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The Political Economy of IMF Conditionality and Central Bank Independence

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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 enhancing the political independence of key administrative units. 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 central banks to gain more political leverage with the aim to limit a government's ability to (ab)use monetary policy for political gain. Divorcing monetary authorities from their respective government, the IMF intends to alter political dynamics towards achieving greater program compliance and enhance long-term macro-financial stability. Relying on a dataset including up to 124 countries between 1980 and 2012, we find that the IMF deploys CBI conditionality 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.

Keywords: IMF, IMF Conditionality, Central Bank Independence, Political Economics

JEL: E42; E52; E58; F33; F34; F53

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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 they achieve policy change in member countries. Scholars have distinguished between policy conditionality, the practice of providing loans in exchange for commitments to policy reform (Steinwand and Stone, 2008); 'naming and shaming', the practice of reviewing country policies against best-practice standards (Kelley and Simmons, 2015); and socialization, the practice of acculturating policymakers into specific sets of policies emanating from consistent belief systems (Chwieroth, 2013)— as tools for IOs to drive policy reform in member countries.

The goal of our paper is to introduce a novel mechanism into this debate. We argue that IOs can promote policy reform through loan conditions that target the institutional foundations of a member country. In particular, IOs can deploy institution-building measures to divorce key administrative or bureaucratic units from a government through enhancing their political independence. Applying such a strategy, an IO can shield central administrative units from political interference, constrain a government's ability to (ab)use its power for short-run political gain, and thus enhance its own political leverage.[1] Hence, we argue that such institution-building measures can work as an important instrument 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, IMF has been using a combination of quantitative targets and structural conditions when coming to the financial rescue of countries (Vreeland, 2003; Dreher and Vaubel, 2004; 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

[1] For example, Cunningham (2011, 276) argues that "*internal divisions weaken an actor [...] because factions within them often do not work together to achieve their aims.*" Following this logic, politically insulating administrative units from a government can enhance the political leverage of an IO when trying to push through political reforms.

fearing that it "*was not prepared to inflict pain on the Pakistani people.*"[2] 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 (Reinhart and Trebesch, 2016; Rickard and Caraway, 2019).

Given the limited firepower of quantitative performance measures, the IMF often targets the institutional configuration underlying economic policymaking. The aim of these prescriptions is to mute the driving forces behind the (re-)emergence of financial crises, which are deeply rooted in a country's politico-economic configuration that are reflected in a lack of institutional checks and balances on a government's economic policy meddling (Keefer and Stasavage, 2003; Keefer, 2007; Kentikelenis, Stubbs and King, 2016). In these situations, IMF-prescribed quantitative measures are not effective in addressing these underlying distortions, even though they might deliver some short-run relief. Here, we argue that in order to fill these institutional loopholes and to gain more political leverage, the IMF enhances the political independence of central banks.

This intervention is not without historic precedent. During the era of the so-called 'Dollar Diplomacy,' the U.S. government alongside the American financial industry demanded CBI from several Latin American countries in order to secure the repayment of loans (Rosenberg, 1998). Germany after the First World War is another case in point. When lending to the Weimar Republic in the early 1920s, the League of Nations required the political independence of the newly formed Reichsbank to ensure that Germany was meeting its reparation and credit obligations (Northrop, 1937).[3] Following this logic, the IMF often requires borrowing countries to enhance the political independence of central banks (Blejer et al., 2002; Polillo and Guillén, 2005; Kern, Reinsberg and Rau-Göhring,

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

[3]As Northrop (1937, 28) comments, the strengthening of CBI "*was an outgrowth of foreign distrust of Germany and of the unusual foreign interest in the stability of the currency because of the reparations question.*" To further ensure the viability of CBI and shield reparation payments, the Allies secured seven of the fourteen seats on the Reichsbank's General Council, the central oversight body over monetary policy and placed the position of the 'Note Commissioner' into the hands of Gisjbert Bruins, a dutch economics professor (Northrop, 1937; Mee, 2019). German and foreign representatives had to be independent of their national governments. Besides England, France, Italy, Belgium, United States, the Netherlands, and Switzerland were represented on the Reichsbank's General Council. With the ratification of the Bank Act in late August 1924 and the conclusion of the Dawes Plan negotiations, the Reichsbank gained full legal and operational independence, which put an end to the financing of government deficits by the Reichsbank (Northrop, 1937; Holtfrerich, 2012; Mee, 2019). Underscoring its strong independent stand in relation to the German government, the Reichsbank was effective in grounding inflation and earned itself the reputation as "Extra-Government" during the latter part of the 1920s (Mee, 2019).

2019). The Fund regularly demands 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).

Whereas in the short run, CBI conditionality aims to take off the speculative heat from the balance-of-payments, enhancing CBI can limit 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 aims to constrain a government's ability to implement unsound economic policies and to deflect from its loan obligations. Furthermore, strengthening CBI helps the IMF in nudging a government into painful austerity and reform measures, ultimately leading to greater program compliance. Taken together, by divorcing a central bank from its government, the IMF enhances its own political leverage in the borrowing country through limiting a government's ability to 'freely' manipulate the economy for political gain (i.e., moral hazard of non-compliance). Here, we are not concerned to answer the question as to whether the IMF succeeds in enhancing *de facto* CBI, but are interested in deciphering the patterns behind the IMF's observed behavior of including CBI conditionality in its loan contracts.[4]

From a government's perspective, enhancing CBI implies substantial economic and political benefits that often outweigh the costs of losing direct control over a powerful instrument. Besides sending a strong signal to international investors, delivering relief from speculative pressures, CBI

[4]A substantial literature already discusses the effectiveness of legal central bank reform in fostering greater *de facto* CBI (Berger, de Haan and Eijffinger, 2001; Hayo and Hefeker, 2002; Hielscher and Markwardt, 2012; de Haan and Eijffinger, 2019). Although Keefer and Stasavage (2003), Hayo and Voigt (2008), and Hielscher and Markwardt (2012), argue that the effectiveness of CBI conditionality might be limited in weak institutional environments, recent findings of Garriga and Rodriguez (2019) indicate that granting greater legal independence might help ground inflation, independent of these aforementioned institutional factors. Against this background, we believe that IMF's considerations assigning CBI conditionality can be summarized as "*the best workable way*" (Hayo and Hefeker, 2002, 654).

reform leads to better financing conditions and lightens a government's debt burden (Bodea and Hicks, 2015*a*; Nöh, 2019). Furthermore, empowering central banks allows incumbents to deflect blame for unpopular measures on monetary authorities (Goodman, 1991). This 'scapegoat' function of central banking becomes important when substantial political resistance exists, powerful interest groups threaten to retaliate, and policymakers have few to blame when implementing unpopular austerity measures (Ban, 2019). Furthermore, in situations of fiscal (or financial) dominance, central banks are tied up with monetizing public debt to lift an economy off the financial cliff. In these situations, granting greater legal independence has hardly any consequences for an incumbent as even central bank has to follow a government's lead (Lohmann, 1992; de Haan and Eijffinger, 2019; Borio, 2019). Moreover, according to recent insights of the CBI literature, governments have become increasingly creative in circumventing CBI through excess financial deregulation and financial market deregulation, muting a government's cost of granting greater CBI (Acemoglu et al., 2008; Aklin and Kern, 2019). 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 their government, a politically less insulated central bank, and governments with 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 panel 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 probit-type regression analyses with CBI conditionality as our central dependent variable. Our findings support our theoretical claims. We find overwhelming evidence that the IMF deploys CBI conditionality in countries with fewer checks and balances, using three different measures. Our results withstand a battery of robustness checks. Importantly, we show that our results hold even when accounting for selection effects into IMF programs and other time-varying omitted variables. In line with our theoretical predictions, we also find supporting evidence that CBI conditionality is effective in achieving greater 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 (Thacker, 1999; Andersen, Harr and Tarp, 2006; Dreher, Sturm and Vreeland, 2009*b*, 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 fewer 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 political 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 to focus on *polity* conditions, which serve the Fund to achieve greater compliance with its favored *policy* conditions. By altering the institutional setup of borrowers, the Fund *creates* a political player that is favorable to its own policy preferences, instead of passively selecting a 'sympathetic interlocutor' (Woods, 2006; Chwieroth, 2013).

Second, we complement the political economy literature on CBI (Bodea and Hicks, 2015*b*; de Haan and Eijffinger, 2019; de Haan et al., 2018). Importantly, our work underscores the importance of CBI in constraining governments' leverage over economic policymaking (Taylor, 2009; Bodea and Higashijima, 2017; Garriga and Rodriguez, 2019). In this respect, our contribution reveals an important role of central banks in nudging governments into fiscal restraint and compliance with IMF programs. Furthermore, our empirical contribution to this literature is to offer new fine-grained data on CBI conditionality, across six sub-dimensions, which provides scholars with a more fine-grained view on IMF involvement in central bank reform while facilitating future work on the role of the IMF for monetary institution-building (Polillo and Guillén, 2005; Dincer and Eichengreen, 2014; Romelli, 2018). Such work is timely given increasing political pressures on central banks to bend to populist demands (Funke, Schularick and Trebesch, 2016; Binder, 2018; Goodhart and Lastra, 2018; Meyer and Kyle, 2019).

2 Argument

Since the IMF's lending operations started in the 1970s, the Fund has to a varying degree attached conditions when providing loans to countries in need. 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 (Dreher, 2009; Reinhart and Trebesch, 2016). Since the 1990s, the IMF has targeted the institutional configuration of monetary policymaking.[5] 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. All these demands—that we label as CBI conditionality—have one feature in common: they are all geared towards enhancing the political independence of central banks.[6] To date little is known as to why the IMF would include CBI conditionality in its loan contracts and which countries are subject to these conditions.

In any loan program, the IMF faces several contractual and informational challenges. We argue that the IMF solves a complex trade-off relationship between the benefits and costs of assigning CBI conditionality. In doing so, the Fund aims to limit the scope of political agency that undermines adjustment programs and jeopardize a country's macrofinancial stability (Bird, 2007; Breen, 2013; Dreher, Sturm and Vreeland, 2015). To guide our theoretical insights, we develop a theoretical model showing that the IMF does not always impose CBI conditionality (see, Section A1 in the Supplementary Appendix).[7]

First, 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.[8]

[5]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. These 'safeguard assessments' 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). An in-depth review of the institutional and legal independence of monetary authorities constitutes an integral part of this process. Based on these assessments, the Fund often formulates additional loan conditions, requiring countries to enhance CBI.

[6]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 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 auspices of the Fund.

[7]This theoretical mechanism is adopted from Hefeker (2019).

[8]In terms of monetary policymaking, it is a widely held notion that policymakers are tempted to (ab)use monetary

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 points 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 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).[9]

Second, the Fund faces the problem of limited contract enforceability.[10] The Fund does not have any direct means to enforce conditionality in any given country (besides suspending program disbursements) (Vreeland, 2006; Khan and Sharma, 2003; Mussa and Savastano, 1999; Reinsberg et al., 2019). In particular, when governments do not have sufficient political leverage or simply lack the political will to implement painful austerity measures, the Fund does not have the necessary instruments to enforce its policy prescriptions.[11] In these situations, driving a political wedge

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).

[9]Furthermore, increases in CBI signal domestic and international investors that a government is committed to restore monetary stability. Here, we would like to note that rebuilding a beaten financial system and thus restoring the credibility of an initially 'corrupted' central bank takes time to materialize. In the words of Blinder (1998, 65) restoring and building credibility "*is painstakingly built up by a history of matching deeds to words*." 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 and replace the leadership of a central bank with former IMF staff (Simmons, 2000; Vreeland, 2006; Kern, Reinsberg and Rau-Göhring, 2019). The recent cases of Argentina, Pakistan, and Kenya, in which former IMF staff have assumed the governorship of the central bank are indicative of this type of borrowed credibility. Thus, we believe that enhancing CBI under the umbrella of an IMF program and replacing the leadership team can substantially speed up the process of restoring the credibility of a central bank.

[10]For a review of this literature on contractual frictions in financial markets, see Aghion and Bolton (1992).

