Abstract

International organizations (IOs) often drive policy change in member countries. Given IOs' limited political leverage over a member country, previous research argues that IOs rely on a combination of hard pressures (i.e., conditionality) and soft pressures (i.e., socialization) to attain their political goals. Expanding this literature, we hypothesize that IOs can enhance their political leverage through loan conditions aimed at politically empowering 'sympathetic interlocutors'. Studying this mechanism in the context of the International Monetary Fund (IMF), we argue that through prescribing structural loan conditions on central banks (CBI conditionality), the IMF empowers monetary authorities that can serve as a veto player to the government. Relying on a dataset including up to 124 countries between 1980 and 2012, we find that the IMF's CBI conditionality correlates to countries with fewer checks and balances, a less independent central bank, and where the government relies more heavily on the monetization of public debt.

Nontechnical summary of

Transforming Sympathetic Interlocutors into Veto Players

How international organisations, such as the IMF, address and achieve policy reforms in member countries is subject to a large and increasing politico-economic literature. Previously, scholars have argued that international organisations (IOs) employ a combination of hard pressure (e.g. conditionality) and soft pressure (e.g. socialisation) to attain political goals. This paper leverages these approaches and claims that IOs can use loan conditionality to target countries' institutions and thereby create necessary checks and balances on a government that would not exist otherwise.

This paper, in particular, focuses on a novel mechanism not previously studied: the institutional strengthening of central banks and promoting central bank independence (CBI). The argument rests on the hypothesis that the IMF deploys its loan conditionality with respect to CBI to create rather than to passively select a "sympathetic interlocutor", an independent national central bank. This sympathetic interlocutor does not bend to the wishes of governments but instead becomes a veto player, and for the IMF turns into a custodian safeguarding its twin goal of stabilising economies and sustaining long-term economic reforms.

We start by the presumption that underlying macroeconomic and financial distortions are deeply rooted in a country's politico-economic configuration, which is backed by an extensive empirical literature (see e.g. Keefer and Stasavage, 2003; Reinhart and Rogoff, 2008; Walter, 2013). A common denominator driving these macro-financial vulnerabilities is a lack of institutional checks and balances (Keefer and Stasavage, 2003; Keefer, 2007; Steinberg, Koesel and Thompson, 2013). Our hypothesis is that the IMF assigns CBI conditionality to countries which are falling short of these checks and balances on their governments. We derive our measure for CBI conditionality from the IMF conditionality database (Kentikelenis, Stubbs and King, 2016). It is built around six sub-indicators of CBI conditionality: Conditions on the central bank governor, the central bank mandate, policy independence of the central bank, prohibition of securitised lending or advanced to the government, audits of central bank's foreign exchange reserves and disclosure of information, and oversight and regulation of banks and the financial sector. Our data cover 124 countries for the period 1980-2012.

We test our argument using time-series cross-section statistical analysis in which CBI conditionality is our central dependent variable of interest.[1] We find strong support of our veto player argument, which holds against a wide range of specifications and robustness checks. Our model also helps to evaluate the pertinence of alternative explanations for CBI conditionality. In particular, exchange rate instability is positively related to the likelihood of CBI conditionality and also inflation growth has a positive relationship to CBI conditionality (both cases in which the IMF's bargaining power toward a member country is high). We are also able to show that the veto-player argument is particularly relevant, namely in times of rapid domestic debt growth and if the country is prone to a financial crisis. Also, the policy regime matters, where liberal political systems are more likely to receiving CBI conditionality as only democratic institutions endow veto players with constitutional rights and political means to enforce their veto power.

[1] More specifically we estimate a bivariate probit model in which both IMF programme participation and CBI conditionality are estimated simultaneously, thereby taking into account the non-random selection of the sample of IMF countries under consideration.

Our results have important policy implications: First, CBI conditionality correlates with an institutional strengthening of central banks and as such has the potential to alter political dynamics in borrowing countries towards greater macro-financial stability. Second, the IMF is not an innocent bystander if the independence of a central bank is put into question by (populist) governments and strong interest groups but can rather act as a "white knight" in their defence.

1 Introduction

International organizations (IOs) often drive policy change in member countries. However, given that IOs have few (if any) means of direct enforcement, it remains unclear how international IOs achieve policy change in member countries. A substantial literature in international relations distinguishes between coercive pressures (through high-powered material incentives, Steinwand and Stone (2008)), soft pressures (through naming and shaming, Kelley and Simmons (2015)), and persuasion – specifically by convincing 'sympathetic interlocutors' in the national bureaucracy – when analyzing the role of IOs for domestic policy reforms (Chwieroth, 2013; Farrell and Newman, 2014; Broome and Seabrooke, 2015; Park, 2018). Building off this literature, the goal of our paper is to introduce a novel mechanism into this debate. We argue that IOs can enhance their political leverage over member countries through loan conditions that target the institutional foundations of a member country. In particular, IOs can devise institution-building measures that transforms sympathetic interlocutors into veto players that can help to attain desired policy change.

We study this mechanism in the context of the International Monetary Fund (IMF). In this respect, IMF conditionality provides a unique laboratory for our theoretical claim. Since the 1980s, the IMF has been using a combination of quantitative targets and structural conditions when coming to the financial rescue of countries (Vreeland, 2003; Dreher, 2006; Gygli et al., 2018; Kentikelenis and Babb, 2019). In prescribing these adjustment programs, the Fund aims to achieve its twin goals of short-term stabilization and long-term policy reform. Knowing about the political costs of these adjustment programs, governments often try to avoid turning to the Fund for financial relief. For instance, Pakistani Prime Minister Imran Khan's administration openly opposed an IMF bailout fearing that it "*was not prepared to inflict pain on the Pakistani people.*"[1] In fact, a client country's policy preferences are typically not well aligned with IMF policy prescriptions. This often leads to non-compliance with program targets, the implementation of partial reforms and/or even a retreat from reform once the Fund leaves (Rickard and Caraway, 2019). Given the limited firepower of quantitative performance measures, the IMF often targets the institutional configuration underlying economic policymaking (Kentikelenis, Stubbs and King, 2016).

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[1] "Pakistan to Accept $6 Billion Bailout From IMF." The New York Times. May 12th, 2019.

Among structural loan conditions, enhancing the political independence of central banks constitutes a central pillar of these structural loan conditions (Blejer et al., 2002; Kern, Reinsberg and Rau-Göhring, 2019; Polillo and Guillén, 2005). The Fund regularly requires countries to end monetary financing of public debt, remove central bank governors and board members, move the monetary policy mandate towards inflation targeting and sometimes even pushes for full-fledged central bank reform. We refer to these loan conditions as CBI conditionality. Take for instance, the recent case of Mongolia. In its letter of intent to the IMF, the administration has pledged that "*a major priority will be the adoption of a new Bank of Mongolia (BOM) law [which will] clarify the BOM's mandate, strengthen governance, and improve independence*"(IMF, 2017, 61).[2]

Whereas in the short run, CBI conditionality aims to take off the speculative heat from the balance-of-payments, enhancing CBI effectively limits a government's ability to (ab)use monetary authorities for political purposes in the long run. A salient feature of CBI conditionality is that it transfers substantial political leverage over economic policymaking to central banks. We hypothesize that through empowering monetary authorities and insulating these from political pressures, the IMF tries to install an independent central bank as veto player to the government that can constrain a government's ability to implement unsound economic policies. Besides providing a point of entry into the domestic policy scene, an independent central bank can also support the IMF in nudging a government into painful austerity and reform measures. Although the IMF has a strong motive to apply CBI conditionality in all loan agreements, we expect that borrowers with fewer checks and balances on government, a politically less insulated central bank, and in a weak bargaining position toward the IMF to be more likely to face CBI conditions when requesting financial relief.

To test our main hypothesis, we constructed a dataset consisting of up to 124 countries between 1980 and 2012. To isolate IMF-mandated policy conditions aimed at enhancing CBI, we performed a computer-assisted keyword coding procedure on the IMF conditionality database (Kentikelenis, Stubbs and King, 2016) and validated these instances manually. Based on this information, we conduct bivariate probit analyses with CBI conditionality as our central dependent variable. Our

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[2]Similarly, pressured by the IMF, Argentina, Moldova, and Jamaica have recently joined the long list of Fund clients that are subject to CBI conditionality.

findings support our theoretical claims. We find overwhelming evidence that the IMF deploys CBI conditionality in countries with fewer checks and balances, a less independent central bank, and where the government relies more on monetary financing of public debt. Our results withstand a battery of robustness checks. Importantly, we show that our results hold even when accounting for selection effects into IMF programs. In line with our expectations, we also find supporting evidence that CBI conditionality is effective in achieving greater short- and long-term compliance with IMF program targets.

We contribute to several strands of the literature. First, our research complements a comparably large literature on the politics of IMF conditionality (Breen, 2013; Dreher, Sturm and Vreeland, 2015). Our contribution is most related to research that focuses on IMF structural reform conditions (Copelovitch, 2010; Beazer and Woo, 2016; Nelson, 2017). We show that countries with less checks and balances on a government are more prone to receive CBI conditionality. We argue that CBI conditionality is implemented to add these checks and balances and create a powerful veto player in the borrowing country that helps the Fund to attain its twin goals of stabilizing economies and sustaining long-term reforms. A particular innovation of our research is that the IMF *creates* veto players that are favorable to its own policy preferences, instead of passively selecting sympathetic interlocutors in a borrowing country (Woods, 2006; Chwieroth, 2013; Breen, 2013).

Second, we complement a fast-evolving political economy literature on CBI (Bodea and Hicks, 2015b; Ainsley, 2017; Garriga, 2016). As our approach offers a more fine-grained view on IMF involvement in central bank reform, we contribute to the existing literature on the role of the IMF for monetary institution building (Polillo and Guillén, 2005; Dincer and Eichengreen, 2014; Romelli, 2018). Furthermore, our work underscores the importance of CBI in constraining governments' leverage over economic policymaking and thus altering domestic political dynamics (Taylor, 2009; Bodea and Higashijima, 2017; Garriga and Rodriguez, 2019).

Finally, our contribution has important policy implications. Our results show that CBI conditionality is positively related to a political strengthening of national central banks, this altering domestic political dynamics. As CBI conditionality is often tied to technical assistance programs, we believe that these programs targeting national central banks can play an important role. At the

same time little is known about the design of these programs warranting future research. Importantly, given increasing political pressures on central banks to bend to populist demands (Binder, 2018; Goodhart and Lastra, 2018; Meyer and Kyle, 2019), we believe that the IMF will take a more active and stronger stand in defending its sympathetic interlocutors and serve as their guardian.

2 Argument

Since the IMF's lending operations started in the 1970s, the Fund has to a greatly varying degree attached conditions when providing loans to countries in need. IMF loan conditionality aims at limiting the scope of political agency that would undermine adjustment programs (Bird, 2007; Breen, 2013; Dreher, Sturm and Vreeland, 2015). Historically, the IMF requested the implementation of nominal austerity program measures to address policy distortions at the root of balance-of-payments crises (e.g., Dreher, 2009).[3] In an effort to put an end to the unsustainable dynamics that undermine the stability of the balance of payments, the IMF has traditionally requested governments to implement radical spending cuts and prescribed monetary measures to rein in excess credit creation.

In terms of monetary policy, IMF loan conditionality initially required governments to secure a minimum amount of foreign reserves and to enforce a ceiling on central bank assets. The IMF's goal was to limit excesses in domestic credit creation and to prevent a meltdown of international reserves in order to attain "*a sustainable balance-of-payments position*" (Blejer et al., 2002, 440). Upon recognizing the limited firepower of these instruments (IMF, 2005), starting in the 1990s, the IMF began targeting the institutional configuration of monetary policymaking. Since March 2000, the IMF has even institutionalized a so-called 'safeguards assessment' of central banks, which all loan recipients have to undergo prior to accessing funds. It consists of a multi-step process that aims "*to minimize the possibility of misreporting or misuse of Fund resources associated with the Fund's lending activities*" (IMF, 2005, 1).[4] Based on these assessments, the Fund often formulates

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[3]In general, these distortions arise from ballooning public deficits that are funded through excess money creation (Reinhart and Rogoff, 2009). In some other cases, regulatory failures allowing for imprudent lending and financial excesses in the domestic financial system are the source of these distortions.

[4]An in-depth review of the institutional and legal independence of monetary authorities constitutes an integral part of this process.

additional loan conditions, requiring countries to enhance CBI.

Amongst other things, the Fund regularly requires countries to end monetary financing of public debt, remove central bank governors and board members, and change from exchange rate management to inflation targeting. In some cases, the Fund pushes hard for substantial reform concerning the legal framework of central banks. For example, in the recent case of Argentina, the government agreed to overhaul the legal framework of its central bank, including a change of its policy mandate and a strict prohibition of monetary financing. According to the IMF's press release "*the government has pledged to provide the central bank with the institutional and operational independence and autonomy that is needed to achieve effectively inflation objectives*" (IMF, 2018*a*, 3). Alongside Argentina, several countries such as Ecuador, Mauritania, Mongolia, and Jamaica have recently joined the long list of IMF loan recipients that are engaging in monetary reform under the auspices of the Fund.

