMF\ participation_{i,t} \times IMF\ liquidity_t) \\ &+ \alpha_2(UN\ voting_{i,t} \times IMF\ liquidity_t) + X_{i,t} + \delta_i + \tau_t + \mu_{i,t} \end{aligned}$$

$$\begin{aligned} IMF\ conditionality_{i,t} &= \alpha_1(Past\ IMF\ conditionality_{i,t} \times IMF\ liquidity_t) + X_{i,t} + \delta_i + \tau_t + \mu_{i,t} \end{aligned}$$

*IMF program* is a binary variable, with a value of 1 if a country is under an IMF program in a given year and zero otherwise. *Past IMF participation* is the share of years a country has been under IMF programs between 1970 and year  $t$ . *IMF liquidity* is a (logged) ratio of IMF liquid resources over IMF liquid liabilities.<sup>36</sup> Lang (2016) provides a robust defense for *Past IMF participation<sub>i,t</sub> × IMF liquidity<sub>t</sub>* being a valid instrument.

*UN voting* is a proxy for a country's policy dissimilitude with the U.S. at year  $t$ , measured as the two countries' voting differences in the United Nations (Voeten et al. 2019). To increase the power of instrumentation, I add *UN voting<sub>i,t</sub> × IMF liquidity<sub>t</sub>* as another instrument.<sup>37</sup> The logic for this being a valid instrument is twofold. First, given the ample evidence of the U.S. influence on IMF lending decisions and the Fund's propensity to become generous when its liquidity is high, I propose that a country's policy dissimilitude with the U.S.

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<sup>36</sup> I thank Valentin Lang for generously sharing his IMF liquidity measure.

<sup>37</sup> Because my sample includes mostly emerging and developing economies, there is less-than-ideal variation in past IMF participation rates across countries. This makes *Past IMF participation rates × IMF liquidity* a very weak instrument, which on its own does not pass under-identification tests. When I add *UN voting × IMF liquidity*, the instruments collectively pass the under-identification tests and comfortably pass the Sargan over-identifying restrictions.

discourages the country from seeking an IMF program and that the effect is greater in higher IMF liquidity years. Second, the interaction term should plausibly meet the exclusion criteria. It is highly unlikely that any endogeneity exists between individual country's sovereign bond spreads and IMF liquidity, which is determined by the Fund's institutional rules. However, even if any endogeneity exists, violation would occur only when it works differently with levels of countries' affinity with the U.S. Put differently, exclusion criteria would be violated only if (a) international investors adjust individual country's risk premiums based on IMF liquidity, *and* (b) the adjustment differs by individual country's policy dissimilitude with the U.S. In the Appendix (Figure A3), I demonstrate neither (a) nor (b) seems to be the case by tracking temporal variations in IMF liquidity and the average sovereign bond spreads for countries with high and low policy dissimilitude with the U.S.

A binary measure of the IMF program could mask substantial differences among IMF programs. Thus, I also use an alternative measure of IMF participation by focusing on the conditionality in each program. Utilizing data from Kentikelenis et al. (2016), I count the sum of binding conditions for each country in a given year and call it *IMF conditionality*. Following Stubbs et al. (2020), I instrument this variable with an interaction term between *Past IMF conditionality* -- a measure of the average IMF conditionality for a country between 1991 and year  $t$  -- and the IMF liquidity ratio. Data from Kentikelenis et al. (2016) extend to 2014; therefore, my analysis with *IMF conditionality* examines the period of 1998-2014. I include  $X$ , a set of controls that I describe below, as well as  $\delta$  and  $\tau$ , full sets of country and year fixed effects.