[11]As Randall Stone (2004, 577) notes, "*[b]y prodividing long-term financing to countries that fail to reform themselves, it creates incentives to pursue unwise economic policies—unless the loans are firmly linked to enforceable*

between a government and its central bank can be an effective instrument to mitigate these contractual frictions.[12] Following this logic, we argue that the IMF can use CBI conditionality to split up the borrowing government with respect to economic policymaking and create additional checks and balances. From a theoretical point of view, empowering monetary authorities, the IMF can make it harder for the government to implement unsustainable policies. A more 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; Nöh, 2019). Following this logic, it also becomes harder for vested interests to capture this new political entity and implement their desired policy outcome (Johnson, 2016). Beyond this, a more independent central bank can help to nudge a government into painful austerity and reform measures and thus help the IMF to attain its goals. 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). Within the framework of an IMF program in 2009, the BNR was closely following IMF prescriptions and refused to monetize government debt, and thus effectively "*subjected the government to the constraining public-private conditionality arrangement* (Ban, 2019, 1050). 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 banks from special funding windows, and nudging the government into fiscal restraint in times of economic slack (Ban, 2016, 2019).

Third, being an 'outsider' to the borrowing country, the IMF has limited information on the 'financial' actions of a government. A salient feature in IMF lending is that funds are often transferred to and disbursed through national central banks. This is important to the extent that a central bank can hide—through data manipulation and misreporting—the actual use of funds and/or reroute funds for political purposes (IMF, 2005). Thus, the inability to directly access information concerning government finances can create moral hazard. For example, when rescuing Tajikistan

conditions." Yet policy conditions are rarely enforced, often because powerful donor countries pressure the Fund to disburse nonetheless (Dijkstra, 2002; Stone, 2004; Hennessy, 2017).

[12]For a theoretical demonstration, see, for instance, Besley and Coate (1995).

from the brink of default in 2005, the IMF audit overlooked an important credit guarantee scheme of the central bank towards lenders of the cotton industry.[13] This financial scheme guaranteed the claims of a consortium of politically well connected banks and lenders towards the cotton industry. As collateral for this guarantee, the central bank pledged almost the entirety of its foreign reserves. Not having included conditions towards strengthening CBI and central bank transparency in its initial lending program, the IMF stood by as "*Tajik authorities doctored data on national reserves*" to allow high-ranking government officials to siphon almost $300 million out of the country.[14] This will be most pronounced in countries where few checks and balances exist on a government to monitor its financial dealings (Reinsberg et al., 2019). Thus, the IMF often prescribes CBI conditionality and demands the disclosure of conflicts of interests in central bank statutes to prevent leakage of disbursed funds and limit this type of misreporting. In its letter of intent in 2009, the Tajik government had to pledge to "*strengthen the internal control and governance framework, in particular by separating the executive and control functions of NBT, and strengthening provisions against conflicts of interest*"[15]. Thus, as central banks are collecting most of the financial information on government finances and domestic financial markets, enhancing central bank transparency is seen as an effective to limit a government's ability to shirk and reroute funds.

Following this logic, by including CBI conditionality, the IMF aims to empower monetary authorities to weaken a borrowing government's ability to deflect from its loan obligations and implement unsound economic policies jeopardizing macrofinancial stability. In doing so, CBI conditionality has the potential to strengthen the checks and balances on a government (Kahler, 1992; Woods, 2006; Chwieroth, 2013) through "*bolstering the position of reformers in the bureaucratic structure*" (James, 1996, 133). Considering that "*countries with fewer numbers of veto players, on average, will be able to accept a greater degree of policy change, so the IMF may prefer to enter into agreements with them*" (Vreeland, 2002, 7), we believe the IMF has a strong motive to include CBI conditionality when few checks and balances on a government exist.

[13] "IMF says Tajikistan Broke Borrowing Rules." Financial Times. March 6th, 2008

[14] "Banker accused of huge fraud in Tajikistan." The Guardian. April 13th, 2009. Numerous cases display a similar pattern, where governments through their central banks have re-rerouted funds for personal or political gain (IMF, 2005).

[15] (IMF, 2009, 13)

At the same time, assigning CBI conditionality is no free lunch for the IMF. Besides incurring administrative costs in committing resources and contracting national central banks to support monetary institution building efforts (for an exposition of these mechanisms, see, for instance (Johnson, 2016)), CBI conditionality might derail negotiations with a borrowing country and thus induce reputational costs for the IMF (Vreeland, 2006).[16] Numerous recent country cases illustrate how CBI conditionality has led to a stalling of IMF negotiations. For instance, in the case of Ukraine, the government and IMF have recently split over the independence of the National Bank of Ukraine.[17] Indeed, a salient feature of IMF loan agreements is that governments have to green-light the Fund's conditionality clauses (e.g., Nooruddin and Simmons, 2006). Here, it is unclear as to why a government would give in to transferring this powerful lever of economic policymaking to monetary policymakers (especially when it faces few or no institutional checks and balances).

The probability of leaving the bargaining table when presented with CBI conditionality will depend on a government's internal cost-benefit analysis. We argue that a lack of existing checks and balances might tip a government in favor of accepting CBI conditionality, as it can reap the benefits of enhancing CBI (and accessing funds from the IMF), but also minimize the costs of central bank reform when fewer checks and balances exist (Vreeland, 2003, 2006). Although, as in the recent case of Ukraine, a government might refuse to make commitments to CBI conditionality—in fear of losing a powerful economic policy instrument and its support base from powerful special interests—there are several reasons that can justify a government to loosen the political grip on its monetary authorities.

First, an appealing feature of CBI is that it sends a strong signal to international investors about its commitment to economic reforms and thus takes the heat off the balance of payments (Maxfield, 1997; Bodea and Hicks, 2015*a*; Nöh, 2019). Although in the short-term, these interventions might lead to increases in nominal interest rates, CBI has the potential to reduce inflation and thus

[16] Besides reputational costs, a failed intervention of the IMF might trigger a political crises destabilizing a country or trigger financial crises in countries that are closely connected economies to a potential borrowing which declined the IMF's rescue package (Reinhart and Rogoff, 2009). In such a setting, a political and financial crises might spread across countries, further draining the reputation and resources of the IMF. We illustrate the theoretical implications of these costs in Section A1 in the Appendix.

[17] "Teetering Independence of Ukraine's Central Bank Tests a Key I.M.F. Demand." The New York Times, July 2, 2020.

(inflation) risk premia on sovereign yields (Blancheton, 2016; Bodea and Hicks, 2015*a*, 2018; Nöh, 2019).[18] Synthesizing insights of this literature, we believe that governments have an incentive to embark on CBI reforms to improve their refinancing conditions (even though this might come at the expense of higher interest rates in the short-run). In particular, for governments that heavily rely on international capital markets, these benefits are even more pronounced.

Second, loosening the political grip on monetary authorities, a government can deflect blame to a more independent 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; Vreeland, 2006; 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.[19]

Third, central banks often operate under the public radar (for a recent survey, see de Haan and Sturm (2019)). To put in the words of Alan Blinder (2016) "*most members of the public probably thought that [the Federal Reserve] was a forest somewhere.*" We believe this lack of knowledge on central banking (van der Cruijsen, Jansen and de Haan, 2015; de Haan and Sturm, 2019; Hayo and Neumeier, 2020), makes CBI conditionality a far less visible and subsequently a politically less costly policy intervention in comparison to radical austerity measures. Although we cannot directly test for the viability of this channel, recent findings of Hayo and Neumeier (2020, 3) for the case of New Zealand indicate that "*only 6% of the population gave a correct answer to a question about the current inflation target in 2016 [...and] only 3% of the population were aware of the March 2018*

[18] For instance, Bodea and Hicks (2015*a*) studying a large sample of countries find that sovereign bond yields decline in response to increases in CBI after 1998, independent of whether a country is authoritarian or democratic. Similarly, in a follow-up paper, Bodea and Hicks (2018) show a positive effect of CBI on sovereign credit ratings that translate into lower risk premia and sovereign bond yields, whereas Nöh (2019) finds that CBI leads to a lengthening of debt maturities as (inflation) risk premia tend to fall in response to CBI. Given the established fact that CBI is conducive for attracting larger amounts of FDI, this might potentially translate into increases in tax revenues.

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

change in the PTA [Policy Target Agreement] that instituted maximum employment as a second monetary policy objective for the RBNZ." Given lower levels of financial literacy and greater lack of transparency (see, for instance, de Haan and Sturm (2019)), this public unawareness is likely even more pronounced in IMF client countries. Whereas citizens feel the immediate consequences of tax hikes and spending cuts (Walton and Ragin, 1990), changes to a central bank's political dependence face less scrutiny and thus less public resistance rendering CBI conditionality a low hanging fruit for a government that tries to tap into IMF funding.

Fourth, in situations of fiscal dominance "*the monetary authority is forced to create money and tolerate additional inflation*" (Sargent and Wallace, 1981, 2). This is to say: under fiscal dominance even the most independent central banker has to bend to the brute force of a government's reckless fiscal behavior unless it wants to steer the economy off a financial cliff which cannot be in its best interest, even if it is legally independent and opposing the government's policies (for a survey of these arguments, see, Lohmann (1992); Demertzis, Hallett and Viegi (2004); Blanchard (2004); de Haan and Eijffinger (2019)). In these situations, granting greater legal independence has hardly any consequences for an incumbent as the central bank is tied up with monetizing public debt in its attempt to keep the economy afloat.[20]

Finally, governments have become incredibly creative in circumventing their otherwise independent central banks. For instance, Aklin and Kern (2019) demonstrate how governments have systematically traded off greater CBI by engaging in financial market manipulation and excess financial deregulation, muting the effectiveness of CBI in constraining domestic credit creation. Against this background, fewer checks and balances on a government's financial meddling further mute the costs of CBI and make a government more agreeable to CBI conditionality.

Whereas the Fund's benefits from assigning CBI conditionality should be most pronounced when few checks and balances exist, governments have greater leeway to mitigate the constraining effect of CBI and are thus more inclined to give in to the demands of the IMF. Synthesizing these insights,

[20]Besides fiscal dominance, a central bank can fall victim to a failing financial system that threatens to evaporate a nation's payments system and put monetary stability into jeopardy (i.e., a situation of what one might label 'financial dominance') (for a recent survey, see, Borio (2019)). These instances are similar to a situation as described in Lohmann (1992), where the ability of a government to remove a 'conservative' central banker coerces monetary policymakers to follow a government's lead even if it is independent. For a recent example and illustration of this mechanism, see, for instance Hayo and Neumeier (2020).

we formulate our core hypothesis:

> *The IMF assigns CBI conditionality to countries which have fewer 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 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; Dreher, Sturm and Vreeland, 2009*a*). 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.*"[21] Thus, when a government needs to mobilize funds urgently, the Fund has more political leverage and thus is more likely to assign CBI conditionality.[22]

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*

[21] "Tajikistan Pleads for Help to Resolve Self-Inflicted Cotton Finance Crisis." Wikileaks. Cable ID 08*DUSHANBE*86_*a*.

[22] In additional tests, we verify that checks and balances do not determine the number of conditions on a country. Indeed, we find that measures of checks and balances generally do not predict the number of conditions in most issue areas (Table A11). We take these findings also as placebo tests to demonstrate the robustness of our core findings.

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. There are several reasons that motivate this bias. 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, 2015*b*, 41). Thus, in a democratic setting, the IMF's newly created political player has more firepower in implementing austere monetary policies and pushing a government into painful reforms. Furthermore, democracies provide greater enforcement of the rule of law, which is important in the context of CBI (Moser, 1999; Keefer and Stasavage, 2003; Bodea and Hicks, 2015*b*).[23] 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.

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.

[23] In this respect, recent findings indicate that the creation of additional veto players strengthens the rule of law in country settings where few veto players exist; such as in emerging democracies (Andrews and Montinola, 2004).

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.[24] 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,

[24] Van Atta (2009)

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 (IMF, 2015, 34).

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.[25] 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 on 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).