In the short term, by pushing for CBI conditionality, the IMF's immediate goal is to take off the speculative heat from the balance-of-payments. In crisis situations arising from monetary excesses, the credibility of monetary policy is severely undermined (Blinder, 2000; Blejer et al., 2002; Alesina and Stella, 2010). Citizens lose their faith in a monetary authority's ability to steer the financial side of the economy in a consistent manner.[5] Put in the words of (Blinder, 2000, 1422), people stop believing their central bank "*will do what it says.*" Thus, no matter how hard monetary authorities lean against inflationary and capital outflow pressures through increasing interest rates (even to sky high levels), financial investors will likely have doubts about the viability of these policy measures and flee a currency. Take for instance the case of Turkey. Similar to the situation today, the Bank of Turkey raised interest rates by 4000 basis in its attempt to contain speculative attacks on the Turkish Lira in 2000, triggering the most severe financial crisis in Turkish history (Arpac and Bird, 2009). In these situations, prescribing nominal measures such as propping up

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[5]In terms of monetary policymaking, it is a widely held notion that policymakers are tempted to (ab-)use monetary instruments for short-run political gain, even if this political meddling comes at the expense of higher inflation rates (Kydland and Prescott, 1977; Barro and Gordon, 1983; Blinder, 2000). Here, we rely on a broad definition of monetary credibility. This definition has been initially proposed by (Blinder, 2000, 1422): "*A central bank is credible if people believe it will do what it says.*" Thus, the degree of monetary credibility captures a central banker's ability to steer expectations concerning long-term interest rates and inflation. From a closed economy perspective, losing monetary credibility implies that a central bank cannot effectively anchor inflation expectations and thus loses substantial control over actual inflation outcomes (for a survey of related literature, see, de Haan and Eijffinger (2019).

interest rates or enforcing limits on domestic credit creation are ineffective to get hold of speculative dynamics (de Haan and Eijffinger, 2019). Thus, strengthening the institutional foundations of monetary policymaking towards greater political independence sends investors a strong signal that a government is invested in restoring the corroded credibility of monetary authorities (Blejer et al., 2002; Masciandaro and Romelli, 2018).[6]

At the same time, the Fund is concerned about removing the underlying forces behind these balance-of-payment imbalances. It is well established that severe balance-of-payments crises are often arising from ballooning public deficits that are funded through excess money creation (Reinhart and Rogoff, 2009; Steinberg, Koesel and Thompson, 2015). Besides directly funneling funds to the treasury, governments can use their central banks to perform an entire battery of direct and more subtle quasi-fiscal operations (Poast, 2015; Menaldo, 2015). For example, in the run-up to the Jordanian financial crisis in 1989, the central bank funded almost 60 per cent of the government budget (Maziad, 2009). In Argentina, years of monetary mismanagement have led to soaring inflation and put the economy into financial turmoil (Wylde, 2016; IMF, 2018a). There exist several case studies that display a similar pattern (Reinhart and Rogoff, 2009). In such a context, CBI conditionality aims to cut the tight financial cord between governments and their central bankers. For example, in Argentina, the government has agreed to "*prohibit all new, direct or indirect central bank financing of the Government*"(IMF, 2018a, 19).

Balance of payments vulnerabilities can also arise from excessive private indebtedness due to regulatory failures and malpractices (Reinhart and Rogoff, 2009). Although CBI takes away the money printing press, governments can endlessly reroute funds to key political constituents through state-owned banks, disbursing subsidized loans and/or to issuing loan guarantees (Menaldo, 2015; Aklin and Kern, 2019). As monetary authorities are often the main regulator overseeing the financial system (Masciandaro and Romelli, 2018), CBI conditionality forms an important pillar to remove these deep-sitting financial distortions and rebuild a beaten financial system. The case of Ukraine is particularly illustrative. As the main financial regulator, the National Bank of Ukraine – with

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[6]Furthermore, increases in CBI signal domestic and international investors that a government is committed to restore monetary stability. To underscore its sincerity to reform the monetary policy framework and enhance the credibility of these reform efforts, governments often tie their hands to the IMF (Simmons, 2000; Bodea and Hicks, 2015a).

the backing of the IMF – took a strong stand on cleaning-up the Ukrainian financial system and foreclosed some 89 banks of which several *were not really banks, but money-laundering machines.*[7]

Underlying macro-financial distortions are deeply rooted in a country's politico-economic configuration. Independent of whether excess public outlays are disbursed to garner an electorate's support or directly feed the pockets of special interest groups, these distortions tend to culminate in financial turmoil (Keefer and Stasavage, 2003; Reinhart and Rogoff, 2009; Walter, 2013). A common denominator driving macro-financial vulnerabilities is a lack of institutional checks and balances on a government's economic policy meddling (Keefer and Stasavage, 2003; Keefer, 2007; Steinberg, Koesel and Thompson, 2015). Take for instance, the recent case of Mongolia where powerful businesses have managed to infiltrate the country's political elite and successfully hijacked the policymaking process.[8] As result, between 2011 and the onset of financial turmoil in 2016, the government ignored the constitutional balanced-budget rule, spent way beyond its means and funded *"a plethora of politically motivated local infrastructure projects"* (Bauer et al., 2018, 6). To foot the bill, the Mongolian administration heavily relied on the domestic banking industry, and actively used its central bank in combination with its state-owned Development Bank of Mongolia (DBM) as flexible, off-balance spending accounts. Faltering economic growth and falling government revenues rendered public balance sheets unsustainable in 2016, requiring an IMF bailout (IMF, 2017; Bulag, 2018). As in many other instances, the Mongolian case illustrates how easy it is for a government to implement unsound financial policies when institutional checks and balances are weak or missing. In these situations, IMF-prescribed quantitative measures are not effective in addressing these underlying distortions in a sustainable manner, even though they might deliver some short-run relief.

We argue that the IMF deploys CBI conditionality to fill these institutional loopholes. Besides *"bolstering the position of reformers in the bureaucratic structure"* (James, 1996, 133), CBI conditionality shapes sympathetic interlocutors into veto players and thus strengthens the checks and balances on a government (Kahler, 1992; Woods, 2006; Chwieroth, 2013). We argue that by insulating monetary authorities from domestic political pressures, the IMF tries to install an inde-

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[7] "Ukraine's Gontareva on one of the Toughest Jobs in Central Banking." Central Banking. May 12th, 2019

[8] "Piercing the Fog – Mongolians are Getting Angry about Corruption." The Economist. January 17th, 2019.

pendent central bank that can serve as veto player to the government. There are several reasons that make the central bank an outstanding candidate for this purpose.

First, the IMF seeks to cooperate more intensively with 'sympathetic interlocutors' (Woods, 2006; Chwieroth, 2013; Ban and Gallagher, 2015). Central banks across the globe are well connected and often cooperate within various frameworks (Marcussen, 2007; Johnson, 2016). Marcussen (2007, 147) states that monetary policymaking *"has increasingly been lifted out of its national context, and international co-operation between central bankers has taken on a life of its own."* Besides years of meetings and interactions in various international fora, the IMF often provides technical assistance and tailored education programs to monetary authorities (Broome and Seabrooke, 2007; Broome, 2010; IMF, 2016).[9] Although many emerging market and developing economies lack qualified personnel, central banks often attract the most capable public servants. Thus, international meetings and the IMF's capacity building initiatives provide fertile ground for socialization, the spreading of ideas, and shaping central bankers into sympathetic interlocutors (Woods, 2006; Chwieroth, 2013; Broome and Seabrooke, 2015).

Second, the IMF wants to create a player that has sufficient economic and political leverage to effectively constrain a government. Central banks are the essential player in a country's financial system, determining the financing conditions for the private and public sector. An independent central bank can refuse to bend to a government's will to fund excess financial outlays, lower interest rates, disburse cheap credit, and even retaliate in response to a government's reckless spending behavior (Lohmann, 1998; Bodea and Higashijima, 2017; Diessner and Lisi, 2019). Beyond this, an independent central bank can help to nudge a government into painful austerity and reform measures. The case of Romania is particularly illustrative. Similar to other Eastern European countries, the Fund was a critical driving force behind legal and political independence of the Bank of Romania during the 1990s (Ban and Garbor, 2014; Ban, 2016). As an independent entity, the BNR was closely following IMF prescriptions. In fact, taking a firm stand (with the backing of the IMF), the BNR was effective in implementing restrictive monetary policies, cutting off state-owned

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[9]For instance, Broome (2010) emphasizes the importance of education programs of the Joint Vienna Institute for spreading ideas and best practices in terms economic policymaking. The Joint Vienna Institute is one of the IMF's five regional training centers that "offer hands-on, policy-oriented training in macroeconomics, finance, and related operational fields for country officials to assist them in their capacity development efforts"(IMF, 2016, 1).

banks from special funding windows, and nudging the government into fiscal restraint in times of economic slack (Ban, 2016).

Finally, a government is likely to agree to CBI conditionality.[10] Although a government loses direct control over a powerful instrument, enhancing CBI implies substantial economic and political benefits.[11] An appealing feature of CBI is that it sends a strong signal to international investors and leads to better financing conditions (Maxfield, 1997; Bodea and Hicks, 2015*a*). At the same time, a government can deflect blame to the central bank. This 'scapegoat' function of CBI becomes particularly important when governments face substantial political resistance, powerful interest groups threaten to retaliate, and governments have few to blame (Goodman, 1991; Fernández-Albertos, 2015). Take for instance the recent case of Ukraine. During a time when President Poroschenko in Ukraine was barely able to hold the country together, strengthening the independence of the National Bank of Ukraine (NBU) – under the auspices of the IMF – was critical to clean-up the cartelized financial system to restore macro-financial stability (Aslund, 2016). As result, the Governor of the National Bank of Ukraine, Valeria Gorentieva, became the main target for public resentment and received death threats.[12]

Against this background, we argue that in transferring political leverage over economic policymaking to monetary authorities, the IMF creates checks and balances on a government. This becomes more important when few institutional constraints on a government exist. In particular, in political systems with few veto players, creating an independent central bank will be comparably more powerful, substantially enhancing the IMF's political leverage. We synthesize these insights in our core hypothesis.

> *Hypothesis: The IMF assigns CBI conditionality to countries which have less checks and balances on their governments.*

Our theory has some additional observable implications. Building on previous work, we expect that the IMF more aggressively deploys CBI conditionality in certain institutional settings and

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[10]We note that in cases of alignment between national or central banks' interest and IMF preferences, the IMF conditionality will work as an amplifier.

[11]For a survey of this literature, see, Bodea and Hicks (2015*b*).

[12]"Valeria Gontareva: Reforming Ukraine's Banking System." Financial Times, March 26th, 2017.

under certain economic conditions. We discuss several conditions below.

First, CBI conditionality is more likely when the IMF has substantial bargaining power over a country. A country's bargaining power is often determined by the urgency of mobilizing funds (Nooruddin and Simmons, 2006; Stone, 2008). Thus, governments in dire (financial) straits – due to deteriorating financial conditions – might be more willing to sign on to a host of loan conditions and accept IMF-mandated monetary reforms to access much-needed financial relief (McDowell, 2017). Tajikistan is a case in point. Due to falling commodity revenues and remittances in combination with faltering budgetary balances, the Tajik government found itself in dire financial straits in January 2008. Trying to raise funds from international investors and the IMF, a high-ranking Tajik government official *"repeated several times that Tajikistan would be ready to accept any conditions the Fund demanded."* [13] Thus, when a government needs to mobilize funds urgently, the Fund has more political leverage and thus is more likely to assign CBI conditionality.

Second, we expect the IMF to apply CBI conditions during financial crisis. Besides providing a setting in which governments have an urgency to borrow, financial crises render governments more vulnerable to external pressures, such as from international creditors, which will increase the likelihood that they agree to CBI conditions (e.g., Walter, 2013). In these situations, accepting CBI conditionality and deep seated monetary reform helps to calm international investors and restore financial confidence. Take for instance, the case of South Korea. As result of the financial crisis in December 1997, the government swiftly enacted the Bank of Korea Act *"to secure and maintain the confidence of global financial markets"* (Pirie, 2007, 111). At the same time, financial crisis often weaken the bargaining power of powerful lobbies that might oppose central bank reforms and thus strengthen a government's position to enhance CBI (Grilli, Masciandaro and Tabellini, 1991; Rodrik, 2006). In the case of South Korea, traditional business groups that were benefiting from the central bank funded subsidized loan programs had a weakened bargaining position during the financial crisis (Pirie, 2007). Thus, we expect countries experiencing financial turmoil to receive more CBI conditions.

Finally, we anticipate the IMF to deploy CBI conditionality more frequently in democracies.

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[13] "Tajikistan Pleads for Help to Resolve Self-Inflicted Cotton Finance Crisis." Wikileaks. Cable ID $08DUSHANBE86\_a$.