Table 1. First-stage results

DV	<i>IMF Program</i>	<i>IMF Conditionality</i>
UN voting X IMF liquidity	-0.667** (-2.25)	
Past IMF participation X IMF liquidity	-5.457*** (-4.81)	
Past IMF conditionality X IMF liquidity		-0.038* (-1.68)
<i>N</i>	589	592

*All constituent terms as well as controls included.*

*t* statistics in parentheses

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

### *Controls*

I include controls that, when excluded, could confound the relationship among the key variables. First, given the studies that find a relationship between terms in IMF programs and the catalytic effects (Corsetti et al. 2003; Woo 2013; Chapman et al. 2015), I control for the number of binding quantitative conditionalities and the (logged) loan amount relative to the borrower's quota. I also take into account a borrower country's macroeconomic conditions by controlling for GDP growth rate, (logged) GDP per capita, sovereign default, and current account balance because these indicators are accessible to the public and could affect bond spreads.<sup>38</sup> Year fixed effects also account for global economic conditions, including global liquidity and capital flow cycle (Bauerle Danzman, Winecoff, and Oatley 2017).

<sup>38</sup> Sovereign default data are from Reinhart and Rogoff (2009). Because the data span only until 2010, I complement it with Moody's data.

Studies also find that investors use geography and the level of economic and market development as heuristics to evaluate a country's creditworthiness (Brooks et al. 2015). All of the countries in the sample share the development label of "emerging market economies"; therefore, I control for region to account for the category of creditworthiness into which each country in the analysis falls.

Next, I control for geopolitical interests because close ties with the U.S. could affect government popularity, IMF program implementation rates (Stone 2004), and investor behavior (Chapman et al. 2015). I include the ideal policy point difference between the U.S. and the borrower country in question to operationalize the affinity between the two by utilizing the dyadic similarity in UN General Assembly voting (*UN voting*) (Voeten et al. 2020; Stone 2004; Vreeland 2004; Copelovitch 2010; Woo 2013).

To account for the range of possible domestic political factors that might affect implementation and government popularity, I control for veto players using the Political Constraints Index (Henisz 2002) as well as national elections and legislature fractionalization with indicators from the Database of Political Institutions (Cruz et al. 2017). Additionally, I include a right-wing government dummy to account for the partisanship effect on IMF program implementation and market reaction (Beazer and Woo 2015; Cho 2014).<sup>39</sup>

## **Model Specification**

Because I am interested in measuring whether the impact of government popularity on bond

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<sup>39</sup> Descriptive statistics are in the Appendix.

spreads is merely episodic or whether it changes the long-term equilibrium (or both), I employ error correction models (ECMs) (De Boef and Keele 2008). ECMs also alleviate the concern about spurious regression that arises from the potential non-stationarity of bond spreads and government popularity (De Boef and Keele 2008). This is important because regressing one nonstationary time series on another results in inconsistent estimates and leads to the use of inappropriate tests for statistical significance. ECMs correct non-stationarity by simultaneously modeling both short-term deviations and long-term equilibrium.

Utilizing ECMs, I regress a first-differenced sovereign bond spread on (i) its lagged level, (ii) the lagged levels of all covariates, and (iii) the first differences of the covariates that change quickly enough to generate meaningful variance. The theory in this paper suggests that the effect of IMF programs on sovereign bond spreads is conditional on a country's government approval ratings. Following Warner (2019), I use the following ECM specification to estimate these interactive effects:

$$\Delta Y_t = \alpha + \alpha_a Y_{t-1} + \beta_0 \Delta X_t + \beta_1 X_{t-1} + \beta_2 Z_{t-1} + \beta_3 X_{t-1} Z_{t-1} + \beta_4 \Delta X_t Z_{t-1} + \beta_5 \Delta \varphi_t + \beta_6 \varphi_{t-1} + \beta \epsilon_t$$

where  $X$  is approval ratings and  $Z$  is the measure of IMF participation. The coefficients of interest are  $\beta_3$  and  $\beta_4$ , which show the long-term and short-term effects, respectively, of government approval ratings during IMF programs. I include a vector of additional variables,  $\varphi$ , including country and year fixed effects. Following previous studies, I include the delta terms for controls only when they have meaningful changes within a year, while all lagged values are

included.<sup>40</sup> The use of country dummies restricts my analysis to within-country effects, which along with ECMs and robust standard errors, generate very conservative results. However, the use of fixed effects is particularly important for my purposes, as I wish to set aside country-specific legacies that may affect government popularity during IMF programs, such as past experiences with and public perception of the IMF. In addition, although the conservative estimation strategy carries the risk of prematurely abandoning true hypotheses, it increases my confidence for the coefficients that do emerge as statistically significant.