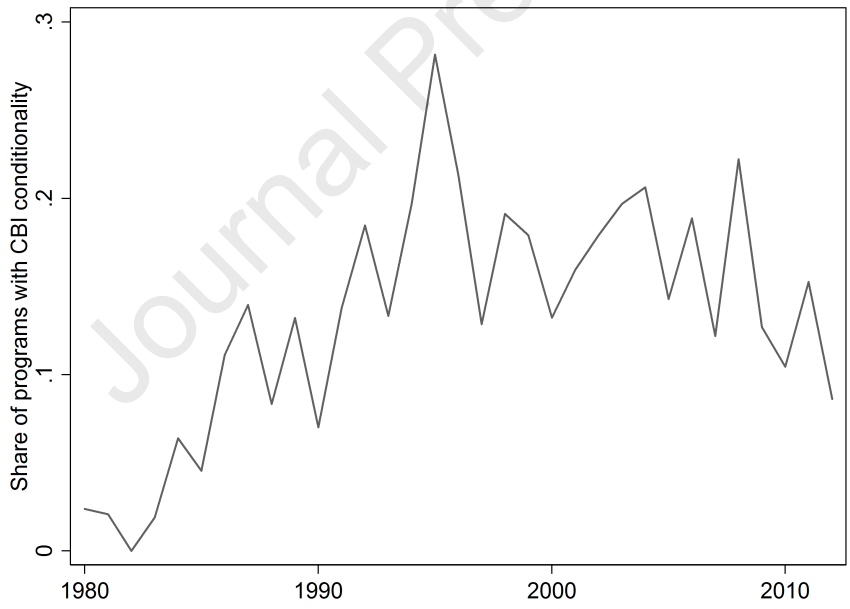
Finally, our data also capture loan conditions that assign a central bank the task of overseeing and regulating banks and other financial institutions. This transfer of regulatory powers over a country's financial system is often necessary for comprehensive financial crisis resolution and

[25]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).

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).[26] 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 and 0 otherwise. Our descriptive statistics show that CBI conditionality is present in more than one out of four IMF programs in the mid-1990s (Figure 1).

Figure 1 CBI conditionality in IMF programs.



[26]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).

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 are weak (and its ability to exploit monetary policy for its own interests are high). 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 checks and balances on a government is the political constraints 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 to strengthen central bank independence precisely in situations where no veto players exist or these are weak.[27]

To provide a second measure for existing checks and balances, we use the horizontal accountability of the government measure, which we draw from the latest edition of the Varieties of Democracy (V-Dem) dataset. Horizontal accountability is defined as "*the power of state institutions to oversee the government by demanding information, questioning officials, and punishing improper behavior*" (Lührmann, Marquardt and Mechkova, 2017, 13). The key agents in horizontal government accountability are the legislature, the judiciary, and specific oversight agencies such as ombudsmen, prosecutors, and comptroller generals. The horizontal accountability index is obtained through hierarchical latent variable analysis, with separate models capturing judiciary accountability (measuring the absence of executive influence on the judiciary branch), legislative accountability (measuring the degree to which the legislature routinely questions the executive and the likelihood of investigating misconduct by the executive), and accountability to other state bodies (measuring how likely they

[27] An advantage of the Henisz measure is that it captures both the strength and the orientation of veto players. Assuming the government is against strengthening CBI, a high value on the veto player index exactly captures cases of opposition against weakening CBI.

are to investigate unlawful executive behaviors) (Lührmann, Marquardt and Mechkova, 2017).

Our third measure—the lagged CBI index (Garriga, 2016)—more specifically captures the strength of the central bank. 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 credibility (Blinder, 2000; Dincer and Eichengreen, 2014; Balls, Howat and Stansbury, 2016). This is particularly acute when inflation is accelerating. Therefore, 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.[28]

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 officials close to their own preferences—to mitigate corruption. We therefore include the 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.

[28] Here we follow more recent studies showing that not inflation levels but measures of the variability of inflation and inflation crises are determinants of CBI (Dreher, Sturm and de Haan, 2010; Romelli, 2018).

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 political constraints index (Dincer and Eichengreen, 2014; Bodea and Hicks, 2015*a*; Garriga, 2016). Hence, we include the natural logarithm of GDP per capita. We 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, 2015*b*). 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 dummies for income groups and world regions.[29] We also include time polynomials up to second order to capture common trends.[30]

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).

[29]We follow World Bank definitions for income (I) groups, distinguishing high-income economies ($I \geq$ USD 12,746), upper-middle income countries (USD 4,126 $< I <$ USD 12,746), lower-middle income countries (USD 1,045 $< I \leq$ USD 4,126), and low-income countries ($I \leq$ USD 1,045). The six developing world regions are East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, South Asia, and Sub-Saharan Africa.

[30]Our results also hold for the case when we include year dummies, as discussed in the robustness tests.

3.4 Methods

A potential challenge to our inference is selection into IMF programs. 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 voting alignment of 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 use 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 (including dummies for exchange rate regime, income groups, and world regions).[31]

In our main analyses, we estimate a Heckman selection 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. The first stage is a probit-type equation predicting participation in IMF programs, while the second stage is a linear probability model of CBI conditionality given the country is under an IMF program. We allow for standard errors to be clustered on countries to account for the time-series dependency of 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 Heckman model. Thus, 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.

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

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

$$CBI_{i,t} = \begin{cases} 1 & \text{if } CBI^*_{i,t}|(IMF_{i,t} = 1) > 0 \\ 0 & \text{if } CBI^*_{i,t}|(IMF_{i,t} = 1) \leq 0 \\ . & \text{if } IMF_{i,t} = 0 \end{cases} \tag{1}$$

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

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

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

$$\begin{pmatrix} \varepsilon_{1i,t} \\ \varepsilon_{2i,t} \end{pmatrix} \sim \mathcal{N}\left[0, \begin{pmatrix} 1 & \rho_{12} \\ \rho_{21} & 1 \end{pmatrix}\right] \tag{5}$$

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.[32]

4 Results

4.1 The determinants of CBI conditionality

Table 1 presents our main results. Overall, our argument receives strong support. All related measures behave according to our theoretical expectations. As the outcome equation is linear, marginal effects can be read off easily. We also simulate predicted probabilities fixing all variables at their respective means and assuming the presence of an IMF program.

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

Specifically, a one-standard deviation decrease in the veto player index increases the predicted probability from 14.7% to 17.8% ($p<0.05$). A decrease in horizontal accountability by one standard deviation from its mean increases the predicted probability from 14.5% to 20.3% ($p<0.01$). Finally, a one-standard deviation drop in prior CBI from its mean increases the probability of a CBI condition from 14.2% to 17.8% ($p<0.05$).

Our model also helps evaluate the pertinence of alternative explanations for CBI conditionality. Inflation growth is positively significant ($p<0.05$), suggesting that CBI conditionality has a role to play in restoring monetary policy credibility. Other mechanisms receive less support in the data: Neither the extent of corruption nor the strength of financial sector interests has a relationship with CBI conditions. Given that the Fund's structural benchmarks often include "*not only specific anti-corruption measures but also broader regulatory and institutional reforms*"(IMF, 2018*c*, 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 a 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.*"[33]

Our lack of 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 societal groups or an inflation averse population (Hayo and Hefeker, 2002; Scheve, 2004; de Haan, Masciandaro and Quintyn,

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

2008; 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).

In two models, we find a negative relationship between a pegged exchange rate and CBI conditionality, relative to the baseline of flexible exchange rates. This suggests that CBI is a substitute for fixed exchange rates (Bernhard, Broz and Clark, 2002; Copelovitch and Singer, 2008; Bodea, 2010).

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 past CBI, our measures of checks and balances are not related to being under an IMF program. Furthermore, 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.

Determinants of CBI conditionality

	Veto player index		Horizontal accountability		Past CBI	
CBI conditionality						
Checks and balances	-0.146**	(0.316)	-0.057***	(0.221)	-0.178**	(0.448)
Inflation growth	0.008**	(0.003)	0.008**	(0.003)	0.008**	(0.004)
Corruption index	0.016	(0.079)	-0.077	(0.084)	0.030	(0.083)
Financial interests	-0.027	(0.025)	-0.022	(0.024)	-0.038	(0.026)
GDP per capita	-0.048*	(0.029)	-0.048*	(0.028)	-0.035	(0.031)
Public debt	-0.007	(0.031)	-0.009	(0.030)	-0.002	(0.034)
Trade openness	0.043	(0.035)	0.037	(0.036)	0.040	(0.035)
Financial openness	-0.002	(0.002)	-0.002	(0.001)	-0.000	(0.002)
Peg	-0.063**	(0.032)	-0.067**	(0.031)	-0.029	(0.033)
Soft peg	0.029	(0.025)	0.030	(0.026)	0.044*	(0.024)
IMF program						
Past programs	1.657***	(0.109)	1.658***	(0.109)	1.658***	(0.124)
UNGA vote alignment	2.940***	(0.968)	2.946***	(1.043)	3.364***	(0.980)
GDP growth	-0.032***	(0.009)	-0.033***	(0.009)	-0.029***	(0.010)
Reserves	-0.105***	(0.025)	-0.105***	(0.026)	-0.090***	(0.025)
Debt service	0.015	(0.013)	0.015	(0.013)	0.014	(0.013)
Checks and balances	0.117	(0.250)	0.019	(0.074)	0.681**	(0.274)
Inflation growth	-0.002	(0.012)	-0.002	(0.012)	-0.000	(0.012)
Corruption index	0.267	(0.233)	0.291	(0.255)	0.362	(0.314)
Financial interests	-0.063	(0.057)	-0.063	(0.058)	-0.050	(0.061)
GDP per capita	-0.305***	(0.107)	-0.303***	(0.107)	-0.297***	(0.108)
Public debt	0.277***	(0.091)	0.275***	(0.091)	0.240**	(0.104)
Trade openness	-0.169	(0.116)	-0.167	(0.116)	-0.082	(0.125)
Financial openness	-0.007	(0.005)	-0.007	(0.005)	-0.008	(0.005)
Peg	-0.168	(0.125)	-0.167	(0.128)	-0.267**	(0.129)
Soft peg	-0.096	(0.098)	-0.096	(0.098)	-0.087	(0.112)
Regional dummies	Yes		Yes		Yes	
Income group dummies	Yes		Yes		Yes	
Time trends	Yes		Yes		Yes	
Observations (Equation 1)	1255		1259		1146	
Pseudo-R2 (Equation 1)	0.119		0.127		0.132	
Observations (Equation 2)	1924		1924		1699	
Pseudo-R2 (Equation 2)	0.346		0.346		0.351	

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: $*$:$p < 0.1$, $**$:$p < 0.05$, $***$:$p < 0.01$.

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. While thus far we have exploited all variation in checks and balances, a more conservative approach would be to limit ourselves to within-country variation. Our results remain remarkable stable when estimating linear probability models with country-fixed effects (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. While we prefer the binary measure—given that the event is rare and that the 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, pass the test (Table A5).

Furthermore, we operationalize CBI conditionality only using four dimensions, thus mirroring the coding protocol of most CBI indices (Cukierman, Webb and Neyapti, 1992; Bodea and Hicks, 2015*b*; Garriga, 2016). Except for rendering the past CBI coefficient statistically insignificant, this does not alter our results, suggesting that these four dimensions capture the most important variation (Table A6).[34] 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.

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

Specifically, we use exchange rate regime classifications with three categories (Levy-Yeyati and Sturzenegger, 2005), six categories (Ilzetzki, Reinhart and Rogoff, 2019), and a quasi-continuous operationalization over 15 categories (Ilzetzki, Reinhart and Rogoff, 2019). We also report that controlling for year-fixed effects leaves our results qualitatively unaffected.

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 or become even stronger (Table A8).

We also address potential concerns about post-treatment bias by running our analysis on a stripped-down model that just includes control variables capturing three alternative explanations and 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 core results hold or become even stronger (Table A9).

Finally, we verify that our results are not driven by omitted confounders. For example, a recipient government might have unobserved features causing a decline in its political institutions *and* its economic performance which requires more frequent IMF interventions with CBI conditions.[35] To allay this concern, we predict checks and balances using a compound instrument. Specifically, we interact the (logged) settler mortality with the regional pattern of regime change, arguing that upon observing pressures for political liberalization in neighboring countries, governments with bad institutions (tantamount to high settler mortality) have even stronger incentives to crack down opposition. Acemoglu, Johnson and Robinson (2001) use settler mortality as proxy for historical institutions predicting contemporaneous institutions. To go beyond cross-sectional variation, we interact this variable with the average change of the polity index in the same region (Marshall, Jaggers and Gurr, 2015). Adopting an instrumental-variable design yields substantively larger and statistically significant coefficients for the veto player index and horizontal accountability. As we do

[35] A straightforward strategy to control for such confounder is to condition the analysis on its outcome—being under an IMF program—which we have already done here. For this strategy to work, however, we need to assume that there are no other paths to CBI conditionality.

not find a strong instrument for past CBI, its coefficient unsurprisingly remains insignificant (Table A10).