There are several reasons that motivate this bias. Democracies provide greater enforcement of the rule of law, which is important in the context of CBI. Take for instance the case of Colombia. Since adopting CBI in 1991, commodity exporters and various other interest groups – opposing the central bank's ignorance towards their concerns about the exchange rate – have pushed several hundred legislative proposals to change the constitutional mandate of the Colombian central bank (Cárdenas, Junguito and Pachón, 2008). Given the deep anchoring of CBI in the country's constitution (i.e., Law 9), these efforts were unsuccessful. Put bluntly, once enshrined in a country's constitution and/or in binding legal provisions, CBI is harder to undermine in a democratic setting (Moser, 1999; Keefer and Stasavage, 2003; Bodea and Hicks, 2015b). Furthermore, the freedom of speech, enhanced transparency, and the ability to form an effective opposition against the government gives "*the central bank greater leeway in conducting policy*" (Bodea and Hicks, 2015b, 41). Thus, in a democratic setting, the IMF's newly created veto player has more firepower in implementing austere monetary policies and pushing a government into painful reforms.

3 Research Design

Our panel dataset consists of 124 countries from 1980 to 2012. We include all countries in the analysis for which data are available. Due to missing data, our panel is unbalanced, with more observations available for later sample years.

3.1 CBI conditionality

The key dependent variable in our analysis is CBI conditionality. To construct it, we proceeded in two steps. First, we conducted a computer-assisted search for keywords related to central banks in the substantive content of all IMF conditions in all IMF programs from 1980 to 2012. The full text of IMF conditions is available through the IMF conditionality database (Kentikelenis, Stubbs and King, 2016). Second, we validated the matches of this search through manual coding. We constructed six sub-indicators of CBI conditionality which we derived inductively from the full text of the CBI conditions.

The first sub-indicator captures conditions on the central bank governor, for example regarding

appointment procedures, term tenures, provisions for dismissal, prohibition of multiple terms, or the replacement of an incumbent governor. Tajikistan's IMF loan agreement in 2009 is a case in point. Given Governor Alimardonov's intimate involvement in a large scale financial scam and misreporting of central bank data, the US vetoed the disbursement of funds to the Tajik authorities unless it agreed to substantive central bank governance reform (Van Atta, 2009). A key pillar of CBI conditionality were new legal provisions concerning the appointment and dismissal of the central bank's board members and governor. Furthermore, the Tajik government agreed to "*introduce clear provisions for what constitutes conflict of interest behavior and introduce sanctions to be applied in the case of violations*"(IMF, 2009, 9).

The second dimension refers to the central bank mandate. Some conditions may require changes toward price stability as a key objective, while others may extend mandates to cover banking supervision. In some cases, conditions require the re-organization of the relationship of the central bank with the government. For example, in the recent case of Mongolia, the government stated in its letter of intent to "*to revamp the Bank of Mongolia (BOM) law to reorient the central bank toward a traditional mandate of price and financial stability and away from the type of imprudent policies pursued in recent years*" (IMF, 2017, 55). At the same time, the authorities agreed to grant the BOM greater political independence to implement monetary policy.

A third dimension refers to policy, which reflects the day-to-day operations of the central bank, including target rates and responsibility for policy formulation. These policy changes do not require changes to the central bank mandate. For instance, the IMF required Haiti to finalize a "*strengthened plan to recapitalize the central bank*" as part of its 2008 program.

A fourth type of conditions seeks to limit advances to government and securitized lending; in case such lending is not prohibited, conditions affect terms of lending to government, the nature of the beneficiary (excluding non-central government and private market), loan maturity, and interest rates. These provisions often aim to remove special funding windows to specific sectors, direct monetary financing of government outlays, and quasi-fiscal operations that are administered by monetary authorities. For example, in the recent case of Ecuador, the government agreed to "*introduce a prohibition on quasi-fiscal activities of the Central Bank [...] as well as any direct or*

indirect lending to the non-financial public sector, including that via public banks" (IMF, 2019, 81).

These four dimensions mirror existing typologies of CBI (Cukierman, Miller and Neyapti, 2002; Garriga, 2016; Bodea and Hicks, 2015*a*). Our inspection of loan conditions revealed two further dimensions. The fifth type of conditionality requires audits of central bank reserves, review of policies, and increased disclosure of information.[14] For example, the government of Mauritania recently agreed *"to improve the transparency of the BCM financial position and [...] publish a quantification of its 2017 accounts based in the International Financial Reporting Standards (IFRS) by end-December 2018 (structural benchmark)"* (IMF, 2018*c*, 6). Arguably, enhanced central bank transparency forms an important pillar of CBI. Besides, being an important instrument to steer inflation expectations, it provides an additional layer of checks and balances to better control how governments use funds that creditors entrusted them. By implication, a central bank that is more transparent and accountable to an informed public will be less susceptible to political pressure from its government (Dincer and Eichengreen, 2014).

Finally, our data also captures loan conditions that assign a central bank the task of overseeing and regulating banks and other financial institutions. This transfer of regulatory powers over a country's financial system is often necessary for comprehensive financial crisis resolution and for enacting substantive financial reform. At the same time, it takes away from a government a powerful instrument to manipulate financial market outcomes (Johnson, 2016; Masciandaro and Romelli, 2018; Aklin and Kern, 2019).[15] Take for instance, the recent case of Mongolia. In its attempts to rein in favoritism and arms-length lending practices, the IMF was pushing hard for CBI when extending a financial life-line to the authorities in Ulaanbaatar (Bulag, 2018; IMF, 2017, 2018*b*). As result, CBI conditionality transferred substantial supervisory authority to the BoM, creating a powerful actor to combat illicit financial activities and endemic corruption (IMF, 2018*b*).

As baseline specification, we chose to code CBI conditionality as a dichotomous variable. It takes the value of 1 whenever at least one CBI condition in a country-year observation is present

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[14] For instance, the IMF's 'Code of Good Practices on Transparency in Monetary and Financial Policies' according to which central banks *"should publicly disclose audited financial statements of its operations on a preannounced schedule"* (IMF, 1999).

[15] In several developing and emerging market economies, assigning financial regulation to the central bank arises due to the limited availability of qualified personnel. In all these instances, pooling the human capital resources at the central bank provides the most practical solution (Johnson, 2016).

Figure 1: CBI conditionality in IMF programs
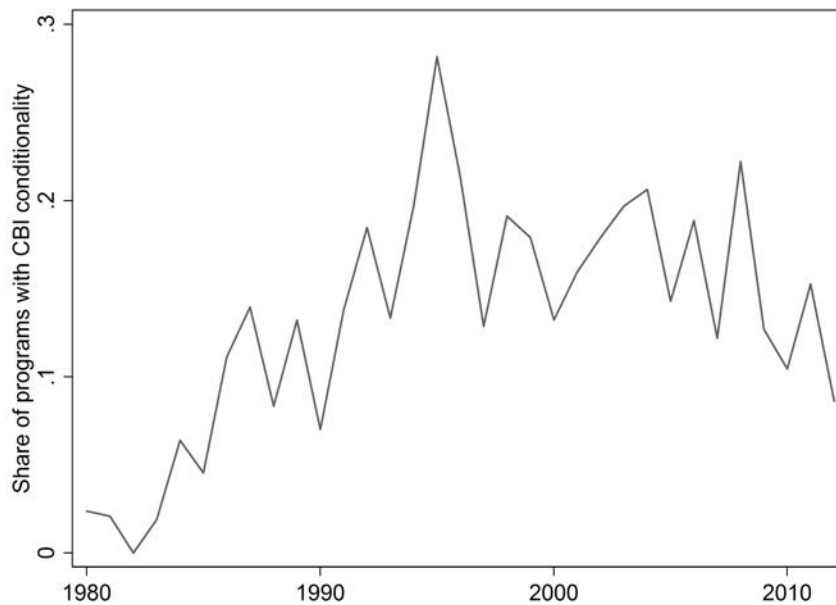
and 0 otherwise. Our descriptive statistics suggest that CBI conditionality is not a rare event. More than one out of four IMF programs included at least one CBI condition in the mid-1990s (Figure 1).

3.2 Checks and balances

We argue that the IMF deploys CBI conditionality to create an independent central bank that can serve as veto player to the government; this is particularly important where pre-existing checks and balances to the government (and its ability to exploit monetary policy for its own interests) are weak. To better isolate the mechanism underlying the use of CBI conditionality in the context of weak controls to the government, we draw on several measures of checks and balances, ranging from broad to narrow.

Our first measure of domestic constraints is the veto player index (Henisz, 2002). This measure is advantageous because it captures all relevant veto players in the political system while taking both their policy orientation and their relative strength into account. Bernhard, Broz and Clark (2002) argue that few veto players make CBI reforms less credible, as a government can easily

overturn them, while Dreher, Sturm and de Haan (2010) find that replacement rates of a central bank governor are higher when a larger number of veto players drop from the government. For these reasons, the IMF may want to use CBI conditionality seeking to establish a veto player in the form of an independent central bank precisely in situations where no veto players exist or are weak.

A second measure of domestic constraints relates to the system of government. We consider presidential systems to be more prone to political capture by the chief executive than parliamentary systems, given that presidents often have authority to rule under emergency provisions, especially in times of economic crises. Recent research findings support the notion that populist presidents are more apt to exert substantial pressure on their central banks (Meyer and Kyle, 2019). For example, in the run-up to the presidential election in 2010, President Kirchner forced the resignation of central bank governor Martin Redrado, who was reluctant to release the gold reserves of the country and accommodate populist financial policies (Santiso, 2013). Similarly, President Erdogan ousted Governor Murat Cetinkaya, who refused to bend to the president's will to lower interest rates.[16] Our measure of presidentialism is drawn from the Database of Political Institutions (Cruz, Keefer and Scartascini, 2018).

Our third measure – the lagged CBI index (Garriga, 2016) – more specifically captures the strength of the central bank as a potential veto player to the government. Arguably, if the central bank is already fairly independent, CBI conditionality is less needed. We therefore expect a negative coefficient.

3.3   Control variables

While there is no mainstay model to predict CBI conditionality, we draw on the CBI literature to identify potential confounding variables (Masciandaro and Romelli, 2015; de Haan and Eijffinger, 2019; Garriga, 2016). Following our theoretical discussion, we control for three alternative mechanisms for the inclusion of CBI conditions in IMF programs.

First, CBI conditionality may serve the purpose of (re-)establishing macroeconomic policy cred-

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[16] "Erdogan Ousts Central Bank Chief Who Drew Ire for Holding Rates." Bloomberg. July 5th, 2019.

ibility (Dincer and Eichengreen, 2014; Balls, Howat and Stansbury, 2016). This is particularly acute when the exchange rate is unstable and when inflation is accelerating. Therefore, we include the exchange rate stability index (Aizenman, 2018), available from the Political Economy Dataset (Graham and Tucker, 2019), expecting a negative relationship with CBI conditionality. To measure accelerating inflation, we include the change in the annual rate of inflation, computed from the World Development Indicators (World Bank, 2019), expecting a positive association with CBI conditionality.[17]

Second, CBI conditionality may help the IMF to obtain a clearer picture of the financial situation of a country, as it often forces governments to close separate accounts while making rent-seeking easier to detect (Bernhard, Broz and Clark, 2002; IMF, 2005). If IMF staff have prior reason to believe that corruption is a challenge in the country, it may want to establish an independent central bank – oftentimes staffed with likeminded appointees – to mitigate corrupt activities within the government. We therefore include the Varieties of Democracy (V-Dem) Corruption Index (Coppedge et al., 2016).

Third, CBI conditionality may be driven by domestic financial interest groups which would benefit from anti-inflation monetary policies (Posen, 1995; Menaldo and Yoo, 2015). For example, Posen (1995) argues that an inflation averse financial industry will try to push its government to implement greater CBI. To measure financial interests, we aggregate the financial assets held by the central bank, banks, and non-bank financial institutions (Pepinsky, 2013), expressed in percent of GDP, and apply the natural logarithm to remove skewness.

In addition to these alternative channels for CBI conditionality, we use a standard set of control variables from the CBI literature. The rationale for doing so is as follows: if CBI conditions achieve their stated aims, they should be predicted by the same factors that also underlie CBI itself. We thus follow the CBI literature but remove regime type from the list of control variables due to multi-collinearity with the number of veto players (Dincer and Eichengreen, 2014; Bodea and Hicks, 2015a; Garriga, 2016). Hence, we include the natural logarithm of GDP per capita. We

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[17]Here we follow more recent studies which implies that inflation levels are not important determinants of CBI, but rather measures of the variability of inflation or indeed inflation crises (Dreher, Sturm and de Haan, 2010; Romelli, 2018). Our change indicator follows this insight.

expect GDP per capita to be negatively related to CBI conditionality, given that emerging market economies and developing countries rely on foreign investors and have incentives to strengthen their monetary institutions (Maxfield, 1997; Bodea and Hicks, 2015b). Similarly, we include a measure for external debt, trade openness, and financial openness, as these mirror the importance of international creditors, trading partners, and financial investors and thus constitute channels of policy diffusion and international pressures to adopt CBI (McNamara, 2002; Polillo and Guillén, 2005; Crowe, 2008; Dreher, Sturm and de Haan, 2010). Data sources for total debt as percentage of GNI and trade openness – the sum of exports and imports divided by GDP – are from the World Development Indicators (World Bank, 2019), while financial openness is measured by the KOF index of financial globalization (Gygli et al., 2018).