## Results

Table 2 displays the results showing the relationship among IMF programs, government popularity and sovereign bond spreads with full sets of controls and country, region, and year fixed effects. Model (1) estimates the IMF program as a binary variable, and model (2) measures the effect of IMF conditionality, controlling for IMF participation. The test statistics suggest that the instruments I use are not strong.<sup>41</sup> However, the consistent signs and robust statistical power of the coefficients for the variables of interest increase my confidence in interpreting the results as supporting the theory.

My results suggest that an IMF program *alone* does not have consistent effects on bond spreads across different models, in line with the mixed results in the literature. More IMF conditionality *alone* also increases, rather than decreases, bond spreads, which probably reflects

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<sup>40</sup> For example, see Brooks et al. 2015. My results do not depend on the inclusion of the delta terms.

<sup>41</sup> All the instruments pass the under-identification tests. However, the F-test statistics in Table 2 fall below 10, a threshold commonly used to determine whether the instruments used in the first stage are strong.

investors' growing concern about program sustainability as conditionality expands. However, when the IMF program interacts with government popularity, a completely different picture emerges.

Let me first focus on the short-term effects. The first differences of the X variables estimate whether short-term changes in X bring changes in Y. The results indicate that an IMF-participating government's bond spread enjoys an immediate (short-term) 28 basis point (bp) decrease and a further 7 bp decrease in the very next year for a 1% increase in government popularity (see model (1)). Considering the sample mean of bond spreads, the estimates suggest that this is a 7% decrease in bond spreads within a year.

Similarly, more IMF conditionality with higher government popularity is systematically associated with lower spreads (see model (2)). To facilitate the interpretation of the results, I plot the marginal effects of government popularity while holding the number of IMF conditionalities constant at different levels. The results in Figure 4 illustrate that investors react positively to popular borrowers, and the reactions are the most positive when IMF programs include ambitious reform. This finding underpins the crux of my argument that government popularity serves as a cue for the likelihood of successful reform and better economic performance.

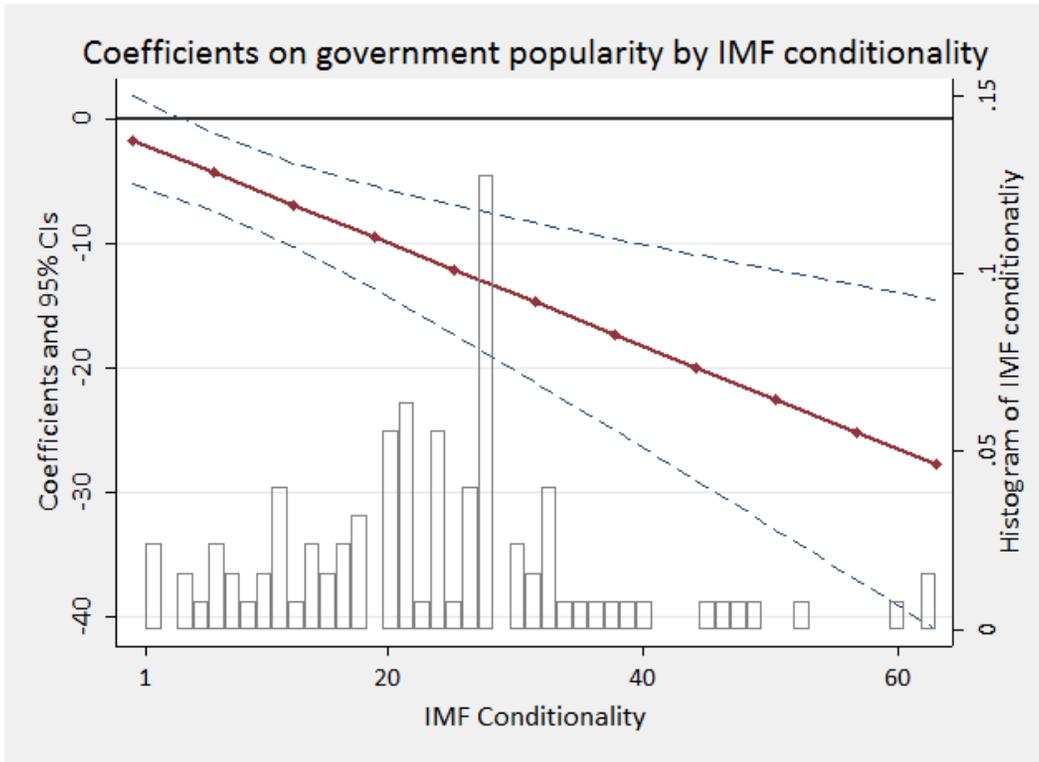
Table 2. Government popularity, IMF programs and sovereign bond spreads