Sub-dimensions of CBI conditionality

We now exploit our fine-grained coding protocol which distinguishes different dimensions of CBI conditionality. According to our theoretical predictions, weak checks and balances on a government should lead to CBI conditionality specifically in the area 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 these new political constraints.

Table 2 shows the results from Heckman models. Consistent with our expectations, we find a significantly negative association between the political constraints index and CBI conditionality on central bank mandates ($p<0.01$), and a less significant one with central bank policy ($p<0.05$). There is no significant relationship with quasi-fiscal operations but the direction of the effect is as expected. As several dimensions of the CBI index are affected by the pre-existing strength of checks and balances on a government, the IMF seems to promote independent central banks for broad purposes—indeed its long-term goal is to establish a powerful agent that controls 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					
	Governor	Mandate	Policy	Quasi-fiscal operations	Transparency	Banking regulation
Checks and balances	-0.008	-0.015***	-0.076**	-0.058	-0.022	-0.012
	(0.020)	(0.000)	(0.038)	(0.041)	(0.025)	(0.022)
Inflation growth	0.000	0.001***	0.005**	0.004*	0.003	0.002
	(0.001)	(0.000)	(0.003)	(0.003)	(0.002)	(0.002)
Corruption index	-0.003	0.036***	0.019	0.026	0.008	0.012
	(0.030)	(0.000)	(0.043)	(0.043)	(0.026)	(0.025)
Financial interests	-0.006	-0.006	-0.017	-0.018	-0.002	-0.010*
	(0.005)	(0.027)	(0.010)	(0.018)	(0.006)	(0.006)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Selection model	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1255	1255	1255	1255	1255	1255
Pseudo-R2	0.166	0.196	0.146	0.179	0.207	0.208

Table 2:Checks and balances is the veto player index. 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: $*$:$p < 0.1$, $**$:$p < 0.05$, $***$:$p < 0.01$.

Effect heterogeneity

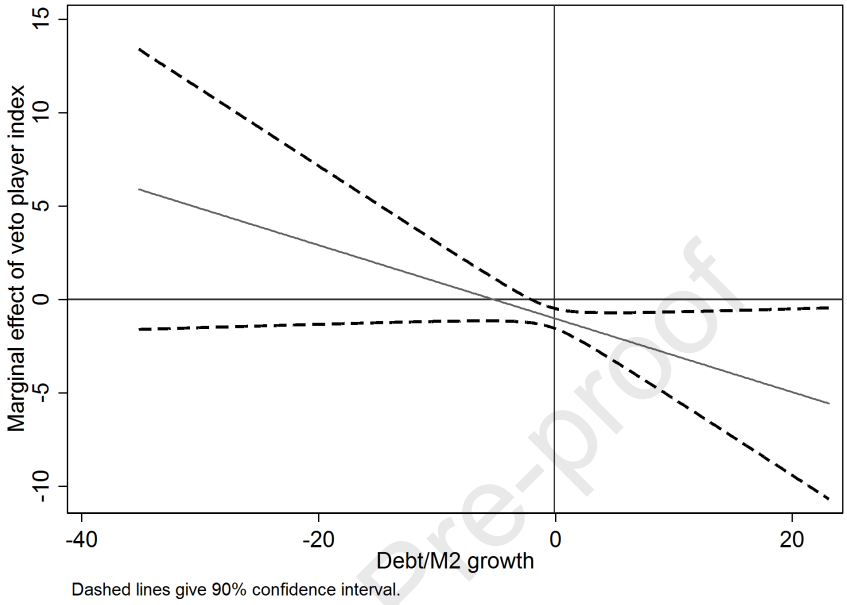
In line with our theoretical argument, we now establish the conditions under which our posited mechanism is particularly salient. We therefore allow the effect of political constraints index upon CBI conditionality to vary across different contexts. For binary moderator variables, we perform split-sample analysis. For continuous moderators, we add them to the model, along with multiplicative interaction terms with the political constraints index to study their conditional marginal effect.[36] Rather than presenting full tables, we follow common practice and plot the conditional marginal 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; Hauner, 2009; Menaldo, 2015; Brooks, Cunha and Mosley, 2015). For instance, Woo (2006) finds that financial market development is critical factor determining the level of outstanding debt, whereas Hauner (2009) and Menaldo (2015) show 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 make CBI conditionality more likely while reinforcing the need for strengthening CBI 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 strengthen the hand of the IMF, leading 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

[36] 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.

broad money—low levels of veto players increase the likelihood of CBI conditions. The reverse is true for negative debt shocks.[37]

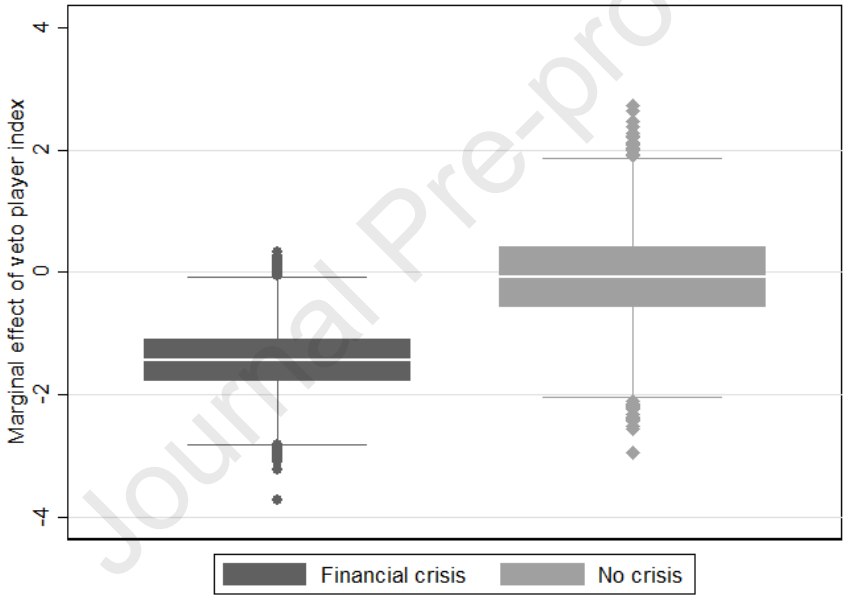
Figure 2 Marginal effect of veto player index at different levels of domestic debt growth.



[37]Using the total number of binding conditions as alternative measure of IMF bargaining power yields a similar picture (Figure A1).

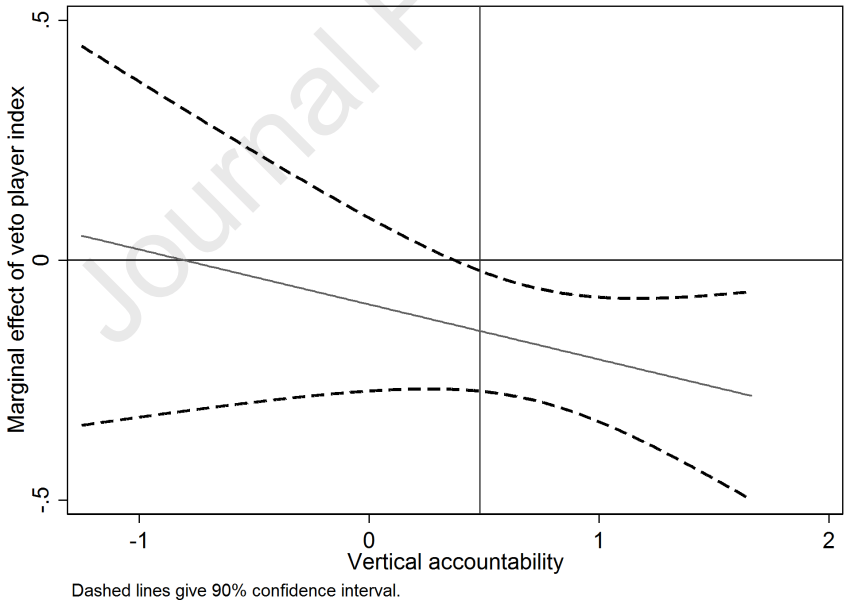
Financial crises: We posit that during financial crises, governments are more vulnerable to external pressures, such as from international creditors, which will increase the likelihood that they agree to CBI conditions. Our hypothesis analogizes from Masciandaro and Romelli (2018) who find that financial crises catalyze changes in central bank mandates to include financial regulation. As financial crisis are singular events, we consider crisis episodes and restrict the estimation sample to all observations within a ten-year frame around the crisis year. 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.



Vertical accountability: While horizontal accountability can exist even in autocracies, vertical accountability is meaningful only under democratic institutions. Their key feature is to give societal actors the constitutional right and actual possibilities to challenge executives. In turn, freedom of speech, enhanced transparency, and the possibility to form an effective opposition against the government for societal actors afford the central bank greater leeway in conducting policy, for instance by mobilizing powerful domestic allies (Bodea and Hicks, 2015*a*). Anticipating the greater effectiveness of CBI in democratically governed countries, the IMF will be more likely to use CBI conditionality in countries with high levels of vertical accountability. In other words, we expect horizontal accountability and vertical accountability to be complements with respect to CBI effectiveness. We find that veto players are significantly related to the likelihood of CBI conditionality only under high levels of vertical accountability, but unrelated under low levels of accountability (Figure 4).

Figure 4 Marginal effect of veto player index across different levels of vertical accountability.



4.2 Related outcomes

In the final part of our analysis, we complete two remaining tasks. The first is to provide evidence that CBI conditionality indeed is effective and therefore the assumptions underlying its use are met from an IMF perspective. The second is to make use of additional causal process observations that could not be included in the main analysis due to small sample sizes.

A key goal of the IMF is to promote CBI, which is an important institutional mechanism to keep inflation at bay (Garriga and Rodriguez, 2019). An assumption underlying the use of CBI conditionality is that it promotes central bank reform—specifically toward greater CBI—and thus mitigates excessive money growth in the borrowing country. Is there evidence that CBI conditionality promotes greater central bank independence?

Previous research has already established that CBI conditionality robustly increases *de jure* CBI (Kern, Reinsberg and Rau-Göhring, 2019). Our own analysis using a fixed-effects panel model replicates this finding (Table A12). We find that countries are particularly likely to undertake central bank reform and to promote CBI when facing explicit CBI conditionality ($p<0.05$), rather than being under an IMF program in general. As the CBI index only captures *de jure* CBI, one might be more concerned with *de facto* CBI improvements. We therefore test whether *de jure* CBI and *de facto* CBI are positively related in the long run. To that end, we create long-term measures of *de jure* CBI, defined as the five-year moving average of CBI (Garriga, 2016), and *de facto* CBI, defined as the net frequency of regular turnovers over irregular turnovers divided by all turnovers over moving five-year windows (Cingolani, Thomsson and De Crombrugghe, 2015). Running bare-bones fixed-effects regressions of *de facto* CBI on *de jure* CBI, we find a strong positive correlation ($\hat{\theta} = 0.8$, $p < 0.01$).[38]

When isolating instances of IMF treatments with CBI conditionality, we find that both *de jure* CBI and *de facto* CBI are higher compared to pre-intervention levels. The combined results from within-country regressions and event-window analysis suggest that in the long run, *de jure* CBI and *de facto* CBI are co-moving within countries and that IMF-induced *de jure CBI* reforms will ultimately benefit *de facto* CBI, even though *de facto* CBI may be immediately lower when a

[38]The regression formally reads as $(\textit{de facto}\ \text{CBI})_{it} = \theta\ \ (\textit{de jure}\ \text{CBI})_{it}\ + \alpha_i + \phi_t + \varepsilon_{it}$.

country submits itself under an IMF program, as shown by previous studies (Kern, Reinsberg and Rau-Göhring, 2019).[39]

We exploit yet another source of evidence to show that CBI conditionality helps isolate central banks from political pressure, thereby increasing *de facto* CBI. The absence of (successful) attempts of wielding political pressures on central banks would be an indicator of *de facto* CBI. Given the paucity of data available on instances of political pressures on central banks (Binder, 2018), we proceed with t-tests comparing the prevalence of political pressure in country observations under IMF programs with CBI conditionality with country observations under IMF programs without such conditionality. We further incorporate time information on when CBI conditionality was introduced using appropriate lag-lead structures. For illustration purposes, we also compare IMF countries to non-IMF countries.