In addition to these variables, we also include a set of dummies capturing the exchange rate regime (Klein and Shambaugh, 2010) – given that governments may try to achieve monetary policy credibility alternatively through pegged exchange rates – as well as income groups and world regions. We also include time polynomials up to the second order to capture common trends.[18]

To allow for CBI conditionality to respond to changes in underlying short-term macroeconomic circumstances, we lag all covariates by one year. This also mitigates potential concerns that our results are subject to reverse causality. We include the descriptive statistics and data sources for all variables in our dataset in a supplementary appendix (Table A1).

3.4 Methods

A potential challenge to our inference is selection into IMF programs as well as the potential endogeneity of key variables and controls.[19] On the first point, the previous literature has addressed this challenge by estimating this selection process explicitly – an approach that we follow here (Nooruddin and Simmons, 2006; Vreeland, 2006). Building on this previous work, we consider past participation (over a five-year horizon) as a predictor of contemporaneous participation (Moser and Sturm, 2011). In addition, we include the UN General Assembly average voting alignment of

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[18]Our results also hold for year dummies, as discussed in the robustness tests.

[19]The potential endogeneity issues will be addressed in follow-up work with a model with microfoundations. For example, the IMF's policy choice of whether or not to impose CBI conditionality could be rationalised with a loss function which depends on reputational costs for the IMF bureaucracy.

a borrower with the G7 countries, given that aligned countries are more likely to receive IMF loans (Vreeland and Dreher, 2014; Bailey, Strezhnev and Voeten, 2015). In addition, we leverage a set of macroeconomic variables – GDP growth, reserves in months of imports, and debt service as of GNI (World Bank, 2019) – to proxy that countries tend to turn to the Fund in times of economic turmoil. The first-stage selection equation also includes all variables from the CBI conditionality equation (along with dummies for exchange rate regime, income groups, and world regions).[20]

In effect, we estimate a bivariate probit model in which IMF program participation and CBI conditionality are estimated simultaneously, thereby taking into account the non-random selection of the sample of IMF countries. We allow for both equations to be correlated, using a correlation parameter ρ_{12}, and cluster standard errors on countries to account for the time-series dependency of country observations (Roodman, 2011).

If we are willing to ignore program selection, we may also use a simpler single-equation probit model. We do so in the appendix (Table A2); the results are fairly similar to the ones of the bivariate probit, thus indicating that neglecting the selection process into IMF programs that precedes the assignment of CBI conditions does not introduce significant bias. In the probit analysis, we compute clustered standard errors.

Because our outcome is binary and we thus estimate probit-type models, we cannot include country-fixed effects as doing so would cause the well-known incidental parameter problem (Greene, 2002). A common solution is to fit a linear probability model that can accommodate country-fixed effects. We do so in the appendix (Table A3), noting that our results are similar, at the exception of presidentialism which becomes insignificant due to limited within-country variation.

Formally, our preferred estimation approach can be represented as follows:

$$CBI_{i,t} = \begin{cases} 1 & \text{if } CBI_{i,t}^* > 0 \\ 0 & \text{else} \end{cases} \tag{1}$$

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[20]As discussed further below, our results hold for alternative specifications of the selection model.

$$IMF_{i,t} = \begin{cases} 1 & \text{if } IMF^*_{i,t} > 0 \\ 0 & \text{else} \end{cases} \tag{2}$$

$$CBI^*_{i,t} = \beta_1 V_{i,t} + \alpha_1 IMF_{i,t} + X'_{i,t}\gamma_1 + \sum_{r=1}^{R} \phi_{1r}I_r + \sum_{j=1}^{J} \varphi_{1j}I_j + \tau_{11}t + \tau_{12}t^2 + \varepsilon_{1i,t} \tag{3}$$

$$IMF^*_{i,t} = \alpha_2 Z_{i,t} + \beta_2 V_{i,t} + X'_{i,t}\gamma_2 + \sum_{r=1}^{R} \phi_{2r}I_r + \sum_{j=1}^{J} \varphi_{2j}I_j + \tau_{21}t + \tau_{22}t^2 + \varepsilon_{2i,t} \tag{4}$$

$$\begin{pmatrix} \varepsilon_{1i,t} \\ \varepsilon_{2i,t} \end{pmatrix} \sim \mathcal{N}\left[0, \begin{pmatrix} 1 & \rho_{12} \\ \rho_{12} & 1 \end{pmatrix} \right] \tag{5}$$

In these equations, $CBI_{i,t}$ and $IMF_{i,t}$ are the binary IMF variables, $V_{i,t}$ is an indicator for checks and balances, $X_{i,t}$ is a matrix of covariates, I_r is a series of region dummies, I_j represents income dummies, and t indicates the year of the observation. All other symbols – except $\varepsilon_{i,t}$ which refers to the error terms – are estimable parameters.[21]

4 Results

4.1 The determinants of CBI conditionality

Table 1 presents results from bivariate probit estimations on the joint probabilities of a country getting CBI conditionality and being under an IMF program. Overall, our veto-player argument receives strong support. All related measures behave according to our theoretical expectations. As substantive interpretation of coefficients in probit-type models is difficult, we simulate resultant changes in the predicted probability for a one-standard deviation in the respective indicator of checks and balances, leaving all other predictors at their mean and assuming the presence of an IMF program.

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[21]The simpler probit model, which we present in the supplemental appendix, can be expressed as: $P(CBI_{i,t}|IMF_{i,t} = 1) = \beta V_{i,t} + X'_{i,t}\gamma + \sum_{r=1}^{R} \phi_r I_r + \sum_{j=1}^{J} \varphi_j I_j + \tau_1 t + \tau_2 t^2 + \varepsilon_{i,t}.$

Determinants of CBI conditionality

	Veto player index		Presidential system		Past CBI	
CBI conditionality						
Checks and balances	-0.937***	(0.316)	0.557**	(0.221)	-1.004**	(0.448)
Exchange rate stability	-0.438**	(0.212)	-0.389*	(0.207)	-0.310	(0.213)
Inflation growth	0.024*	(0.014)	0.024*	(0.015)	0.025	(0.016)
Corruption index	-0.085	(0.440)	0.024	(0.433)	0.037	(0.459)
Financial interests	-0.114	(0.098)	-0.115	(0.094)	-0.169*	(0.092)
GDP per capita	-0.253	(0.157)	-0.320*	(0.169)	-0.195	(0.165)
Public debt	-0.073	(0.144)	-0.006	(0.159)	-0.048	(0.160)
Trade openness	0.139	(0.182)	0.174	(0.189)	0.134	(0.182)
Financial openness	-0.005	(0.007)	-0.007	(0.008)	0.001	(0.008)
IMF program						
Past programs	1.689***	(0.109)	1.651***	(0.112)	1.678***	(0.123)
UNGA vote alignment	2.972***	(1.018)	3.411***	(1.030)	3.489***	(1.023)
GDP growth	-0.033***	(0.009)	-0.033***	(0.009)	-0.030***	(0.010)
Reserves	-0.103***	(0.026)	-0.094***	(0.025)	-0.089***	(0.025)
Debt service	0.014	(0.012)	0.015	(0.014)	0.014	(0.013)
Checks and balances	0.121	(0.261)	0.302***	(0.109)	0.671**	(0.278)
Exchange rate stability	0.108	(0.171)	0.124	(0.166)	0.024	(0.174)
Inflation growth	0.001	(0.012)	0.000	(0.012)	0.000	(0.012)
Corruption index	0.255	(0.232)	0.221	(0.238)	0.364	(0.313)
Financial interests	-0.084	(0.057)	-0.068	(0.056)	-0.075	(0.060)
GDP per capita	-0.301***	(0.105)	-0.324***	(0.101)	-0.297***	(0.107)
Public debt	0.287***	(0.093)	0.308***	(0.093)	0.242**	(0.106)
Trade openness	-0.164	(0.115)	-0.150	(0.116)	-0.079	(0.125)
Financial openness	-0.007	(0.005)	-0.008*	(0.005)	-0.008	(0.005)
Regional dummies	Yes		Yes		Yes	
Income dummies	Yes		Yes		Yes	
FX regime dummies	Yes		Yes		Yes	
Time trends	Yes		Yes		Yes	
Observations (Equation 1)	1226		1226		1119	
Pseudo-R2 (Equation 1)	0.125		0.127		0.132	
Observations (Equation 2)	1883		1883		1674	
Pseudo-R2 (Equation 2)	0.352		0.356		0.356	

Table 1: Checks and balances is the variable shown in the column header. All predictors lagged by one period. Heckman model with a probit-type IMF program equation and a linearized outcome equation. Standard errors clustered on countries. Significance levels: $*$:$p < 0.1$, $**$:$p < 0.05$, $***$:$p < 0.01$.

A one-standard deviation decrease in the veto player index is positively associated to the predicted probability for CBI conditionality.. A hypothetical move from a non-presidential system to a presidential one is increasing this likelihood from 4.4% to 12.6%. A one-standard deviation drop in prior CBI from its mean is associated with an increase in the probability of a condition from 11.1% to 15.5%.

Our model also helps evaluate the pertinence of alternative explanations for CBI conditionality. In particular, exchange rate instability tends to increase the likelihood of CBI conditionality, but the effect is statistically significant only in two models. Inflation growth, which is marginally significant in two models ($p < 0.1$), makes CBI conditionality more likely. Other mechanisms receive less support in the data: Corruption is insignificant, while the strength of financial sector interests has no relationship with CBI conditions, except in the last model ($p < 0.1$). Given that the Fund's structural benchmarks often include "*not only specific anti-corruption measures but also broader regulatory and institutional reforms*"(IMF, 2018c, 2), the findings concerning the insignificance of corruption are somewhat surprising. A potential explanation is that the IMF sets its priority towards anti-corruption measures instead of deploying extensive CBI conditions. The recent case of Ukraine is case in point. Although the IMF program entailed several provisions concerning CBI, the Fund prioritized "*the establishment of an independent and trustworthy anti-corruption court.*"[22]

Our lack of strong findings on the role of financial sector interests might be due to several factors. First, an implicit assumption underlying Posen's (1995) argument is that the financial sector is inflation-averse. However, in cases where the financial industry has built its business models on rampant inflation, these financial players will have no incentive to alter the existing monetary regime and might even openly oppose CBI. Turkey is a case in point. In the early 2000s, the Turkish financial industry and international investors were mobilizing political support against CBI, as they benefited from high inflation rates (Demir, 2004; Öniş and Bakir, 2007). Second, although an inflation averse financial sector might push for CBI, Posen (1995, 256) admits that "*isolating any one interest group as the primary source of effective opposition to inflation in all countries seems, of course, limiting.*" Finally, even in light of political pressures from other

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[22] "Ukraine Passes Corruption Law in Bid for more IMF Aid." Reuters. June 7th, 2018

societal groups or an inflation averse population (Hayo and Hefeker, 2002; Scheve, 2004; Bearce and Tuxhorn, 2017), the government might have their own incentives to bolster CBI. For example, in the case of South Korea in 1997, the government was actively relying on the IMF to push through an updated version of the Bank of Korea Act in order to calm international investors (Cargill, 2001).

Turning to the first stage, our results are broadly in line with previous research on the determinants of IMF programs, confirming the importance of recidivism ($p < 0.01$), borrowing government alignment with G7 countries ($p < 0.01$), as well as weak economic fundamentals, such as low economic growth, low reserves, and high indebtedness. At the exception of the veto player index, our measures of checks and balances are generally related to being under an IMF program. What is more, we find evidence that economic fundamentals, such as GDP per capita and public debt, are robustly related to IMF programs, with coefficient estimates being qualitatively consistent with theoretical expectations.

Overall, our models explain a moderate share of the variation. Specifically, CBI conditionality turns out to be hard to predict, as indicated by a lower pseudo-R^2 (Domencich and McFadden, 1975) compared to that of IMF programs.

To eliminate the possibility that our results are driven by arbitrary model choices, we perform a series of robustness tests. We report the associated regression tables in the supplemental appendix. First and foremost, we estimate single-equation models that ignore potential selection into IMF programs (Table A2). We find that our results are virtually unchanged for probit models. In the linear probability models with country fixed effects, the coefficient of presidential systems becomes insignificant, given that this variable hardly varies within countries (Table A3).

In another robustness test, we alter the specification of the selection model, using additional variables that past research has used to predict country participation in IMF programs (Table A4). These variables include G5 bank exposure (Copelovitch, 2010), temporary UN Security Council membership (Vreeland and Dreher, 2014), and changes in the US interest rate (Arias, 2017). While these variables do not help improve the fit of the selection model, they also do not alter our coefficients of interest. Next, we depart from the binary operationalization of CBI conditionality

and count the (logged) number of CBI conditions across six dimensions.[23] While we prefer the binary measure – given that the event is rare and that number of CBI conditions is a poor reflection of the substantive content of the required CBI reforms – all of our checks and balances measures, except past CBI survive, pass the test (Table A5).