DV: $\Delta$ bond spreads	(1)		(2)	
	Coef.	S.E.	Coef.	S.E.
1. Bond spread	-0.279**	-2.39	-0.316**	-2.35
1. IMF	1262.0	1.57	-459.2	-1.18
1. IMF conditionality			65.94**	2.52
1. Gov't popularity	3.520	0.79	2.078	0.51
$\Delta$ Gov't popularity	0.563	0.19	0.349	0.13
1. IMF $\times$ $\Delta$ Gov't popularity	-28.22***	-2.72		
1. IMF $\times$ 1. Gov't popularity	-35.74**	-2.09		
1. IMF Conditionality $\times$ $\Delta$ Gov't popularity			-0.801***	-3.20
1. IMF Conditionality $\times$ 1. Gov't popularity			-1.224**	-2.08
1. (log) IMF Quantitative conditionality	97.89	0.37		
1. (log) IMF loan	229.0	1.08	271.8	1.49
1. Sovereign default	109.7	0.63	-38.39	-0.20
1. GDP growth	-33.09***	-2.66	-53.77***	-3.07
$\Delta$ GDP growth	-28.04**	-2.46	-39.16***	-3.19
1. Polity2	4.155	0.26	4.200	0.21
1. Fractionalization	-281.3	-0.94	-453.5	-0.95
1. Election	45.17	1.02	24.45	0.65
1. Veto player	-177.1	-1.34	-126.5	-0.78
1. Right-wing government	-79.84	-1.10	20.26	0.29
$\Delta$ Right-wing government	-10.48	-0.09	121.8	0.79
1. Current account balance	11.62	1.25	3.912	0.52
$\Delta$ Current account balance	10.57	1.10	-1.607	-0.16
1. (log) GDP per capita	-140.7	-0.39	92.38	0.26
$\Delta$ (log) GDP per capita	-244.9	-0.50	122.6	0.15
1. UN voting	-222.2	-0.78	-297.6*	-1.76
$\Delta$ UN voting	-238.4	-0.64	-257.9	-1.34
Constant	1989.4	0.57	510.7	0.15
<i>K-P F statistics</i>	1.1		1.1	
<i>N</i>	412		385	

Country, region, and year fixed effects and the constituency terms of instrumental variables are included.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Figure 4. Marginal effect of government popularity on sovereign bond spreads across different levels of IMF conditionality.