Our results yield remarkably strong support for the argument that *de jure* CBI reform have a positive impact on the *de facto* insulation of central banks from political influence (Table A14). Considering all instances of attempted pressures, we find that IMF borrowers without CBI conditionality in the previous year had a 10 percent probability of pressure, while borrowers with CBI conditionality faced no instance of pressure ($p < 0.01$). Reassuringly, if CBI conditionality is imposed only in the year after political pressure is measured, we find no significant difference between the two groups. Neither do we find significant differences between IMF countries and non-IMF countries. Our results are identical when considering pressures to ease monetary policy, which implies that governments seek to influence central banks only when they require more expansionary policies.

The Binder (2018) data also gauges whether attempts of political pressure have been successful.

[39]Indeed, when we use the year-to-year variation in irregular governor turnover, we find that IMF intervention increases the rate of irregular governor turnover (Table A13). This likely is due to IMF pressure on governments to install IMF-friendly central bank governors—oftentimes former IMF employees. From a country's perspective, appointing a former employee of the Fund to head the central bank has the advantage that this person has experience in managing IMF-country relations and enhances a government's credibility in committing to IMF-induced reforms. The recent changes at the helmet of the central banks in Pakistan and Argentina are illustrating the viability of these government motives (see, e.g., "Pakistan Appoints IMF Official for New Central Bank Governor," Nikkei Asian Review, May 6, 2019.). Across a larger sample of countries, we 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's pressure creates 'sympathetic interlocutors' (Woods, 2006; Chwieroth, 2013).

The incidence rate is zero for IMF countries with CBI conditionality. For IMF countries without this condition, we obtain positive incidence rates. While there is a significant difference in successful political pressure vis-a-vis the group with lagged CBI conditionality ($p < 0.05$), there is no significant difference with the group of lead CBI conditionality. Taken together, these results provide strong support for the notion that *de jure* CBI reforms can have lasting impacts on *de facto* monetary institutions.

The ultimate rationale for promoting CBI is to achieve sustainable macroeconomic policy outcomes. Recognizing the difficulty of isolating the effect of CBI on macroeconomic policy outcomes, we now turn our attention to economic outcomes that could plausibly be affected by CBI improvements. We find that CBI conditionality helps to reduce broad money growth by about 19 percentage points (p<0.1), while being under an IMF program has a similar effect (albeit with a one-year lag). Our results also hold for an alternative measure of money, notably the percentage growth of M2.[40] Our results thus confirm that CBI conditionality is effective in reducing money growth (Table A12).

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 whether CBI conditionality reduces the likelihood of permanent interruptions, which can be understood as the result of non-compliance with IMF conditions (Stubbs et al., 2018). Our results provide overwhelming support for this hypothesis. These are also robust to alternative model specifications. 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)

[40] We perform these tests in a fixed-effects framework and include additional control variables from the CBI conditionality model as well as a lagged dependent variable to remove autocorrelation.

and also robust against inclusion of an IMF program selection equation, and against controlling for condition waivers as a tool to avoid program failures.

Program compliance following IMF interventions with CBI conditionality

Table 3 Standard errors clustered on countries. Significance levels: $*: p < 0.1$, $**: p < 0.05$, $***: p < 0.01$.

In summary, while the primary goal of our empirical analysis has been to establish that CBI conditionality is more common when checks and balances to government power are weak, the additional analyses in this section have shown that CBI conditionality indeed promotes greater CBI and reduces money growth while also boosting compliance with IMF programs as a whole. This lends strong support to our argument that the Fund—by promoting an independent central bank—creates a powerful agent that does not only help achieve short-term stabilization objectives but also safeguards compliance with IMF programs. From an IMF perspective, CBI conditionality thus upholds the promise of shaping a powerful domestic ally supporting its agenda, thus ensuring the long-term sustainability of its policy advice.

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 on a government.

We illustrate this mechanism referring to the IMF's CBI conditionality. Insulating monetary authorities from domestic political pressures, CBI conditionality becomes an important instrument to create a political player that does not bend to a government's will. 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 and limit a government's room to manipulate economic outcomes for short-term political gain. A particular innovation of our research is that we can identify a mechanism—CBI conditionality—through which the Fund *creates* a political player that is favorable to its own policy preferences. 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 deployed in countries where governments face fewer 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 assigns CBI conditionality 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 a 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 leads to a political strengthening of national central banks. 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) Neither data on the number of missions, their institutional staffing, policy scope, nor any other information are available that would allow for a systematic 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. Second, we expect the IMF to take a strong stand on behalf of central banks 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 the IMF to become an even more vocal advocate for CBI.

References

Acemoglu, Daron, Simon Johnson and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91(5):1369–1401.

Acemoglu, Daron, Simon Johnson, Pablo Querubin and James A. Robinson. 2008. "When Does Policy Reform Work? The Case of Central Bank Independence." *Brookings Papers on Economic Activity* 39(1 (Spring)):351–429.

Aghion, Philippe and Patrick Bolton. 1992. "An Incomplete Contracts Approach to Financial Contracting." *The Review of Economic Studies* 59(3):473–494.

Aklin, Michaël and Andreas Kern. 2019. "The Side Effects of Central Bank Independence." *forthcoming* American Journal of Political Science.

Alesina, Alberto and Andrea Stella. 2010. The Politics of Monetary Policy. In *Handbook of Monetary Economics*. Vol. 3 Elsevier pp. 1001–1054.

Andersen, Thomas Barnebeck, Thomas Harr and Finn Tarp. 2006. "On US Politics and IMF Lending." *European Economic Review* 50(7):1843–1862.

Andrews, Josephine T. and Gabriella R. Montinola. 2004. "Veto Players and the Rule of Law in Emerging Democracies." *Comparative Political Studies* 37(1):55–87.

Arias, Eric. 2017. "Patronage by Credit: International Sources of Patronage Spending in Developing Countries." Working Paper presented at IPES 2016.
URL: *https://www.internationalpoliticaleconomysociety.org/sites/default/files/ppt-uploads/AriasPatronage.pdf*

Arpac, Ozlem and Graham Bird. 2009. "Turkey and the IMF: A Case Study in the Political Economy of Policy Implementation." *The Review of International Organizations* 4(2):135–157.

Aslund, Anders. 2016. "Are Ukraine's Reforms Breaking its State Capture? An Agenda for Genuine Change." *Eurasian Geography and Economics* 57(6):819–833.

Bailey, Michael, Anton Strezhnev and Erik Voeten. 2015. "Estimating Dynamic State Preferences from United Nations Voting Data." *Journal of Conflict Resolution* 61(2):430–456.

Ballard-Rosa, Cameron, Layna Mosley and Rachel W. Wellhausen. 2019. "Contingent Advantage? Sovereign Borrowing, Democratic Institutions, and Global Capital Cycles." *forthcoming* British Journal of Political Science.

Balls, Ed, James Howat and Anna Stansbury. 2016. "Central Bank Independence Revisited: After the Financial Crisis, What Should a Model Central Bank Look Like?" Harvard University M-RCBG Associate Working Paper Series No. 67.
URL: *https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/67_ central.bank.v.2.pdf*

Ban, Cornel. 2016. *Ruling Ideas: How Global Neoliberalism Goes Local.* Oxford University Press.

Ban, Cornel. 2019. "Dependent Development at a Crossroads? Romanian Capitalism and its Contradictions." *West European Politics* pp. 1–28.

Ban, Cornel and Daniela Garbor. 2014. "Recalibrating Conventional Wisdom: Romania–IMF Relations under Scrutiny." Friedrich-Ebert-Stiftung Working Paper.
URL: *https://library.fes.de/pdf-files/bueros/bukarest/12416.pdf*

Barro, Robert J. and David B. Gordon. 1983. "Rules, Discretion and Reputation in a Model of Monetary Policy." *Journal of Monetary Economics* 12(1):101–121.

Bearce, David H. and Kim-Lee Tuxhorn. 2017. "When are Monetary Policy Preferences Egocentric? Evidence from American Surveys and an Experiment." *American Journal of Political Science* 61(1):178–193.

Beazer, Quintin H. and Byungwon Woo. 2016. "IMF Conditionality, Government Partisanship, and the Progress of Economic Reforms." *American Journal of Political Science* 60(2):304–321.

Berger, Helge, Jakob de Haan and Sylvester C.W. Eijffinger. 2001. "Central Bank Independence: An Update of Theory and Evidence." *Journal of Economic surveys* 15(1):3–40.

Bernhard, William, J. Lawrence Broz and William Roberts Clark. 2002. "The Political Economy of Monetary Institutions." *International Organization* 56(4):693–723.

Besley, Timothy and Stephen Coate. 1995. "Group Lending, Repayment Incentives and Social Collateral." *Journal of Development Economics* 46(1):1–18.

Binder, Carola. 2018. "Political Pressure on Central Banks." Working Paper presented at the Bank of Canada Central Bank Communications Conference.
URL: *https://papers.ssrn.com/sol3/papers.cfm?abstract_ id=3244148&download=yes*

Bird, Graham. 2007. "The IMF: A Bird's Eye View of its Role and Operations." *Journal of Economic Surveys* 21(4):683–745.

Blanchard, Olivier. 2004. "Fiscal Dominance and Inflation Targeting: Lessons from Brazil." NBER Working Paper 10389.

Blancheton, Bertrand. 2016. "Central bank Independence in a Historical Perspective: Myth, Lessons and a New Model." *Economic Modelling* 52:101–107.

Blejer, Mario I, Alfredo M Leone, Pau Rabanal and Gerd Schwartz. 2002. "Inflation Targeting in the Context of IMF-Supported Adjustment Programs." *IMF Staff Papers* 49(3):313–338.

Blinder, Alan. 2016. "The Evolving Political Economy of Central Banking." Lecture at the Mario Einaudi Center for International Studies, June 7, 2016.
URL: *https://www.cornell.edu/video/alan-blinder-political-economy-of-central-banking*

Blinder, Alan S. 1998. *Central Bank in Theory and Practice*. Cambridge, MA: MIT Press.

Blinder, Alan S. 2000. "Central-Bank Credibility: Why Do We Care? How Do We Build It?" *American Economic Review* 90(5):1421–1431.

Bodea, Cristina. 2010. "Exchange Rate Regimes and Independent Central Banks: A Correlated Choice of Imperfectly Credible Institutions." *International Organization* 64(3):411–442.

Bodea, Cristina and Masaaki Higashijima. 2017. "Central Bank Independence and Fiscal Policy: Can the Central Bank Restrain Deficit Spending?" *British Journal of Political Science* 47(1):47–70.

Bodea, Cristina and Raymond Hicks. 2015*a*. "International Finance and Central Bank Independence: Institutional Diffusion and the Flow and Cost of Capital." *Journal of Politics* 77(1):268–284.

Bodea, Cristina and Raymond Hicks. 2015*b*. "Price Stability and Central Bank Independence: Discipline, Credibility, and Democratic Institutions." *International Organization* 69(01):35–61.

Bodea, Cristina and Raymond Hicks. 2018. "Sovereign Credit Ratings and Central Banks: Why Do Analysts Pay Attention to Institutions?" *Economics & Politics* 30(3):340–365.

Borio, Claudio. 2019. "Central Banking in Challenging Times." BIS Working Papers No. 829. **URL:** *https://www.bis.org/publ/work829.htm*

Brambor, Thomas, William Roberts Clark and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14(1):63–82.

Braumoeller, Bear F. 2004. "Hypothesis Testing and Multiplicative Interaction Terms." *International Organization* 58(4):807–820.