Furthermore, we operationalize CBI conditionality only using four dimensions, thus mirroring the coding protocol of most CBI indices (Garriga, 2016; Bodea and Hicks, 2015*b*; Cukierman, Webb and Neyapti, 1992). This does not alter our results, suggesting that these four dimensions capture the most important variation (Table A6).[24] Our results also do not change when replacing some control variables with alternative measures (Table A7). For instance, we replace corruption with government transparency (Hollyer, Rosendorff and Vreeland, 2011), which reduces the sample size and somewhat reduces the power of our tests. Replacing the KOF index of financial globalization with logged G5 bank exposure does not affect the results either, as does using alternative measurements of exchange rate regimes (Levy-Yeyati and Sturzenegger, 2005). We also report that controlling for year-fixed effects leaves our results qualitatively unaffected (Table A7).

In addition, we verify that CBI conditionality is not prescribed as part of a reform package which itself responds to certain country characteristics. To that end, we additionally control for the respective counts of structural conditions and stabilization conditions in a given IMF program. While these conditions individually help predict CBI conditionality, our core results on checks and balances remain robust – if not becoming stronger (Table A8).

Finally, we address potential concerns about post-treatment bias by running our analysis on a stripped-down model that just includes the three sets of dummy variables respectively for world regions, income groups, and the exchange rate regime, as well as an IMF selection model. Our results are virtually unaffected (Table A9).

To lend further credibility to our argument, we exploit our fine-grained coding protocol which distinguishes different dimensions of CBI conditionality. According to our theoretical predictions, weak veto players should be positively associated to CBI conditionality specifically in the area

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[23]We use the hyperbolic transformation asinh(x) to avoid missing values on negative arguments.

[24]We also deploy alternative CBI indicators, such as a weighted version that assigns half of its weight on limits to quasi-fiscal operations, which strengthens our results further. Furthermore, our results are virtually unchanged when using an alternative CBI indicator altogether (Bodea and Hicks, 2015*b*).

of central bank mandates. They should also relate to central bank policy, but to a lesser extent, because the IMF can impose inflation targets and monetary policies more directly upon the government through stabilization conditions rather than through central bank reform (e.g., IMF, 2014). Furthermore, if the purpose of CBI conditions is to limit quasi-fiscal operations, the respective dimension should be significantly related to veto players.

Table 2 shows the results from simple probit analyses. Consistent with our expectations, we find a significantly negative association between veto players and CBI conditionality on central bank mandates ($p < 0.05$), and a less significant one with central bank policy ($p < 0.1$). There also is a significant relationship with quasi-fiscal operations ($p < 0.05$), bolstering our hypothesized mechanism. The fact that several dimensions of the CBI index are affected by the pre-existing strength of veto players suggests that the IMF promotes independent central banks for broad purposes – indeed its long-term goal is to establish a sympathetic interlocutor that can control the government in many related policy fields and that provides an entry point for IMF advice.

Sub-dimensions of CBI conditionality

			Dimension of CBI conditionality			Banking
	Governor	Mandate	Policy	Quasi-fiscal operations	Transparency	regulation
Checks and balances	-0.742	-1.161**	-0.828*	-0.881**	-0.616	-0.529
	(0.529)	(0.572)	(0.437)	(0.408)	(0.435)	(0.477)
Exchange rate stability	0.149	-0.512	-0.366	-0.411	-0.149	-0.196
	(0.276)	(0.433)	(0.312)	(0.277)	(0.351)	(0.393)
Inflation growth	-0.002	0.023	0.021	0.042**	0.029	0.040**
	(0.025)	(0.019)	(0.017)	(0.016)	(0.021)	(0.019)
Corruption index	-0.926	-0.214	-0.094	0.476	-0.498	0.284
	(0.854)	(0.731)	(0.518)	(0.510)	(0.575)	(0.622)
Financial interests	-0.212***	0.034	-0.129	-0.137*	-0.098	-0.272***
	(0.071)	(0.092)	(0.086)	(0.082)	(0.078)	(0.074)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Selection model	No	No	No	No	No	No
Observations	889	1078	1166	1226	1226	1226
Pseudo-R2	0.166	0.249	0.141	0.183	0.204	0.231

Table 2: Checks and balances is the veto player index. All predictors lagged by one period. Probit estimation with standard errors clustered on countries. Significance levels: $*{:}p < 0.1$, $**{:}p < 0.05$, $***{:}p < 0.01$.

In addition, we examine several circumstances under which we would expect our veto-player mechanism to be particularly relevant. We therefore allow the effect of veto players upon CBI conditionality to vary across these circumstances. For binary moderator variables, we perform split-sample analysis. For continuous moderators, we add them to the model, along with multiplicative interaction terms with veto players to study their conditional marginal effect.[25] Given that these marginal effects cannot easily be read off from non-linear models, we follow common practice and plot these effects (Braumoeller, 2004; Brambor, Clark and Golder, 2006; Hainmueller, Mummolo and Xu, 2019).

Domestic debt growth: The bargaining position of a government versus the Fund is determined by the urgency to mobilize funds (Stone, 2008; McDowell, 2017). In this respect, the absorptive capacity of the domestic financial system and thus financial depth play a critical role (Woo, 2006; Menaldo, 2015; Brooks, Cunha and Mosley, 2015). For instance, Woo (2006) finds that financial market development is a critical factor determining the level of outstanding debt, whereas Menaldo (2015) shows that excessive government indebtedness is a root cause for financial underdevelopment. Thus, if government debt is exceeding domestic private money creation, the domestic financial system is likely not in a position to absorb additional debt issuances, increasing the reliance on mobilizing funds from money printing or international investors (Ballard-Rosa, Mosley and Wellhausen, 2019). Thus, debt spikes should be positively associated with CBI conditionality, reinforcing the need for establishing an independent central bank as veto player to promote deleveraging and enhance the absorptive capacity of the domestic financial system. We scale domestic debt growth by broad money in order to account for the relative importance of government debt in the domestic financial system, whereas higher values indicate a more dominant role of government debt in domestic financial markets (Krishnamurthy and Vissing-Jorgensen, 2012). Both variables are available from the World Development Indicators (World Bank, 2019). We find that domestic debt shocks relate to a more robust association between veto players and CBI conditions. Figure 2 shows that for any positive debt shock – leading to a rapid increase in debt levels over broad money – low levels of veto players as associated with the likelihood of CBI conditions. The reverse

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[25]To keep the analysis manageable, we focus on the veto player index and study how its marginal effect with respect to CBI conditionality changes under different circumstances.

is true for negative debt shocks.

Figure 2: *Marginal effect of veto player index at different levels of domestic debt growth*

Dashed lines give 90% confidence interval.
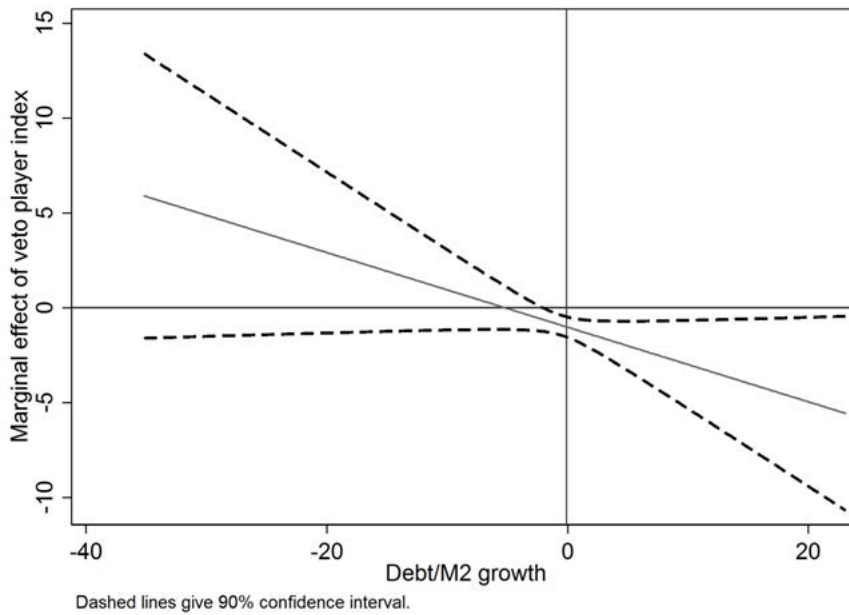
Financial crises: We posit that during financial crises, governments are more vulnerable to external pressures, such as from international creditors, which will increase the likelihood that they agree to CBI conditions. Our hypothesis analogizes from Masciandaro and Romelli (2018) who find that financial crises catalyze changes in central bank mandates to include financial regulation. As financial crises are singular events, we consider crisis episodes and restrict the estimation sample to all observations within a ten-year frame around the crisis year (Kern, Reinsberg and Rau-Göhring, 2019). We find that the veto player index is related to CBI conditionality specifically during financial crisis episodes. In contrast, it is insignificant for non-crisis observations (Figure 3).

Figure 3: *Marginal effect of veto player index and financial crisis episodes.*
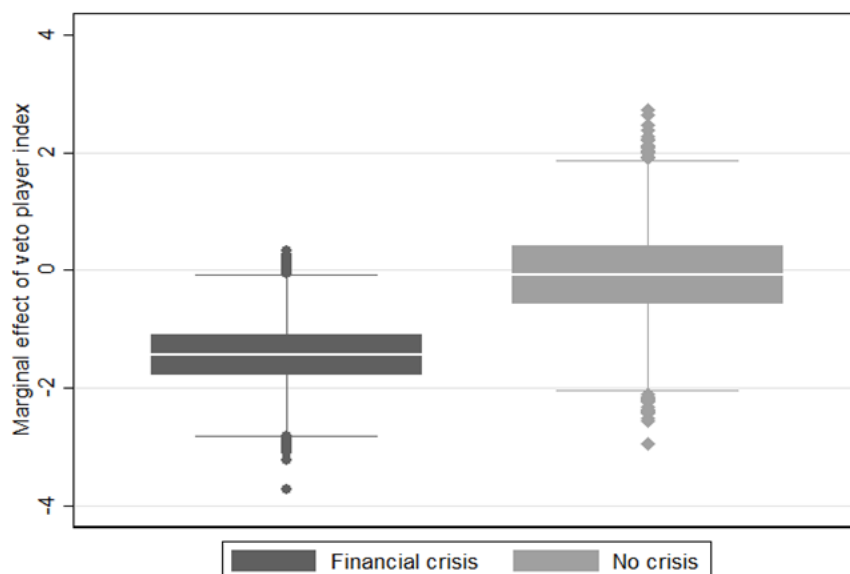
Regime type: Veto players need to have the ability to constrain government executives. Democratic institutions endow veto players with the constitutional right and actual possibilities to do so. We therefore expect the effect of veto players to matter even more in democracies. To capture democratic governance, we use the combined Freedom House index, available from the Quality of Government dataset (Teorell et al., 2018), which gauges the extent of civil liberties and political rights across regimes.[26] We find that veto players are significantly related to the likelihood of CBI conditionality only in liberal political systems; their marginal effect becomes insignificant above the mean of democratic governance (Figure 4).

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[26]As discussed before, the Polity IV index is a sub-optimal alternative as it captures institutional constraints and thus correlates with the veto player index.

Figure 4: *Marginal effect of veto player index across different levels of regime type*

Dashed lines give 90% confidence interval.
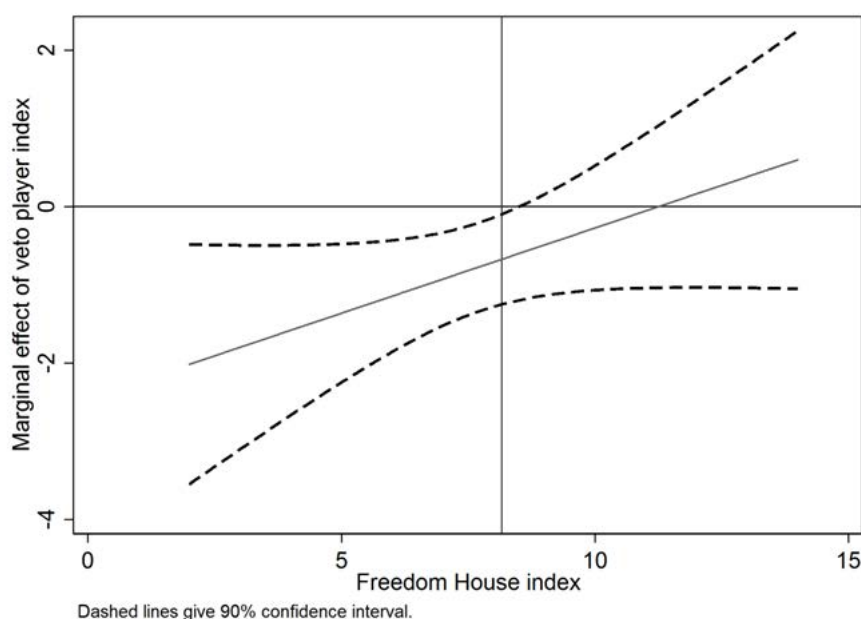
4.2 Related outcomes

We now test some additional empirical implications of our argument.