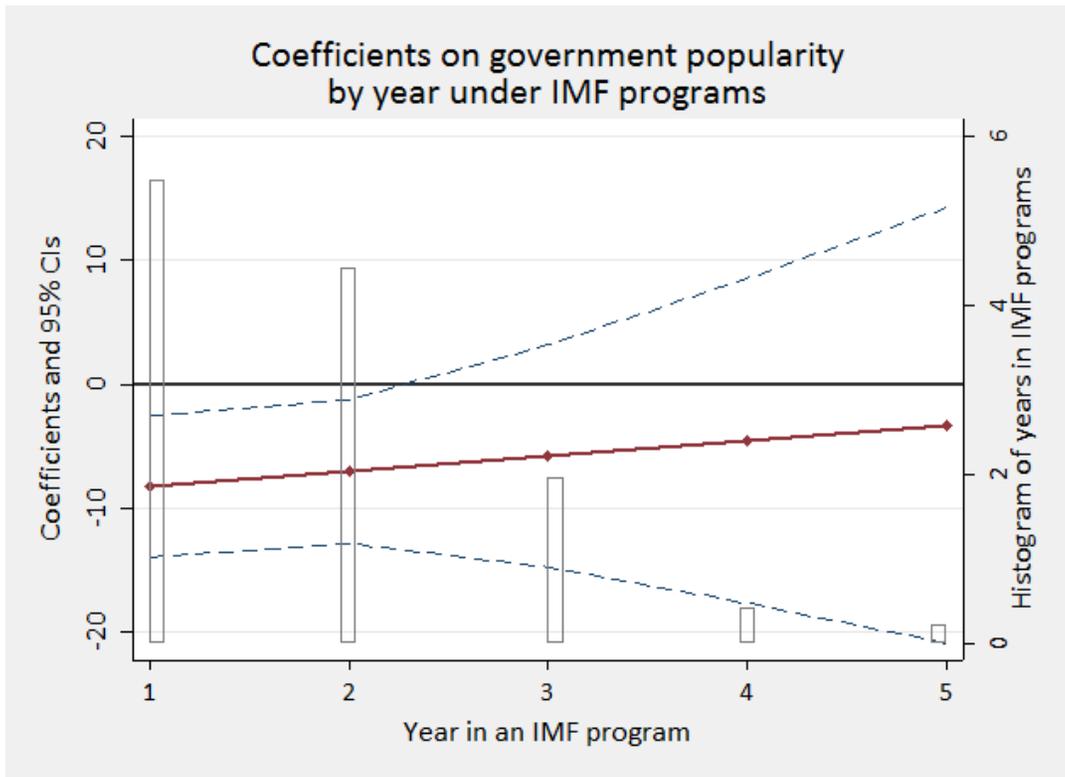


Moving to the long-term effects, the results show supportive evidence for the finite impact of government popularity. The coefficient of lagged independent variables indicates the long-term equilibrium relationship between those variables and sovereign bond spreads. The magnitude of the relationship, however, depends not only on those coefficients, but also on the coefficient of the lagged dependent variable (1. Bond spreads), which captures the rate at which changes in Y return to equilibrium. Specifically, the parameter calculating the long-term effect (long-term multiplier) is defined as  $-\frac{\beta_3}{\alpha_a}$ . Thus, the coefficient of lagged spreads indicates that (i) the long-term total effect of a 1% increase in government popularity is, on average, a 128.1 bp decrease, and (ii) more importantly, it takes the first two years for fully half of the total effect to

occur (22% in  $t$ , another 22% in  $t+1$  and another 6% in  $t+2$ ). The rest of the effect occurs gradually over a very long period.

Figure 5 presents further evidence for the decaying effect of government popularity. It shows the marginal effect of government popularity illustrated across the life cycle of IMF programs. Only during the first two years of IMF programs did government popularity have a negative, statistically significant effect on bond spreads. By the third year, investors have concrete information about the borrower's reform progress and do not look for cues to estimate the borrower's economic path.

Figure 5. Marginal effect of government popularity across the life cycle of IMF programs.