Breen, Michael. 2013. *The Politics of IMF Lending*. Palgrave Macmillan.

Brooks, Sarah M, Raphael Cunha and Layna Mosley. 2015. "Categories, Creditworthiness, and Contagion: How Investors' Shortcuts Affect Sovereign Debt Markets." *International Studies Quarterly* 59(3):587–601.

Bulag, Uradyn E. 2018. "Mongolia in 2017: A Year of Feudal Fights in a Democracy." *Asian Survey* 58(1):80–85.

Cárdenas, Mauricio, Roberto Junguito and Mónica Pachón. 2008. Political Institutions and Policy Outcomes in Colombia: The Effects of the 1991 Constitution. In *Policymaking in Latin America: How Politics Shapes Policies*, ed. Ernesto Stein, Mariano Tommasi, Carlos Scartascini and Pablo Spiller. Inter-American Development Bank chapter 2, pp. 199 – 242.

Cargill, Thomas F. 2001. "Central Bank Independence in Korea." *Journal of the Korean Economy* 2(1):1–33.

Chwieroth, Jeffrey M. 2013. "The Silent Revolution: How the Staff Exercise Informal Governance over IMF Lending." *The Review of International Organizations* 8(2):265–290.

Cingolani, Luciana, Kaj Thomsson and Denis De Crombrugghe. 2015. "Minding Weber More Than Ever? The Impacts of State Capacity and Bureaucratic Autonomy on Development Goals." *World Development* 72:191–207.

Copelovitch, Mark S. 2010. "Master or Servant? Common Agency and the Political Economy of IMF Lending." *International Studies Quarterly* 54(1):49–77.

Copelovitch, Mark S. and David Andrew Singer. 2008. "Financial Regulation, Monetary Policy, and Inflation in the Industrialized World." *The Journal of Politics* 70(3):663–680.

Coppedge, Michael, Staffan Lindberg, Svend-Erik Skaaning and Jan Teorell. 2016. "Measuring High Level Democratic Principles using the V-Dem Data." *International Political Science Review* 37(5):580–593.

Crowe, Christopher. 2008. "Goal Independent Central Banks: Why Politicians Decide to Delegate." *European Journal of Political Economy* 24(4):748–762.

Cukierman, Alex, Geoffrey P. Miller and Bilin Neyapti. 2002. "Central Bank Reform, Liberalization and Inflation in Transition Economies – An International Perspective." *Journal of Monetary Economics* 49(2):237–264.

Cukierman, Alexander, Steven B. Webb and Bilin Neyapti. 1992. "Measuring the Independence of Central Banks and its Effect on Policy Outcomes." *The World Bank Economic Review* 6(3):353–398.

Cunningham, Kathleen Gallagher. 2011. "Divide and Conquer or Divide and Concede: How do States Respond to Internally Divided Separatists?" *American Political Science Review* 105(2):275–297.

de Haan, Jakob, Christina Bodea, Raymond Hicks and Sylvester CW Eijffinger. 2018. "Central bank Independence before and after the Crisis." *Comparative Economic Studies* 60(2):183–202.

de Haan, Jakob, Donato Masciandaro and Marc Quintyn. 2008. "Does Central Bank Independence still Matter?" *European Journal of Political Economy* 24(4):717–721.

de Haan, Jakob and Jan-Egbert Sturm. 2019. Central Bank Communication: How to Manage Expectations? In *The Oxford Handbook of the Economics of Central Banking*, ed. David G. Mayes, Pierre L. Siklos and Jan-Egbert Sturm. Oxford University Press chapter 8.

de Haan, Jakob and Sylvester Eijffinger. 2019. "The Politics of Central Bank Independence." *forthcoming* Oxford Handbook of Public Choice.

Demertzis, Maria, Andrew Hughes Hallett and Nicola Viegi. 2004. "An Independent Central Bank Faced with Elected Governments." *European Journal of Political Economy* 20(4):907–922.

Demir, Firat. 2004. "A Failure Story: Politics and Financial Liberalization in Turkey, Revisiting the Revolving Door Hypothesis." *World Development* 32(5):851–869.

Dijkstra, A. Geske. 2002. "The Effectiveness of Policy Conditionality: Eight Country Experiences." *Development and Change* 33(2):307–334.

Dincer, Nazire Nergiz and Barry Eichengreen. 2014. "Central Bank Transparency and Independence: Updates and New Measures." *International Journal of Central Banking* 10(1):189–259.

Domencich, Tom and Daniel L. McFadden. 1975. *Urban Travel Demand: A Behavioral Analysis.* Cambridge, MA: North-Holland Publishing Co.

Dreher, Axel. 2009. "IMF Conditionality: Theory and Evidence." *Public Choice* 141(1-2):233–267.

Dreher, Axel, Jan-Egbert Sturm and Jakob de Haan. 2010. "When is a Central Bank Governor Replaced? Evidence Based on a New Data Set." *Journal of Macroeconomics* 32(3):766–781.

Dreher, Axel, Jan-Egbert Sturm and James Ramond Vreeland. 2015. "Politics and IMF Conditionality." *Journal of Conflict Resolution* 59(1):120–148.

Dreher, Axel, Jan-Egbert Sturm and James Raymond Vreeland. 2009*a*. "Development aid and international politics: Does membership on the UN Security Council influence World Bank decisions?" *Journal of Development Economics* 88(1):1–18.

Dreher, Axel, Jan-Egbert Sturm and James Raymond Vreeland. 2009*b*. "Global Horse Trading: IMF Loans for Votes in the United Nations Security Council." *European Economic Review* 53(7):742–757.

Dreher, Axel and Roland Vaubel. 2004. "Do IMF and IBRD Cause Moral Hazard and Political Business Cycles? Evidence from Panel Data." *Open Economies Review* 15:5 – 22.

Fernández-Albertos, José. 2015. "The Politics of Central Bank Independence." *Annual Review of Political Science* 18:217–237.

Funke, Manuel, Moritz Schularick and Christoph Trebesch. 2016. "Going to Extremes: Politics after Financial Crises, 1870–2014." *European Economic Review* 88:227–260.

Garriga, Ana Carolina. 2016. "Central Bank Independence in the World: A New Data Set." *International Interactions* 42(5):849–868.

Garriga, Ana Carolina and Cesar M Rodriguez. 2019. "More Effective than we Thought? Central Bank Independence and Inflation in Developing Countries." *Economic Modelling* 85:87–105.

Goodhart, Charles and Rosa Lastra. 2018. "Populism and Central Bank Independence." *Open Economies Review* 29(1):49–68.

Goodman, John B. 1991. "The Politics of Central Bank Independence." *Comparative Politics* 23(3):329–349.

Grilli, Vittorio, Donato Masciandaro and Guido Tabellini. 1991. "Political and Monetary Institutions and Public Financial Policies in the Industrial Countries." *Economic Policy* 6(13):341–392.

Gygli, Savina, Florian Haelg, Niklas Potrafke and Jan-Egbert Sturm. 2018. "The KOF Globalisation Index – Revisited." *The Review of International Organizations* pp. 1–32.

Hainmueller, Jens, Jonathan Mummolo and Yiqing Xu. 2019. "How much Should we Trust Estimates from Multiplicative Interaction Models? Simple Tools to Improve Empirical Practice." *Political Analysis* 27(2):163–192.

Hauner, David. 2009. "Public Debt and Financial Development." *Journal of Development Economics* 88(1):171–183.

Hayo, Bernd and Carsten Hefeker. 2002. "Reconsidering Central Bank Independence." *European Journal of Political Economy* 18(4):653–674.

Hayo, Bernd and Florian Neumeier. 2020. "Public Knowledge About and Attitudes Towards Central Bank Independence in New Zealand." *Journal of Banking & Finance* 113:1 – 13.

Hayo, Bernd and Stefan Voigt. 2008. "Inflation, Central Bank Independence, and the Legal System." *Journal of Institutional and Theoretical Economics* pp. 751–777.

Hefeker, Carsten. 2019. "Political Polarization, Term Length and Too Much Delegation." *Constitutional Political Economy* 30(1):50–69.

Henisz, Witold J. 2002. "The Political Constraint Index (POLCON) Dataset." Dataset.
URL: *https://whartonmgmt.wufoo.com/forms/political-constraint-index-polcon-dataset/*

Hennessy, Alexandra. 2017. "Good Samaritans vs. Hardliners: The Role of Credible Signalling in Greek Bailout Negotiations." *Journal of Common Market Studies* 55(4):744–761.

Hielscher, Kai and Gunther Markwardt. 2012. "The Role of Political Institutions for the Effectiveness of Central Bank Independence." *European Journal of Political Economy* 28(3):286–301.

Hollyer, James R., B. Peter Rosendorff and James Raymond Vreeland. 2011. "Democracy and Transparency." *The Journal of Politics* 73(4):1191–1205.

Holtfrerich, Carl-Ludwig. 2012. Relations between Monetary Authorities and Governmental Institutions: The Case of Germany from the 19th Century to the Present. In *Central Banks' Independence in Historical Perspective*, ed. Fausto Vicarelli. Walter de Gruyter chapter 5.

Ilzetzki, Ethan, Carmen M. Reinhart and Kenneth S. Rogoff. 2019. "Exchange Arrangements Entering the Twenty-First Century: Which Anchor Will Hold?" *The Quarterly Journal of Economics* 134(2):599–646.

IMF. 1999. "Code of Good Practices on Transparency in Monetary and Financial Policies." IMF Official Document.
URL: *https://www.imf.org/external/np/mae/mft/code/index.htm#goodtrans*

IMF. 2005. "Safeguards Assessments: Review of Experience." IMF Staff Report.
URL: *https://www.imf.org/ /media/Websites/IMF/Imported/.../2005/_033105pdf.ashx*

IMF. 2009. "Republic of Tajikistan – Letter of Intent." Memorandum of Economic and Financial Policies, and Technical Memorandum of Understanding, March 31, 2009.
URL: *https://www.imf.org/external/np/loi/2009/tjk/033109.pdf*

IMF. 2014. *International Financial Statistics 2014*. IMF.

IMF. 2015. "Haiti – Ex Post Assessment of Longer-Term Program Engagement." IMF Country Report No. 15/4.
URL: *https://www.imf.org/external/pubs/ft/scr/2015/cr1504.pdf*

IMF. 2017. "Mongolia: 2017 Article IV Consultation and Request for an Extended Arrangement Under the Extended Fund Facility." IMF Country Report 17/240.
URL: *https://www.imf.org/en/Publications/CR/Issues/2017/05/31/Mongolia-2017-Article-IV-Consultation-and-Request-for-an-Extended-Arrangement-Under-the-44954*

IMF. 2018*a*. "Argentina – Request for Stand-by Arrangement – Press Release and Staff Report." IMF Country Report 18/219.
URL: *https://www.imf.org/en/Publications/CR/Issues/2018/07/13/Argentina-Request-for-Stand-By-Arrangement-Press-Release-and-Staff-Report-46078*

IMF. 2018*b*. "Mongolia: Staff Report for the Third Review Under the Extended Fund Facility." IMF Country Report 18/98.

URL: *https://www.imf.org/en/Publications/CR/Issues/2017/05/31/Mongolia-2017-Article-IV-Consultation-and-Request-for-an-Extended-Arrangement-Under-the-44954*

IMF. 2018*c*. "Review of 1997 Guidance Note on Governance - A Proposed Framework for Enhanced Fund Engagement." IMF Policy Paper.
URL: *https://www.imf.org/en/Publications/Policy-Papers/Issues/2018/04/20/pp030918-review-of-1997-guidance-note-on-governance*

IMF. 2019. "Ecuador." IMF Staff Report for the 2019 Article IV Consultation and Request for an Extended Arrangement under the Extended Fund Facility.
URL: *https://www.imf.org/en/Publications/CR/Issues/2019/03/20/Ecuador-Staff-Report-for-the-2019-Article-IV-Consultation-and-Request-for-an-Extended-46682*

James, Harold. 1996. *International Monetary Cooperation since Bretton Woods*. International Monetary Fund.

Johnson, Juliet. 2016. *Priests of Prosperity: How Central Bankers Transformed the Postcommunist World*. Ithaca: Cornell Univeristy Press.