First and foremost, the IMF aims to promote CBI, which itself is an important institutional mechanism to keep inflation at bay (Garriga and Rodriguez, 2019). Indeed, we know from previous research that CBI conditionality is effective in increasing CBI (Kern, Reinsberg and Rau-Göhring, 2019). The IMF's additional motive for promoting an independent central bank (specifically where none previously existed) is to create a sympathetic interlocutor that is amenable to its advice and thus can serve as an institutional check on governments. Shaping this powerful domestic ally supporting its agenda, the IMF envisions to secure the long-term sustainability of its policy advice.

Second, given the need to install central bank personnel that is aligned with IMF doctrine, we should see more frequent irregular turnovers of central bank governors in countries under IMF programs. Indeed, we find irregular turnover rates to be higher in IMF program countries, and even higher in countries with CBI conditions. Strikingly, the average tenure of central bankers in these cases is lower, about half of the tenure in non-borrowing countries. In the small sample for which

the respective data are available, we also find that the degree of alignment between IMF staff and central bankers is higher, and that more officials in the policy team of the recipient have an Anglo-American educational background, if the country is under an IMF program compared to when it is not. The differences are even starker when one considers IMF programs with CBI conditionality, thereby giving credence to the notion that the Fund creates sympathetic interlocutors through such conditions (Woods, 2006; Chwieroth, 2013; Broome and Seabrooke, 2015). Although these simple bivariate statistics do not imply any causation, these are in line with our theoretical predictions. We report the results of this analysis in Table 3.

Table 3: CBI conditionality and governor turnover

	Irregular turnover	Years in office	Governor grade	Anglo-American policy team	Sympathetic interlocutors
IMF program	(N=4,545)				
No	0.105	3.578	2.245	15.242	0.749
	(0.306)	(3.103)	(0.895)	(23.703)	(1.218)
Yes	0.177	1.452	2.571	18.198	0.912
	(0.381)	(2.063)	(0.790)	(25.722)	(1.296)
CBI condition	(N=1,361)				
No	0.176	1.462	2.522	17.925	0.898
	(0.381)	(2.213)	(0.790)	(25.877)	(1.297)
Yes	0.181	1.400	2.800	19.872	0.997
	(0.386)	(1.140)	(0.837)	(24.927)	(1.306)

Notes: Irregular turnover refers to share of sample observations in which governors were replaced before their end of term (Dreher, Sturm and de Haan, 2010). Years in office captures the average years of actual tenure in the given treatment group, while governor grade is an index reflecting the formal qualification of the central bank governor, both available from the Superstar Central Banker dataset (Neuenkirch and Tillmann, 2016). Information on the background of policy teams and 'sympathetic interlocutors' is from (Chwieroth, 2013).

Our results lend support to the notion that the Fund uses CBI conditions for 'political interference' to affect central bank governor appointments, and this interference is geared toward installing more hawkish governors. This would ultimately help underpin the credibility of moves toward CBI (Kern, Reinsberg and Rau-Göhring, 2019), while creating the benefit of establishing a veto player in the borrowing country that is aligned with IMF preferences. In fact, we find that CBI conditionality goes hand in hand with a reduction in money growth by about 70 percentage points ($p < 0.1$) within a one-year horizon. Furthermore, there seems to be weak evidence that IMF programs (as such) are also negatively related to money growth, but this effect becomes statistically insignificant when taking selection effects into account.[27] Our results thus confirm that CBI conditionality is necessary for reducing money growth (Table 4).

CBI conditionality and monetary policy outcomes

	Broad money growth (%)		M2 growth (%)	
	(1)	(2)	(3)	(4)
CBI conditionality	-70.404*	-70.380*	-72.118*	-72.093*
	(40.377)	(40.194)	(40.261)	(40.079)
IMF program	-79.297*	-85.058	-78.964*	-84.707
	(43.095)	(51.919)	(43.045)	(51.835)
GDP per capita	37.723	37.421	38.075	37.779
	(33.757)	(33.858)	(33.718)	(33.811)
Public debt	103.672	104.128	103.126	103.578
	(67.925)	(68.374)	(67.645)	(68.088)
Trade openness	50.015	49.931	48.535	48.449
	(77.583)	(77.246)	(77.320)	(76.983)
Financial openness	-5.437**	-5.428**	-5.429**	-5.420**
	(2.496)	(2.479)	(2.497)	(2.480)
Control variables	Yes	Yes	Yes	Yes
Program selection	No	Yes	No	Yes
Observations	1733	1733	1738	1738
Within-R2	0.044	0.044	0.044	0.044

Table 4: Standard errors clustered on countries. Significance levels: $*: p < 0.1$, $**: p < 0.05$, $***: p < 0.01$.

Finally, our argument implies that the IMF would effectively create a powerful player with pro-compliance preferences on IMF conditionality, not only with respect to monetary policy conditions but also broader themes that such conditionality may touch. To test this idea, we rely on a dataset on program interruptions (Kentikelenis, Stubbs and King, 2016). Specifically, we test how CBI

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[27]We perform these tests in a fixed-effects framework and include additional control variables from the CBI conditionality model. Our dependent variables are broad money growth (%) and growth of M2 (%) – both yield very similar results, regardless of whether or not we account for non-random selection of IMF programs using the aforementioned probit-type selection model.

conditionality is related to the likelihood of permanent interruptions, which can be understood as the result of non-compliance with IMF conditions (Stubbs et al., 2018; Kern, Reinsberg and Rau-Göhring, 2019). Our results are robust to alternative model specifications and two levels of analysis. Country-year analysis – whether considering non-random selection of IMF programs or not – reveals a short-term negative association between CBI conditionality and the likelihood of program failure ($p < 0.1$). Substantively, the effect is about -10 percentage points, which is significant given an average failure rate of 37%. Effect sizes increase further when considering the medium-term impact of CBI conditionality on program failure over the entire lifetime of programs. When using IMF programs as the unit of analysis, the compliance-inducing effect of CBI conditionality is 17 percentage points, as the failure rate drops from 45% to 28%. This effect is strongly statistically significant (at least $p < 0.05$) and also robust against inclusion of an IMF program selection equation, and against controlling for condition waivers as an instrument to avoid program failures.

Program compliance following IMF interventions with CBI conditionality

	(1)	(2)	(3)	(4)
Permanent interruption				
CBI conditionality	-0.297*	-0.103*	-0.463***	-0.412**
	(0.175)	(0.058)	(0.172)	(0.178)
GDP per capita	0.425**	0.161**	0.283	0.231
	(0.197)	(0.068)	(0.173)	(0.176)
Public debt	0.137	0.032	0.269*	0.288**
	(0.161)	(0.059)	(0.145)	(0.145)
Trade openness	0.184	0.071	-0.066	-0.023
	(0.169)	(0.060)	(0.142)	(0.145)
Financial openness	-0.013	-0.005*	-0.013	-0.014*
	(0.009)	(0.003)	(0.008)	(0.008)
Control variables	Yes	Yes	Yes	Yes
Controlling for waivers	Yes	Yes	No	Yes
Unit of analysis	Program-year	Program-year	Program	Program
Program selection	No	Yes	No	No
Observations (Equation 1)	764	763	422	416
Pseudo-R2 (Equation 1)	0.072	0.072	0.053	0.059

Table 5: Standard errors clustered on countries. Significance levels: $*$:$p < 0.1$, $**$:$p < 0.05$, $***$:$p < 0.01$.

5 Conclusion

A substantial literature addresses the question how international organizations – such as the IMF – achieve policy reforms in member countries. Given IOs' limited political leverage over a member country, previous research argues that IOs rely on a combination of hard pressure (i.e., conditionality) and soft pressure (i.e., socialization) to attain their political goals. In this paper, we leverage these approaches and argue that IOs can use loan conditionality to target a country's institutional core and create necessary checks and balances (or a veto player) on a government.

We illustrate this mechanism referring to the IMF's CBI conditionality. Insulating monetary authorities from domestic political pressures, CBI conditionality may be seen an important instrument to create a sympathetic interlocutor that does not bend to the will of a government. This function of CBI conditionality becomes particularly important when few checks and balances on a government exist. We argue that CBI conditionality is implemented to add these checks and balances. A particular innovation of our research is that we can identify a transmission mechanism – CBI conditionality – through which the Fund *shapes* sympathetic interlocutors into veto players that are favorable to its own policy preferences and thus help the IMF to attain its twin goals of stabilizing economies and sustaining long-term reforms. In light of a rich literature on IMF conditionality, our findings point to an active role of the IMF in creating checks and balances on a government, instead of passively selecting sympathetic interlocutors in a borrowing country (e.g., Chwieroth, 2013).

Relying on a dataset covering up to 124 countries between 1980 and 2012, we show that CBI conditionality is associated with countries in which governments face less institutional hurdles to (ab)use monetary authorities. Our results withstand a whole battery of robustness checks. In particular, our findings are robust to potential selection effects that arise due to non-random selection of countries into IMF programs. As expected, our empirical analyses reveal that the IMF's CBI conditionality is installed when it has more bargaining power and more to gain from shaping a sympathetic interlocutor to exert control over a client government. In line with our theoretical predictions, we find evidence that, as result of CBI conditionality, short-run compliance with quantitative targets and overall program compliance increase.

Our findings have several policy implications. First, our results show that CBI conditionality is associated with a political strengthening of national central banks, thus potentially altering domestic political dynamics. A key pillar in monetary institution building are the IMF's technical assistance programs to central banks. To date few research exists that analyzes the precise mechanisms of these programs (IMF, 2014).[28] Second, we expect the IMF to take a strong stand on behalf of their sympathetic interlocutors and to serve as a white knight in their defense. In the case of Hungary in 2011, the IMF even threatened the Orbán administration to suspend its program disbursements unless it agreed to remove its controversial bill on Magyar Nemzeti Bank (MNB). In light of increasing political pressure and populist attempts to undermine central bank independence, we expect that the IMF will become – in an attempt to defend its sympathetic interlocutors – an even more vocal advocate for CBI.

Synthesizing these insights, we believe that the IMF's monetary institution building efforts represent one of the most effective instruments in the Fund's arsenal to alter long-term political dynamics towards achieving greater macro-financial stability.

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[28]There is neither data on the number of missions, their institutional staffing, extent of their scope, nor any other information are available that would allow for a systemic review. More importantly, we are not aware of any research that analyzes the impact of these measures on actual economic reform initiatives. Filling these knowledge gaps might represent an interesting avenue for future research.

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Supplemental appendix

Table A1: Descriptive statistics and variable sources.

	Description and source(s)	Observations	Mean	Sd	Min	Max
Outcome variables						
CBI conditionality	Any IMF condition relating to the central bank of a borrower country. CBI conditionality can be mandated across six domains, including nomination of governors, reforms to the central bank mandate, the role of the central bank in economic policy, quasi-fiscal operations, central bank transparency, and banking supervision. We followed a two-step process to identify the related conditions. First, we searched the full text of the IMF conditionality database (Kentikelenis, Stubbs, and King 2016) for matches with central bank, monetary authority, and related key words. Second, we verified the validity of each identified condition and assigned it to at least one of the six domains.	6647	0.041	0.197	0.000	1.000
--Governor	Conditions on the central bank governor, for example regarding appointment procedures, term tenures, provisions for dismissal, prohibition of multiple terms, or change of governor	6647	0.003	0.057	0.000	1.000
--Mandate	Conditions on central bank mandate to ensure price stability as key objective, or extending the mandate to cover banking supervision, or re-organizing the relationship with government	6647	0.006	0.080	0.000	1.000
--Policy	Conditions on day-to-day operations of the central bank, including target rates and responsibility for policy formulation	6647	0.013	0.113	0.000	1.000
--Quasi-fiscal operations	Conditions on limitations of advances to government and securitized lending; in case such lending is not prohibited, conditions affect terms of lending to government, the nature of the beneficiary (excluding non-central government and private market), loan maturity, and interest rates (lending at market rates only)	6647	0.016	0.125	0.000	1.000
--Transparency	Conditions requiring audits of central bank reserves, review of policies, and increased disclosure of information	6647	0.006	0.079	0.000	1.000
--Banking regulation	Conditions requiring central bank to regulate banks and other financial institutions, to avoid excessive risks in the corporate finance sector	6647	0.008	0.089	0.000	1.000
CBI conditions	Natural logarithm of the number of CBI conditions across all six areas of CBI conditionality	6647	0.040	0.224	0.000	2.833
Independent variables						
Veto player index	Index of strength of domestic veto players, defined as all actors whose constitutional support (or *de facto* support) is necessary for policy change	5754	0.240	0.217	0.000	0.726

according to Henisz (2002); drawn from the Political Economy dataset (Graham and Tucker 2019)