The control variables show the expected signs. Table 2 suggests that non-IMF

participants do not enjoy lower bond spreads for higher government popularity. I believe this is because investors have a fuzzier picture of the policy changes enabled by government popularity for non-IMF participants than for participants. Among other controls, GDP growth rates consistently achieve statistical significance with the expected signs. In line with the previous findings, countries with greater policy dissimilitude with the U.S. also tend to receive favorable reactions from investors (Chapman et al. 2015). Echoing the investors' claims in my interviews that they are agnostic about political morals, various political variables, including a borrower's regime type or government partisanship, do not explain investors' reaction to emerging market economies.

### **Robustness Check and Empirical Extension**

I perform a series of robustness checks and empirical extensions to increase confidence in my results. All of the results discussed in this section are available in the Appendix. First, I run an additional analysis on monthly, instead of yearly, variations to more credibly invoke the idea that government popularity is not a reflection of the underlying political and economic conditions. In the monthly analysis, most of the factors that might drive government popularity and bond spreads, such as GDP growth rate and government partisanship, remain constant within a unit. It thus creates stronger grounds for causal identification by allowing me to examine whether the monthly variation in government popularity explain the variation in sovereign bond spreads when other factors remain fixed. Despite such benefits, I opt not to use monthly data in my main analysis because it significantly reduces the sample size for data availability: I was able to assemble monthly government popularity for 26 countries from country-specific polls and the

Executive Approval Project dataset (Carlin et al. 2020).<sup>42</sup> Nonetheless, I replicate my main analysis on monthly data during 1/1998 – 12/2015.

To measure monthly IMF program participation, I again use two instrumental variables that utilize the same concept as those I use in my main analysis, but this time, I exploit monthly variation in them. Specifically, I first code *monthly* observed IMF participation for each country between January 1985 and December 2017.<sup>43</sup> Then, I calculate the share of months a country was under IMF programs between January 1985 and time  $t$ . To construct an instrumental variable, I interact the monthly share of IMF participation with the IMF liquidity ratio in the given year.

For the second instrumental variable, I again utilize the ideal policy difference between a country and the U.S. through UN voting data (Voeten et al. 2020). Because the data are on an annual basis, I tailor the dataset. Assuming that a country's ideal policy point moves incrementally over a year, I build a country's *monthly* policy dissimilitude (PD) with the U.S. as shown below and construct my second instrumental variable by interacting  $PD_{month t}$  with IMF liquidity in a given year. All my instrumental variables vary across countries each month. Because most economic and political variables do not change on a monthly basis, I include lagged annual levels, rather than changes, for the variables for which I do not have monthly data.

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<sup>42</sup> It includes Argentina, the Dominican Republic, Mexico, Honduras, El Salvador, Costa Rica, Panama, Colombia, Venezuela, Peru, Ecuador, Brazil, Bulgaria, Paraguay, Chile, Uruguay, Russia, Hungary, Honduras, Poland, Latvia, Ukraine, Turkey, South Korea, and the Philippines.

<sup>43</sup> I code monthly IMF participation based on the program's approval and expiration date.

$$PD_{month\ t} = \text{Previous year's PD} + \left( \frac{\text{Current year's PD} - \text{Previous year's PD}}{12} \right) \times \text{month}$$

The results (Table A5) are substantively similar to the main findings in Table 1 but with weaker statistical significance. I find no short-term effects, meaning that it takes at least more than a month for shocks in government popularity to affect bond spreads. However, there is systematic and significant long-term effects: a 1% increase in government popularity during IMF programs leads to, in total, a 51.53 bp decrease in bond spreads over time.

Second, I examine whether my findings hold across different regime types by interacting the main independent variables with a democracy dummy.<sup>44</sup> Two different theoretical predictions are plausible. On the one hand, international investors might discount the role of public opinion in nondemocratic regimes, as they lack formal institutions that hold policymakers accountable to the public. On the other hand, investors might consider polls from nondemocratic countries as seriously as those from democratic countries because rising discontent among the public without formal channels to transfer it to the state would impose potentially higher political risk. The results (Figure A4) support the latter prediction: while an increase in government popularity is negatively associated with sovereign bond spreads for both democracies and non-democracies, the effect is larger for non-democracies. This result, however, should be interpreted with caution because of the small number of observations (121 obs.) for non-democracies.