Kahler, Miles. 1992. External Influence, Conditionality, and the Politics of Adjustment. In *The Politics of Economic Adjustment: International Constraints, Distributive Conflicts and the State*, ed. Stephan Haggard and Robert R. Kaufman. Princeton University Press chapter 2, pp. 89–138.

Keefer, Philip. 2007. "Elections, Special Interests, and Financial Crisis." *International Organization* 61(3):607–641.

Keefer, Philip and David Stasavage. 2003. "The Limits of Delegation: Veto Players, Central Bank Independence, and the Credibility of Monetary Policy." *American Political Science Review* 97(03):407–423.

Kelley, Judith G. and Beth A. Simmons. 2015. "Politics by Number: Indicators as Social Pressure in International Relations." *American Journal of Political Science* 59(1):55–70.

Kentikelenis, Alexander E and Sarah Babb. 2019. "The Making of Neoliberal Globalization: Norm Substitution and the Politics of Clandestine Institutional Change." *American Journal of Sociology* 124(6):1720–1762.

Kentikelenis, Alexander E., Thomas H. Stubbs and Lawrence P. King. 2016. "IMF Conditionality and Development Policy Space, 1985–2014." *Review of International Political Economy* 23(4):543–582.

Kern, Andreas, Bernhard Reinsberg and Matthias Rau-Göhring. 2019. "IMF Conditionality and Central Bank Independence." *European Journal of Political Economy* 59:212–229.

Khan, Mohsin S. and Sunil Sharma. 2003. "IMF Conditionality and Country Ownership of Adjustment Programs." *The World Bank Research Observer* 18(2):227–248.

Klein, Michael W. and Jay C. Shambaugh. 2010. *Exchange Rate Regimes in the Modern Era – Updated Version as of 2019*. Cambridge, MA: MIT Press.

Krishnamurthy, Arvind and Annette Vissing-Jorgensen. 2012. "The Aggregate Demand for Treasury Debt." *Journal of Political Economy* 120(2):233–267.

Kydland, Finn E. and Edward C. Prescott. 1977. "Rules rather than Discretion: The Inconsistency of optimal Plans." *Journal of Political Economy* 85(3):473–491.

Levy-Yeyati, Eduardo and Federico Sturzenegger. 2005. "Classifying Exchange Rate Regimes: Deeds vs. words." *European Economic Review* 49(6):1603–1635.

Lohmann, Susanne. 1992. "Optimal Commitment in Monetary Policy: Credibility versus Flexibility." *The American Economic Review* 82(1):273–286.

Lohmann, Susanne. 1998. "Federalism and Central Bank Independence: The Politics of German Monetary Policy, 1957–92." *World Politics* 50(3):401–446.

Lührmann, Anna, Kyle L. Marquardt and Valeriya Mechkova. 2017. "Constraining Governments: New Indices of Vertical, Horizontal and Diagonal Accountability." V-Dem Working Paper No. 46.

Marshall, Monty G., Keith Jaggers and Ted Robert Gurr. 2015. "Polity IV Project: Political Regime Characteristics and Transitions, 1800-2013." Polity IV Dataset.
URL: *http://www.systemicpeace.org/polity/polity4.htm*

Masciandaro, Donato and Davide Romelli. 2015. "Ups and Downs of Central Bank Independence from the Great Inflation to the Great Recession: Theory, Institutions and Empirics." *Financial History Review* 22(3):259–289.

Masciandaro, Donato and Davide Romelli. 2018. "Central Bankers as Supervisors: Do Crises Matter?" *European Journal of Political Economy* 52:120–140.

Maxfield, Sylvia. 1997. *Gatekeepers of Growth – The International Political Economy of Central Banking in Developing Countries*. Princeton: Princeton University Press.

McDowell, Daniel. 2017. "Need for Speed: The Lending Responsiveness of the IMF." *The Review of International Organizations* 12(1):39–73.

McNamara, Kathleen. 2002. "Rational Fictions: Central Bank Independence and the Social Logic of Delegation." *West European Politics* 25(1):47–76.

Mee, Simon. 2019. *Central Bank Independence and the Legacy of the German Past*. Cambridge University Press.

Menaldo, Victor. 2015. "The Fiscal Roots of Financial Underdevelopment." *American Journal of Political Science* 60(2):456–471.

Menaldo, Victor and Daniel Yoo. 2015. "Democracy, Elite Bias, and Financial Development in Latin America." *World Politics* 67(4):726–759.

Meyer, Brett and Jordan Kyle. 2019. "Ulysses Berated: How Populist Leaders affect Central Bank Independence." Working Paper presented at the European Political Science Association 2019.
URL: *http://www.brettandrewmeyer.com/research.html*

Moser, Christoph and Jan-Egbert Sturm. 2011. "Explaining IMF lending decisions after the Cold War." *The Review of International Organizations* 6(3-4):307–340.

Moser, Peter. 1999. "Checks and Balances, and the Supply of Central Bank Independence." *European Economic Review* 43(8):1569–1593.

Mussa, Michael and Miguel Savastano. 1999. "The IMF Approach to Economic Stabilization." *NBER Macroeconomics Annual* 14:79–122.

Nelson, Stephen Craig. 2017. *The Currency of Confidence: How Economic Beliefs Shape the IMF's Relationship with Its Borrowers*. Cornell University Press.

Nöh, Lukas. 2019. "Increasing Public Debt and the Role of Central Bank Independence for Debt Maturities." *European Economic Review* 119:179–198.

Nooruddin, Irfan and Joel W. Simmons. 2006. "The Politics of Hard Choices: IMF Programs and Government Spending." *International Organization* 60(4):1001–1033.

Northrop, Mildred B. 1937. *Control Policies of the Reichsbank 1924-1933*. New York: Columbia University Press.

Öniş, Ziya and Caner Bakir. 2007. "Turkey's Political Economy in the Age of Financial Globalization: The Significance of the EU Anchor." *South European Society & Politics* 12(2):147–164.

Pepinsky, Thomas B. 2013. "The Domestic Politics of Financial Internationalization in the Developing World." *Review of International Political Economy* 20(4):848–880.

Pirie, Iain. 2007. *The Korean Developmental State: From Dirigisme to Neo-Liberalism*. Routledge.

Polillo, Simone and Mauro F Guillén. 2005. "Globalization Pressures and the State: The Worldwide Spread of Central Bank Independence." *American Journal of Sociology* 110(6):1764–1802.

Posen, Adam S. 1995. "Declarations are not Enough: Financial Sector Sources of Central Bank Independence." *NBER Macroeconomics Annual 1995* 10:253–274.

Reinhart, Carmen M. and Christoph Trebesch. 2016. "The International Monetary Fund: 70 Years of Reinvention." *Journal of Economic Perspectives* 30(1):3–28.

Reinhart, Carmen M. and Kenneth S. Rogoff. 2009. *This Time is Different: Eight Centuries of Financial Folly.* Princeton, NJ: Princeton University Press.

Reinsberg, Bernhard, Alexander Kentikelenis, Thomas Stubbs and Lawrence King. 2019. "The World System and the Hollowing Out of State Capacity: How Structural Adjustment Programs Affect Bureaucratic Quality in Developing Countries." *American Journal of Sociology* 124(4):1222–1257.

Rickard, Stephanie J. and Teri Caraway. 2019. "International Demands for Austerity: Examining the Impact of the IMF on the Public Sector." *Review of International Organizations* 14(1):35–57.

Rodrik, Dani. 2006. "Goodbye Washington Consensus, Hello Washington Confusion? A Review of the World Bank's Economic Growth in the 1990s: Learning from a Decade of Reform." *Journal of Economic Literature* 44(4):973–987.

Romelli, Davide. 2018. "The Political Economy of Reforms in Central Bank Design: Evidence from a New Dataset." BAFFI CAREFIN Centre Research Paper No. 2018-87.
URL: *https://papers.ssrn.com/sol3/papers.cfm?abstract_ id=3235209*

Roodman, David. 2011. "Fitting Fully Observed Recursive Mixed-Process Models with CMP." *Stata Journal* 11(2):159–206.

Rosenberg, Emily S. 1998. "Revisiting Dollar Diplomacy: Narratives of Money and Manliness." *Diplomatic History* 22(2):155–176.

Sargent, Thomas J. and N. Wallace. 1981. "Some Unpleasant Monetarist Arithmetic." *Federal Reserve Bank of Minneapolis Quarterly Review* 5(3):751–777.

Scheve, Kenneth. 2004. "Public Inflation aversion and the Political Economy of Macroeconomic Policymaking." *International Organization* 58(1):1–34.

Simmons, Beth A. 2000. "International Law and State Behavior: Commitment and Compliance in International Monetary Affairs." *American Political Science Review* 94(4):819–835.

Steinwand, Martin C. and Randall W. Stone. 2008. "The International Monetary Fund: A Review of the Recent Evidence." *Review of International Organizations* 3(2):123–149.

Stone, Randall W. 2004. "The Political Economy of IMF Lending in Africa." *American Political Science Review* 98(04):577–591.

Stone, Randall W. 2008. "The Scope of IMF Conditionality." *International Organization* 62(04):589–620.

Stubbs, Thomas, Bernhard Reinsberg, Alexander Kentikelenis and Lawrence King. 2018. "How to Evaluate the Effects of IMF Conditionality." *The Review of International Organizations* pp. 1–45.

Taylor, Matthew M. 2009. "Institutional Development through Policy-Making: A Case Study of the Brazilian Central Bank." *World Politics* 61(3):487–515.

Thacker, Strom C. 1999. "The High Politics of IMF Lending." *World Politics* 52(1):38–75.

Van Atta, Don. 2009. ""White Gold" or Fool's Gold? The Political Economy of Cotton in Tajikistan." *Problems of Post-Communism* 56(2):17–35.

van der Cruijsen, Carin, David-Jan Jansen and Jakob de Haan. 2015. "How much Does the Public Know about the ECBÕs Monetary Policy? Evidence from a Survey of Dutch Households." *International Journal of Central Banking* 11(4):169–218.

Vreeland, James Raymond. 2002. "Institutional Determinants of IMF Agreements." unpublished working paper.
URL: *https://www.files.ethz.ch/isn/43987/2001-06.pdf*

Vreeland, James Raymond. 2003. "Why do Governments and the IMF Enter into Agreements? Statistically Selected Cases." *International Political Science Review* 24(3):321–343.

Vreeland, James Raymond. 2006. *The International Monetary Fund (IMF): Politics of Conditional Lending*. Routledge.

Vreeland, James Raymond and Axel Dreher. 2014. *The Political Economy of the United Nations Security Council: Money and Influence*. Cambridge University Press.

Walter, Stefanie. 2013. *Financial Crises and the Politics of Macroeconomic Adjustments.* Cambridge University Press.

Walton, John and Charles Ragin. 1990. "Global and National Sources of Political Protest: Third World Responses to the Debt Crisis." *American Sociological Review* pp. 876–890.

Woo, Jaejoon. 2006. "Economic, Political, and Institutional Determinants of Public Deficits." *The Political Economy of Fiscal Policy: Public Deficits, Volatility, and Growth.* pp. 77–116.

Woods, Ngaire. 2006. *The Globalizers: the IMF, the World Bank, and their Borrowers.* Cornell University Press.

World Bank, The. 2019. "World Development Indicators 2019." The World Bank, Washington; D.C.

Figures and tables

Figure 1: Evolution of CBI conditionality.

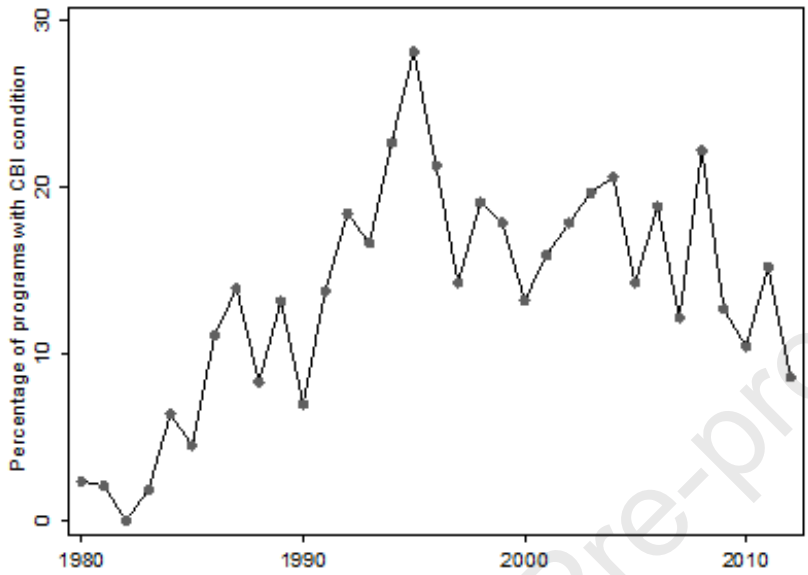


Table 1: Determinants of CBI conditionality.