Variable	Description	N	Mean	SD	Min	Max
Presidential system	Binary indicator of presidential system from the Database of Political Institutions (Cruz, Keefer, and Scartascini 2018), drawn from QoG dataset (Teorell et al. 2016)	7128	0.419	0.493	0.000	1.000
Past CBI	Level of central bank independence based on the Cukierman-Webb-Neyapti coding scheme (unweighted average) covering 182 countries between 1970 and 2012. The CBI scores are based on a weighted calculation of 16 indicators in four categories regarding the Central Bank's Chief Executive Officer, Policy Formulation, Objectives, and Limitations on Lending to the Government (Garriga 2016)	4839	51.723	19.479	7.663	97.375
Exchange rate stability	Exchange rate stability index (Aizenman, Chinn, and Ito 2010), drawn from the Political Economy Database (Graham and Tucker 2019)	5389	0.632	0.334	0.001	1.000
Inflation growth	Change in the percentage rate of inflation based on inflation rates (World Bank 2015)	4863	3.251	3.824	-15.716	66.403
Corruption index	Varieties of Democracy (V-Dem) index of corruption, reflecting average corruption in four areas (Coopedge et al. 2016), drawn from the QoG database (Teorell et al. 2016)	4993	0.515	0.274	0.010	0.943
Financial assets	Natural logarithm of financial assets as percentage of GDP (Pepinsky 2013), including deposit money bank assets, non-bank financial institutions assets (defined as zero if missing), and central bank assets, all three drawn from the Global Financial Development Database (World Bank 2015)	7128	2.557	1.918	0.000	6.150
GDP per capita	Natural logarithm of GDP per capita in 2005 constant USD (World Bank 2015)	5859	8.043	1.637	4.242	11.974
Trade openness	Natural logarithm of trade openness, defined as the sum of exports and imports as a percentage of GDP (World Bank 2015)	5534	4.263	0.637	-3.863	6.276
Financial openness	KOF index of financial globalization (Gygli et al. 2018)	5910	51.626	17.684	4.892	98.195
Peg	Binary indicator for whether country had a pegged exchange rate (Klein and Shambaugh 2010)	5264	0.465	0.499	0.000	1.000
Soft peg	Binary indicator for whether country had a soft-pegged exchange rate (Klein and Shambaugh 2010); baseline category being flexible exchange rate regime	5264	0.231	0.421	0.000	1.000
Selection model						
IMF program	Binary indicator for whether an IMF program was active in a given year (Kentikelenis, Stubbs, and King 2016)	6713	0.283	0.451	0.000	1.000
Past programs	Number of active IMF programs in the past five years, calculated from 'IMF program'	6507	0.280	0.395	0.000	1.000

Variable	Description	N	Mean	SD	Min	Max
UNGA vote alignment	Ideal-point distance of borrowing country with G7 countries based on voting in the United Nations General Assembly (Bailey, Strezhnev, and Voeten 2015)	5719	0.657	0.119	0.000	1.000
GDP growth	GDP growth in percent (World Bank 2015)	5910	3.530	6.708	-64.047	149.973
Reserves	Reserves in months of imports (World Bank 2015)	4481	3.931	3.956	0.002	79.237
Debt service	Debt service as percent of GNI (World Bank 2015)	3358	4.940	5.845	0.000	135.376
G5 bank exposure	Natural logarithm of net foreign claims of banks headquartered in the G5 countries—United States, United Kingdom, France, Germany, and Japan—to a given recipient country (Bank of International Settlements 2018)	7128	4.535	3.977	0.000	15.109
US interest rate change	Change in the US interest rate, based on the US interest in percent taken from the Federal Reserve Economic Data (https://fred.stlouisfed.org).	6912	0.239	0.356	0.000	1.049
UN Security Council member	Binary indicator for temporary membership of a country in the United Nations Security Council (Dreher, Sturm, and Vreeland 2014)	5609	0.057	0.232	0.000	1.000
Other variables						
Debt growth	Growth of domestic debt over M2, computed from the Global Financial Development Data (World Bank 2015). The intuition for this variable is that financial constraints increase as the government can no longer monetarize its debt (M2 would shrink) while debt increases	3033	-0.094	3.026	-109.005	40.763
Financial crisis	Indicator of financial crisis—currency crisis, sovereign default, sovereign debt, or systemic crisis (Laeven and Valencia 2012); as crises are singular events, the analysis considers ten-year windows around	5346	0.078	0.268	0.000	1.000
Freedom House index	Combined additive score of political rights and civil liberties from Freedom House, drawn from the QoG dataset (Teorell et al. 2016)	5679	7.270	4.083	2.000	14.000
Total conditions	Logged number of total (binding) conditions (including offset of one), taken from the IMF conditionality database (Kentikelenis et al. 2016)	6435	0.716	1.337	0.000	4.828
Transparency index	Transparency index based on Item Response Model of reporting quality to World Development Indicators (Hollyer, Rosendorff, and Vreeland 2011)	3875	1.178	2.300	-10.870	9.981
Exchange rate regime	Three-way classification of exchange rate regimes (Levy-Yeyati and Sturzenegger 2005); to avoid loss of observations, the baseline category is all missing observations; drawn from the Political Economy Database (Graham and Tucker 2019)	3400	2.420	0.801	1.000	3.000
Irregular turnover	Irregular central bank governor turnover (Dreher, Sturm, and de Haan 2010)	4701	0.124	0.330	0.000	1.000

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
Years in office	Years in office of a given central bank governor, taken from the Superstar Central Banker dataset (Neuenkirch and Tillman 2016)	308	3.364	3.079	0.000	17.000
Grade	Index reflecting the formal qualification of the central bank governor, taken from the Superstar Central Banker dataset (Neuenkirch and Tillman 2016)	289	2.277	0.889	1.000	4.000
Anglo-Saxon policy team	Percentage of policy team with Anglo-Saxon educational background (Chwieroth 2013)	838	16.500	24.600	0.000	100.0
Sympathetic interlocutors	Interaction term of Anglo-Saxon policy team with Anglo-American mission team (Chwieroth 2013)	836	821.1	1255.6	0.000	5294.0

Table A2: Probit model for CBI conditionality.

	(1)		(2)		(3)	
CBI conditionality						
Checks and balances	-0.937***	(0.317)	0.563***	(0.207)	-0.958**	(0.440)
Exchange rate stability	-0.416**	(0.208)	-0.386*	(0.202)	-0.301	(0.212)
Inflation growth	0.025*	(0.014)	0.024*	(0.015)	0.025	(0.016)
Corruption index	-0.089	(0.437)	0.023	(0.432)	0.022	(0.464)
Financial interests	-0.117	(0.098)	-0.115	(0.094)	-0.172*	(0.092)
GDP per capita	-0.263*	(0.157)	-0.322*	(0.169)	-0.206	(0.167)
Public debt	-0.049	(0.137)	-0.002	(0.151)	-0.034	(0.155)
Trade openness	0.139	(0.182)	0.173	(0.189)	0.139	(0.182)
Financial openness	-0.006	(0.007)	-0.007	(0.008)	0.000	(0.008)
Control variables	Yes		Yes		Yes	
Observations	1226		1226		1119	
Pseudo-R2	0.126		0.127		0.132	

Notes: Samples includes only IMF program observations. All predictors lagged by one year. Standard errors are clustered on countries.

Significance levels: * p<.1 ** p<.05 ***p<.01

Table A3: Linear probability model of CBI conditionality.

	(1)		(2)		(3)	
CBI conditionality						
Checks and balances	-0.175**	(0.077)	0.044	(0.032)	-0.528***	(0.179)
Exchange rate stability	-0.039	(0.041)	-0.041	(0.040)	-0.010	(0.045)
Inflation growth	0.005	(0.003)	0.005	(0.003)	0.004	(0.003)
Corruption index	-0.183	(0.148)	-0.179	(0.153)	-0.213	(0.165)
Financial interests	-0.025	(0.024)	-0.023	(0.023)	-0.009	(0.030)
GDP per capita	-0.141*	(0.079)	-0.129*	(0.076)	-0.076	(0.083)
Public debt	0.001	(0.039)	-0.000	(0.039)	-0.006	(0.039)
Trade openness	-0.088	(0.059)	-0.101	(0.061)	-0.045	(0.058)
Financial openness	0.001	(0.003)	0.001	(0.003)	0.003	(0.003)
Country-fixed effects	Yes		Yes		Yes	
Time periods	Yes		Yes		Yes	
Observations	1226		1226		1119	
Pseudo-R2	0.033		0.028		0.036	

Notes: Samples includes only IMF program observations. All predictors lagged by one year. Standard errors are clustered on countries.

Significance levels: * $p<.1$ ** $p<.05$ ***$p<.01$

Table A4: Alternative specification of selection model for IMF programs.

	Veto player index	Presidential system	Past CBI
CBI conditionality			
Checks and balances	-0.937***	0.562**	-0.998**
	(0.316)	(0.219)	(0.447)
Exchange rate stability	-0.434**	-0.386*	-0.309
	(0.212)	(0.207)	(0.213)
Inflation growth	0.024*	0.024*	0.025
	(0.014)	(0.015)	(0.016)
Corruption index	-0.085	0.023	0.036
	(0.440)	(0.432)	(0.458)
Financial interests	-0.114	-0.115	-0.170*
	(0.098)	(0.094)	(0.092)
GDP per capita	-0.252	-0.322*	-0.194
	(0.157)	(0.170)	(0.166)
Public debt	-0.068	-0.003	-0.046
	(0.143)	(0.157)	(0.159)
Trade openness	0.140	0.174	0.136
	(0.182)	(0.188)	(0.182)
Financial openness	-0.005	-0.007	0.000
	(0.007)	(0.008)	(0.008)
IMF program			
Past programs	1.689***	1.651***	1.677***
	(0.110)	(0.113)	(0.126)
G5 bank exposure	-0.011	-0.008	-0.015
	(0.021)	(0.019)	(0.022)
US interest rate change	-0.024	-0.027	-0.011
	(0.026)	(0.026)	(0.027)
UN Security Council member	-0.007	0.006	-0.028
	(0.133)	(0.139)	(0.142)
UNGA vote alignment	2.951***	3.407***	3.419***
	(1.000)	(1.022)	(1.022)
GDP growth	-0.033***	-0.033***	-0.030***
	(0.009)	(0.009)	(0.010)
Reserves	-0.102***	-0.092***	-0.088***
	(0.026)	(0.025)	(0.025)
Debt service	0.015	0.016	0.015
	(0.013)	(0.015)	(0.013)
Checks and balances	0.123	0.306***	0.660**
	(0.262)	(0.108)	(0.279)
Exchange rate stability	0.138	0.156	0.053
	(0.171)	(0.164)	(0.172)
Inflation growth	0.000	0.000	0.000
	(0.013)	(0.013)	(0.012)
Corruption index	0.279	0.240	0.395
	(0.250)	(0.250)	(0.324)
Financial interests	-0.065	-0.049	-0.051
	(0.058)	(0.058)	(0.063)
GDP per capita	-0.290***	-0.315***	-0.272**
	(0.108)	(0.105)	(0.107)
Public debt	0.297***	0.320***	0.249**
	(0.095)	(0.095)	(0.106)
Trade openness	-0.188	-0.168	-0.113
	(0.124)	(0.127)	(0.131)
Financial openness	-0.007	-0.008	-0.007
	(0.005)	(0.005)	(0.006)
Control variables	Yes	Yes	Yes
FX regime dummies	Yes	Yes	Yes

Region dummies	Yes	Yes	Yes
Income dummies	Yes	Yes	Yes
Time trends	Yes	Yes	Yes
Observations (Equation 1)	1226	1226	1119
Pseudo-R2 (Equation 1)	0.125	0.127	0.132
Observations (Equation 2)	1857	1857	1648
Pseudo-R2 (Equation 2)	0.345	0.349	0.347

Notes: Checks and balances is the variable shown in the column header. All predictors lagged by one period. Bivariate probit estimation with standard errors clustered on countries.

Significance levels: * p<.1   ** p<.05   *** p<.01

Table A5: Continuous measure of CBI conditions.