Next, I test whether the effect of government popularity varies by different political systems within democracies – presidential vs. parliamentary. The results hold in both systems,

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<sup>44</sup> I perform all the tests in this section on the yearly dataset except for the monthly analysis.

and the effect of government popularity is much larger in presidential than in parliamentary systems (Table A6). This is because unlike executives in parliamentary system, presidents are directly elected by the public and are not controlled by a major party, which makes them more susceptible to public opinion.

Furthermore, because IMF programs often produce uneven distributional consequences, I control for distributional consequences with Gini coefficients for each county-year. I also control for central bank independence because it can mediate the impact of public opinion on economic policy. In addition, I take into account a borrower's debt sustainability by controlling for its total reserve (% total debt). As expected, none of these changes affect my results in any substantial way (Table A7).

An additional question is whether government popularity has a different impact on investors depending on IMF conditionality. Recall that I use the sum of quantitative performance criteria (QPCs) and structural performance criteria (SPCs) in my main analysis (Table 1, model (2)). However, it is possible that investors pay more attention to one condition than another. For example, international investors might care mostly about QPCs in the wake of IMF programs, because QPCs include targets regarding fiscal and monetary policies that are directly relevant to government debt-service capacity. In contrast, SPCs include a wide range of reforms, ranging from appointing external panels on a certain issue to central bank reform, which may not be directly relevant to debt service.

Thus, Table A8 replicates the primary analysis, with counts of QPCs and SPCs included as separate covariates. QPCs show results very similar to the main findings: QPCs themselves are positively associated with bond spreads, yet when they interact with government popularity,

QPCs are highly statistically significant, with the coefficient signed in the negative direction. On the other hand, neither SPCs nor the interaction term between SPCs and government popularity show statistical significance. These results indicate that investors put more weight on QPCs than on SPCs, and the credibility cue provided by a borrower's popularity works mainly through the QPCs.

A final question is whether government popularity is actually associated with a successful implementation of IMF conditionality. While I argue that government popularity affects investors' *perception* of the prospect of implementing IMF conditionality, it is worth investigating whether the perception is correct because investor perception often deviates from a country's actual performance (Gray 2013). To my knowledge, Kentikelenis, Stubbs, and King (2016) have the most comprehensive dataset on IMF conditionality. It codes waivers as a proxy measure of implementation, assuming that noncompliance generates a waiver. Nonetheless, it is often unclear how to interpret waivers in terms of program implementation. For instance, zero waivers could mean perfect compliance, but it may well mean noncompliance for which a borrowing government did not request a waiver or the Fund did not grant one.<sup>45</sup> In addition, Kentikelenis et al. (2016) provide waiver data only until 2008, which would significantly reduce the sample in this study. Given the shortcomings, I build my own dataset for implementation rates, utilizing the information on implementation in the Fund's database on Monitoring Fund Arrangements (MONA). Given the abovementioned findings that investors emphasize

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<sup>45</sup> For example, for Russia's 1998 IMF program, there were significant concerns about Russia's noncompliance during the executive board meeting in June 1998, but the Kentikelenis, Stubbs, and King dataset reports zero waivers for Russia in 1998, which could be interpreted as perfect compliance.

quantitative conditionality (QPCs), I code the total number of QPCs and the number of observed QPCs for each year for every country in the period of 1992-2016 and measure implementation as a portion of observed QPCs over total QPCs.<sup>46</sup> The average implementation rate is 75.35%, which is consistent with the existing findings.<sup>47</sup>

The results (Table A9) suggest that investors' perception is indeed correct. Government popularity has a strong and positive correlation with IMF program implementation rates at statistically significant levels: a 10% higher popularity is associated with a 7% higher implementation rate.