	Veto player index		Horizontal accountability		Past CBI	
CBI conditionality						
Checks and balances	-0.146**	(0.316)	-0.057***	(0.221)	-0.178**	(0.448)
Inflation growth	0.008**	(0.003)	0.008**	(0.003)	0.008**	(0.004)
Corruption index	0.016	(0.079)	-0.077	(0.084)	0.030	(0.083)
Financial interests	-0.027	(0.025)	-0.022	(0.024)	-0.038	(0.026)
GDP per capita	-0.048*	(0.029)	-0.048*	(0.028)	-0.035	(0.031)
Public debt	-0.007	(0.031)	-0.009	(0.030)	-0.002	(0.034)
Trade openness	0.043	(0.035)	0.037	(0.036)	0.040	(0.035)
Financial openness	-0.002	(0.002)	-0.002	(0.001)	-0.000	(0.002)
Peg	-0.063**	(0.032)	-0.067**	(0.031)	-0.029	(0.033)
Soft peg	0.029	(0.025)	0.030	(0.026)	0.044*	(0.024)
IMF program						
Past programs	1.657***	(0.109)	1.658***	(0.109)	1.658***	(0.124)
UNGA vote alignment	2.940***	(0.968)	2.946***	(1.043)	3.364***	(0.980)
GDP growth	-0.032***	(0.009)	-0.033***	(0.009)	-0.029***	(0.010)
Reserves	-0.105***	(0.025)	-0.105***	(0.026)	-0.090***	(0.025)
Debt service	0.015	(0.013)	0.015	(0.013)	0.014	(0.013)
Checks and balances	0.117	(0.250)	0.019	(0.074)	0.681**	(0.274)
Inflation growth	-0.002	(0.012)	-0.002	(0.012)	-0.000	(0.012)
Corruption index	0.267	(0.233)	0.291	(0.255)	0.362	(0.314)
Financial interests	-0.063	(0.057)	-0.063	(0.058)	-0.050	(0.061)
GDP per capita	-0.305***	(0.107)	-0.303***	(0.107)	-0.297***	(0.108)
Public debt	0.277***	(0.091)	0.275***	(0.091)	0.240**	(0.104)
Trade openness	-0.169	(0.116)	-0.167	(0.116)	-0.082	(0.125)
Financial openness	-0.007	(0.005)	-0.007	(0.005)	-0.008	(0.005)
Peg	-0.168	(0.125)	-0.167	(0.128)	-0.267**	(0.129)
Soft peg	-0.096	(0.098)	-0.096	(0.098)	-0.087	(0.112)
Regional dummies	Yes		Yes		Yes	

Income group dummies	Yes	Yes	Yes
Time trends	Yes	Yes	Yes
Observations (Equation 1)	1255	1259	1146
Pseudo-R2 (Equation 1)	0.119	0.127	0.132
Observations (Equation 2)	1924	1924	1699
Pseudo-R2 (Equation 2)	0.346	0.346	0.351

Notes: 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<.1 ** p<.05 *** p<.01

Table 2: Sub-dimensions of CBI conditionality.

	Dimension of CBI conditionality					
	Governor	Mandate	Policy	Quasi-fiscal operations	Transparency	Banking regulation
Checks and balances	-0.008	-0.015***	-0.076**	-0.058	-0.022	-0.012
	(0.020)	(0.000)	(0.038)	(0.041)	(0.025)	(0.022)
Inflation growth	0.000	0.001***	0.005**	0.004*	0.003	0.002
	(0.001)	(0.000)	(0.003)	(0.003)	(0.002)	(0.002)
Corruption index	-0.003	0.036***	0.019	0.026	0.008	0.012
	(0.030)	(0.000)	(0.043)	(0.043)	(0.026)	(0.025)
Financial interests	-0.006	-0.006	-0.017	-0.018	-0.002	-0.010*
	(0.005)	(0.027)	(0.010)	(0.018)	(0.006)	(0.006)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Selection model	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1255	1255	1255	1255	1255	1255
Pseudo-R2	0.166	0.196	0.146	0.179	0.207	0.208

Notes: Checks and balances is the veto player index. 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<.1 ** p<.05 *** p<.01

The effect of veto players on CBI conditionality under different country circumstances.

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

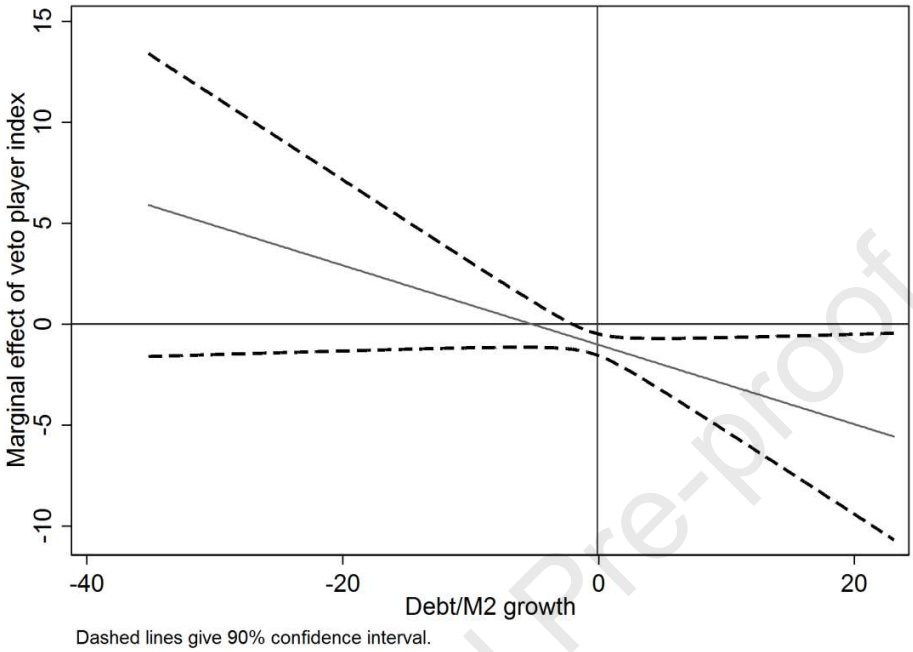


Figure 3: Marginal effect of veto player index and financial crisis episodes.

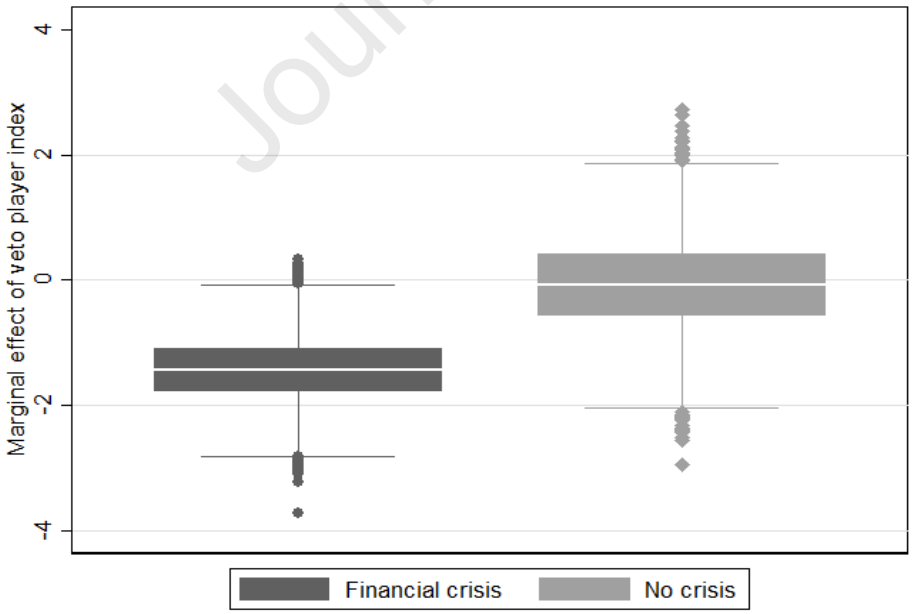


Figure 4: Marginal effect of veto player index across different levels of regime type.

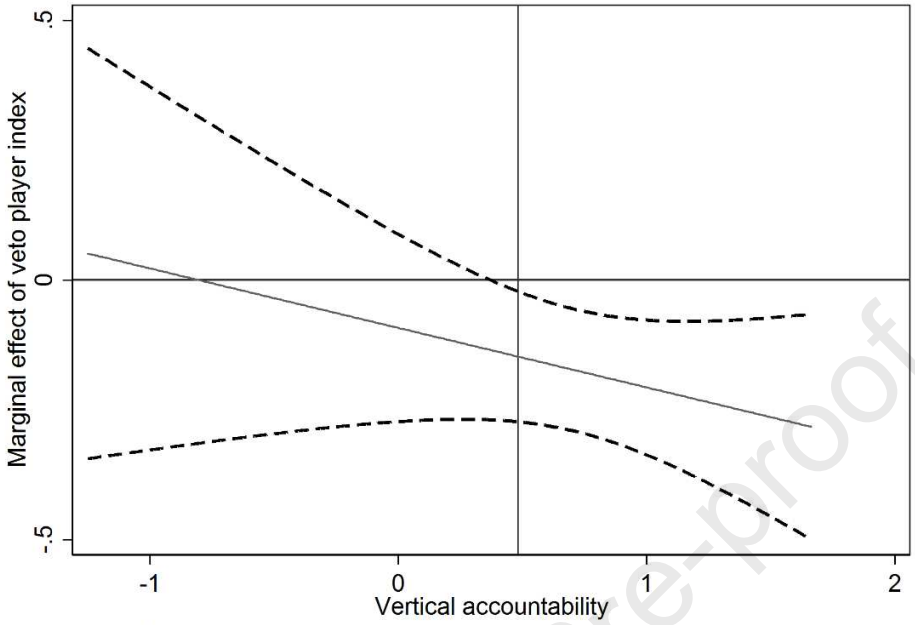


Table 3: Program compliance following IMF interventions with CBI conditionality.

	(1)	(2)	(3)	(4)	(5)	(6)
Permanent interruption						
CBI conditionality	-0.303**	-0.100**	-0.463***	-0.412**	-0.168***	-0.145**
	(0.128)	(0.041)	(0.172)	(0.178)	(0.060)	(0.063)
GDP per capita	0.495**	0.168**	0.283	0.231	0.109*	0.092
	(0.190)	(0.060)	(0.173)	(0.176)	(0.061)	(0.062)
Public debt	0.018	-0.005	0.269*	0.288**	0.094*	0.097*
	(0.145)	(0.048)	(0.145)	(0.145)	(0.055)	(0.054)
Trade openness	0.412**	0.145**	-0.066	-0.023	-0.024	-0.004
	(0.181)	(0.059)	(0.142)	(0.145)	(0.052)	(0.054)
Financial openness	-0.012	-0.004*	-0.013	-0.014*	-0.005*	-0.005*
	(0.008)	(0.003)	(0.008)	(0.008)	(0.003)	(0.003)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Controlling for waivers	Yes	Yes	No	Yes	No	Yes
Unit of analysis	Program-year	Program-year	Program	Program	Program	Program
Program selection	No	Yes	No	No	Yes	Yes
Observations	1005	1004	422	416	422	416
Pseudo-R2	0.093	0.093	0.053	0.059	0.053	0.059

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

Conflicts of Interest Statement

Manuscript Title: The Political Economy of IMF Conditionality and Central Bank Independence

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