	Veto player index		Presidential system		Past CBI	
(Logged) CBI conditions						
Checks and balances	-0.176**	(0.074)	0.084***	(0.029)	-0.101	(0.119)
Exchange rate stability	-0.093	(0.061)	-0.086	(0.061)	-0.077	(0.064)
Inflation growth	0.010**	(0.005)	0.010**	(0.005)	0.010*	(0.005)
Corruption index	0.092	(0.087)	0.116	(0.084)	0.113	(0.102)
Financial interests	-0.038	(0.036)	-0.038	(0.035)	-0.054	(0.038)
GDP per capita	-0.028	(0.031)	-0.035	(0.033)	-0.020	(0.035)
Public debt	-0.003	(0.040)	0.008	(0.040)	0.004	(0.047)
Trade openness	0.071*	(0.037)	0.075**	(0.038)	0.074*	(0.038)
Financial openness	-0.004*	(0.002)	-0.004*	(0.002)	-0.002	(0.002)
IMF program						
Past programs	1.685***	(0.110)	1.645***	(0.113)	1.678***	(0.124)
UNGA vote alignment	3.035***	(0.999)	3.414***	(1.020)	3.545***	(1.019)
GDP growth	-0.033***	(0.009)	-0.033***	(0.009)	-0.029***	(0.010)
Reserves	-0.104***	(0.026)	-0.095***	(0.025)	-0.089***	(0.025)
Debt service	0.014	(0.012)	0.015	(0.014)	0.014	(0.012)
Checks and balances	0.115	(0.262)	0.302***	(0.109)	0.666**	(0.277)
Exchange rate stability	0.106	(0.171)	0.123	(0.165)	0.023	(0.174)
Inflation growth	0.001	(0.013)	0.001	(0.013)	0.000	(0.012)
Corruption index	0.261	(0.232)	0.226	(0.238)	0.365	(0.314)
Financial interests	-0.084	(0.057)	-0.066	(0.056)	-0.075	(0.060)
GDP per capita	-0.303***	(0.105)	-0.325***	(0.102)	-0.298***	(0.107)
Public debt	0.284***	(0.093)	0.306***	(0.093)	0.242**	(0.106)
Trade openness	-0.165	(0.116)	-0.150	(0.116)	-0.081	(0.126)
Financial openness	-0.007	(0.005)	-0.008	(0.005)	-0.008	(0.005)
Control variables	Yes		Yes		Yes	
FX regime dummies	Yes		Yes		Yes	
Region dummies	Yes		Yes		Yes	
Income dummies	Yes		Yes		Yes	
Time trends	Yes		Yes		Yes	

Observations (Equation 1)	1226	1226	1119
Pseudo-R2 (Equation 1)	0.125	0.127	0.132
Observations (Equation 2)	1857	1857	1648
Pseudo-R2 (Equation 2)	0.345	0.349	0.347

Notes: Checks and balances is the variable shown in the column header. All predictors lagged by one period. Bivariate probit estimation with standard errors clustered on countries.

Significance levels: * p<.1 ** p<.05 *** p<.01

Table A6: Alternative operationalization of CBI conditionality using four sub-dimensions.

	Veto player index		Presidential system		Past CBI	
CBI conditionality						
Checks and balances	-0.991***	(0.333)	0.659***	(0.217)	-0.812*	(0.445)
Exchange rate stability	-0.466**	(0.233)	-0.426*	(0.225)	-0.407	(0.251)
Inflation growth	0.031**	(0.014)	0.032**	(0.015)	0.029*	(0.016)
Corruption index	0.002	(0.478)	0.101	(0.491)	0.241	(0.506)
Financial interests	-0.092	(0.096)	-0.092	(0.092)	-0.163*	(0.084)
GDP per capita	-0.213	(0.167)	-0.283	(0.184)	-0.135	(0.184)
Public debt	-0.017	(0.144)	0.062	(0.157)	0.004	(0.166)
Trade openness	0.196	(0.177)	0.218	(0.183)	0.196	(0.187)
Financial openness	-0.016**	(0.008)	-0.018**	(0.008)	-0.011	(0.009)
IMF program						
Past programs	1.691***	(0.110)	1.652***	(0.113)	1.681***	(0.124)
UNGA vote alignment	3.037***	(1.020)	3.444***	(1.031)	3.550***	(1.020)
GDP growth	-0.033***	(0.009)	-0.032***	(0.009)	-0.029***	(0.010)
Reserves	-0.102***	(0.026)	-0.093***	(0.025)	-0.088***	(0.025)
Debt service	0.015	(0.012)	0.016	(0.014)	0.014	(0.012)
Checks and balances	0.119	(0.261)	0.303***	(0.109)	0.667**	(0.277)
Exchange rate stability	0.108	(0.172)	0.124	(0.166)	0.023	(0.174)
Inflation growth	0.001	(0.012)	0.000	(0.013)	0.000	(0.012)
Corruption index	0.255	(0.232)	0.221	(0.238)	0.356	(0.314)
Financial interests	-0.086	(0.057)	-0.069	(0.056)	-0.076	(0.060)
GDP per capita	-0.302***	(0.105)	-0.324***	(0.101)	-0.298***	(0.106)
Public debt	0.287***	(0.093)	0.309***	(0.094)	0.246**	(0.107)
Trade openness	-0.166	(0.115)	-0.151	(0.116)	-0.082	(0.126)
Financial openness	-0.008	(0.005)	-0.008*	(0.005)	-0.008	(0.006)
Control variables	Yes		Yes		Yes	
FX regime dummies	Yes		Yes		Yes	
Region dummies	Yes		Yes		Yes	
Income dummies	Yes		Yes		Yes	
Time trends	Yes		Yes		Yes	

Observations (Equation 1)	1226	1226	1119
Pseudo-R2 (Equation 1)	0.145	0.149	0.159
Observations (Equation 2)	1883	1883	1674
Pseudo-R2 (Equation 2)	0.352	0.356	0.356

Notes: Checks and balances is the variable shown in the column header. All predictors lagged by one period. Bivariate probit estimation with standard errors clustered on countries.

Significance levels: * p<.1   ** p<.05   *** p<.01

Table A7: Robustness to a series of small changes to the model specification

	Veto player index		Presidential system		Past CBI	
CBI conditionality						
Transparency index instead of corruption control:						
Checks and balances	-0.672*	(0.347)	0.868***	(0.297)	-0.623	(0.46)
G5 bank exposure instead of financial openness:						
Checks and balances	-0.934***	(0.316)	0.542**	(0.222)	-1.016**	(0.44)
FX regime from Levy-Yeyati and Sturzenegger:						
Checks and balances	-0.857***	(0.322)	0.592***	(0.231)	-0.965**	(0.42)
Year dummies instead of period dummies:						
Checks and balances	-0.851***	(0.324)	0.663***	(0.225)	-0.98**	(0.419)

Notes: Checks and balances is the variable shown in the column header. Coefficient estimates drawn from bivariate probit analyses similar to the baseline model but with the change indicated in the respective row. All predictors lagged by one period. Standard errors clustered on countries.

Significance levels: * p<.1   ** p<.05   *** p<.01

Table A8: Controlling for other design determinants of IMF programs.

	Veto player index		Presidential system		Past CBI	
CBI conditionality						
Checks and balances	-1.059***	(0.316)	0.667***	(0.243)	-0.956**	(0.452)
Structural conditions	0.038***	(0.009)	0.043***	(0.009)	0.044***	(0.009)
Stabilization conditions	0.016***	(0.004)	0.015***	(0.005)	0.015***	(0.004)
Exchange rate stability	-0.393*	(0.205)	-0.336*	(0.200)	-0.235	(0.198)
Inflation growth	0.017	(0.014)	0.016	(0.015)	0.015	(0.017)
Corruption index	-0.264	(0.446)	-0.154	(0.427)	-0.101	(0.470)
Financial interests	-0.139	(0.089)	-0.138	(0.085)	-0.197**	(0.089)
GDP per capita	-0.200	(0.159)	-0.281	(0.173)	-0.135	(0.167)
Public debt	-0.047	(0.142)	0.042	(0.161)	-0.039	(0.155)
Trade openness	0.089	(0.189)	0.127	(0.199)	0.085	(0.190)
Financial openness	-0.003	(0.008)	-0.005	(0.009)	0.004	(0.008)
IMF program						
Past programs	1.690***	(0.109)	1.652***	(0.112)	1.679***	(0.123)
UNGA vote alignment	2.986***	(1.024)	3.445***	(1.033)	3.496***	(1.027)
GDP growth	-0.033***	(0.009)	-0.032***	(0.009)	-0.029***	(0.010)
Reserves	-0.103***	(0.025)	-0.093***	(0.025)	-0.088***	(0.025)
Debt service	0.014	(0.012)	0.016	(0.014)	0.014	(0.013)
Checks and balances	0.122	(0.260)	0.304***	(0.109)	0.670**	(0.278)
Exchange rate stability	-0.301***	(0.105)	-0.324***	(0.101)	-0.296***	(0.106)
Inflation growth	0.288***	(0.093)	0.308***	(0.093)	0.243**	(0.106)
Corruption index	-0.164	(0.115)	-0.152	(0.115)	-0.079	(0.125)
Financial interests	-0.008	(0.005)	-0.008*	(0.005)	-0.008	(0.005)
GDP per capita	-0.302***	(0.105)	-0.324***	(0.101)	-0.298***	(0.106)
Public debt	0.287***	(0.093)	0.309***	(0.094)	0.246**	(0.107)
Trade openness	-0.166	(0.115)	-0.151	(0.116)	-0.082	(0.126)
Financial openness	-0.008	(0.005)	-0.008*	(0.005)	-0.008	(0.006)
Control variables	Yes		Yes		Yes	
FX regime dummies	Yes		Yes		Yes	

Region dummies	Yes	Yes	Yes
Income dummies	Yes	Yes	Yes
Time trends	Yes	Yes	Yes
Observations (Equation 1)	1226	1226	1119
Pseudo-R2 (Equation 1)	0.174	0.178	0.189
Observations (Equation 2)	1883	1883	1674
Pseudo-R2 (Equation 2)	0.352	0.356	0.356

Notes: Checks and balances is the variable shown in the column header. All predictors lagged by one period. Bivariate probit estimation with standard errors clustered on countries.

Significance levels: * p<.1 ** p<.05 *** p<.01

Table A9: Main results without control variables.

	Veto player index		Presidential system		Past CBI	
CBI conditionality						
Checks and balances	-0.779***	(0.272)	0.349**	(0.154)	-0.851**	(0.376)
IMF program	2.181***	(0.300)	2.109***	(0.306)	2.321***	(0.423)
IMF program						
Past programs	1.845***	(0.094)	1.794***	(0.093)	1.830***	(0.103)
UNGA vote alignment	1.819***	(0.691)	2.174***	(0.721)	2.196***	(0.697)
GDP growth	-0.027***	(0.008)	-0.027***	(0.008)	-0.031***	(0.008)
Reserves	-0.077***	(0.018)	-0.071***	(0.018)	-0.072***	(0.018)
Debt service	0.014*	(0.007)	0.015*	(0.008)	0.016*	(0.009)
Checks and balances	0.113	(0.221)	0.297***	(0.088)	0.420	(0.258)
FX regime dummies	Yes		Yes		Yes	
Region dummies	Yes		Yes		Yes	
Income dummies	Yes		Yes		Yes	
Time trends	Yes		Yes		Yes	
Observations (Equation 1)	4875		5096		4217	
Pseudo-R2 (Equation 1)	0.312		0.317		0.309	
Observations (Equation 2)	2323		2339		2049	
Pseudo-R2 (Equation 2)	0.328		0.331		0.345	

Notes: Checks and balances is the variable shown in the column header. All predictors lagged by one period. Bivariate probit estimation with standard errors clustered on countries.

Significance levels: * p<.1   ** p<.05   *** p<.01

Figure A1: Using total number of conditions as proxy for IMF bargaining power.
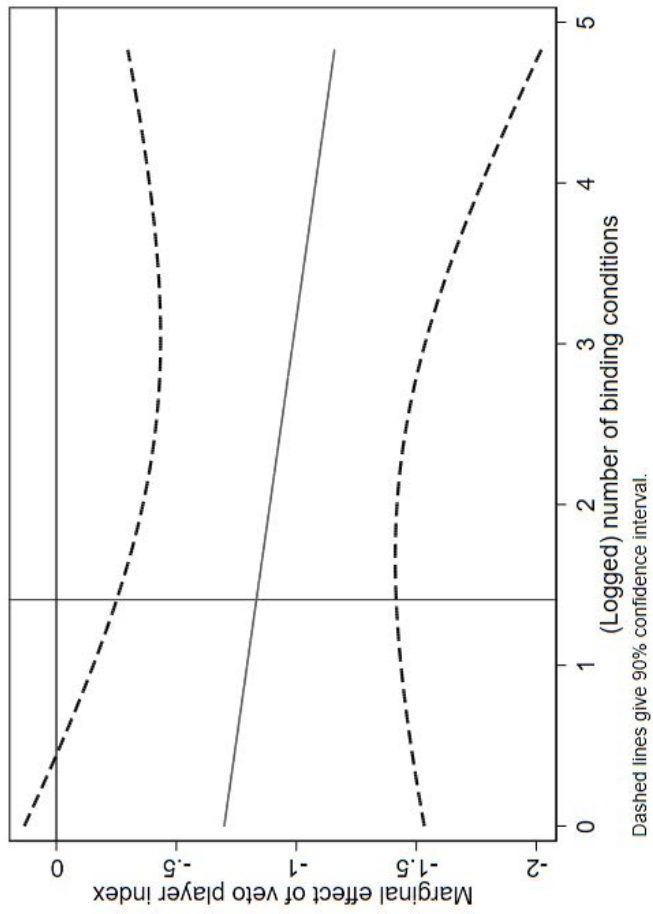
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