## **Conclusion**

When does an IMF program successfully restore international investors' confidence in a borrower's economy? I identify public opinion as a key driver of credibility that explains both within- and across-country variation in investors' reaction to IMF programs and determines when and where Fund lending generates the desired catalytic effect among private international investors. I present robust evidence from both interviews and statistical tests that a rise in borrower governments' approval ratings leads to a favorable investor reaction and that the relationship is strongest in the initial years of IMF programs.

The findings have an important policy implication. A well-planned IMF program will do little good if the government tasked with implementing it has weak domestic political support. This will be critical during the current COVID-19 crisis, when many governments have received

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<sup>46</sup> An example of coding with further explanations is available in the Appendix.

<sup>47</sup> All studies using the MONA dataset, including mine, indicate approximately 75% average implementation rates (Ivanova et al. 2003; Nsouli et al. 2004; Arpac et al. 2008).

or planned to receive IMF funding while the pandemic has dramatically swayed their approval ratings. For those whose approval ratings have surged, such as Colombia's president, Ivan Duque, this is a window of opportunity because "improved popularity for Colombia's president Ivan Duque through coronavirus crisis could help the government pass difficult reforms through middle of 2021," as Fitch, a major credit rating agency, concisely noted.<sup>48</sup> Yet, for many others whose popularity has plummeted during the pandemic, the Fund must be aware that overcoming the current health and economic crisis will be extra challenging.

That said, IMF conditionality might not have a linear effect on investors' reactions. IMF conditionality is subject to a trade-off between reforms and political cost. Extra conditionality means more credible debt service only to the point where extra conditionality does not hurt the borrower's political capacity. In other words, conditionality helps a borrower restore international investors' confidence only when the borrower has the political capacity to implement the reforms. IMF economists and borrower governments' representatives should consider this trade-off to maximize the catalytic effect.

This research also speaks to an important area of the political science literature. First, it brings the domestic public to the fore in the political economy literature on IMF lending. To date, scholars have focused mostly on elites, such as the Fund's major shareholders, IMF economists, and borrower governments' bureaucrats. When studied previously, the public was often portrayed as lacking agency. This article shows evidence that public opinion during IMF programs varies

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<sup>48</sup> Cited in Emerging Sovereign Debt Market NEWS. p.23. Available at: [http://www.publicdebt.net/export/sites/pdm/pdm/newsletter/weekly-newsletter/attachment/Emerging-Sovereign-Debt-Markets-News\\_week\\_18-24\\_July\\_2020.pdf](http://www.publicdebt.net/export/sites/pdm/pdm/newsletter/weekly-newsletter/attachment/Emerging-Sovereign-Debt-Markets-News_week_18-24_July_2020.pdf)

both across and within countries and, more importantly, that varying public support has a significant impact on the consequences of Fund programs.

For scholars of international finance, this research pinpoints the mechanism through which public opinion becomes an important cue in the eyes of private investors. I show how the terms in the external commitments, such as IMF loan size and the stringency of conditionality, are less important than the domestic political context within which the commitment is implemented. Neither the factors that lead governments to sign on to IMF programs nor the macroeconomic conditions before and during IMF programs should be dismissed in explaining investors' response. I demonstrate that the level of political support for a borrower can have substantial effects. Since government popularity varies in a short period of time, unlike macroeconomic conditions or structural political factors, this finding makes a strong statement about why investors' response varies over time.

Finally, this research contributes to the literature on credible commitment and IOs by suggesting that domestic public opinion mediates IOs' function as a commitment mechanism. While many studies have focused on political institutions and power structures to explain the credibility of a state's international commitment,<sup>49</sup> I suggest that a state's credibility is subject to change in a short period of time depending on public opinion. The role of the public as a "credibility cue" should have similar effects for various policies that need domestic enactment and compliance.

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<sup>49</sup> See, for example, Leeds 1999; Simmons 2000; Simmons and Danner 2010

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