

IFI Lending, Conditionality, and Institutional Strength

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Abstract

This paper examines how the design of conditional lending programs by International Financial Institutions (IFIs) influences sovereign borrowing decisions, default risk, and welfare in emerging markets with varying degrees of institutional strength. We develop a dynamic political economy model of sovereign default in which public resources can be diverted into politically motivated transfers, and show that weaker institutions amplify over-borrowing and raise default risk. We then embed IFI lending into this environment to analyze the macroeconomic and welfare implications of alternative Quantitative Performance Criteria (QPCs)—specifically, anti-corruption conditionality and debt-ceiling rules. While IFI programs provide liquidity during crises, their mere availability can exacerbate moral hazard and fiscal mismanagement in countries with weak institutions. Conditioning access on anti-corruption measures curbs these distortions, reducing default risk and improving welfare. However, even full monitoring fails to eliminate opportunistic behavior, as governments may still accumulate excessive debt during good times without addressing underlying vulnerabilities. We compare this to a rules-based approach that limits debt accumulation directly. A rules-based debt ceiling achieves reductions in default rates but at greater welfare cost, as austerity constrains public-good spending. Our results highlight that anti-corruption oversight—though costly to enforce—more effectively enhances welfare than purely fiscal conditionality.

Keywords— Sovereign Debt Crises, Institutions, Corruption, Sovereign Default, IFI loans, Emerging Markets, Quantitative Performance Criteria, IMF, Debt Ceiling Rule

JEL— D72, E43, F34, E62, F41

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1 Introduction

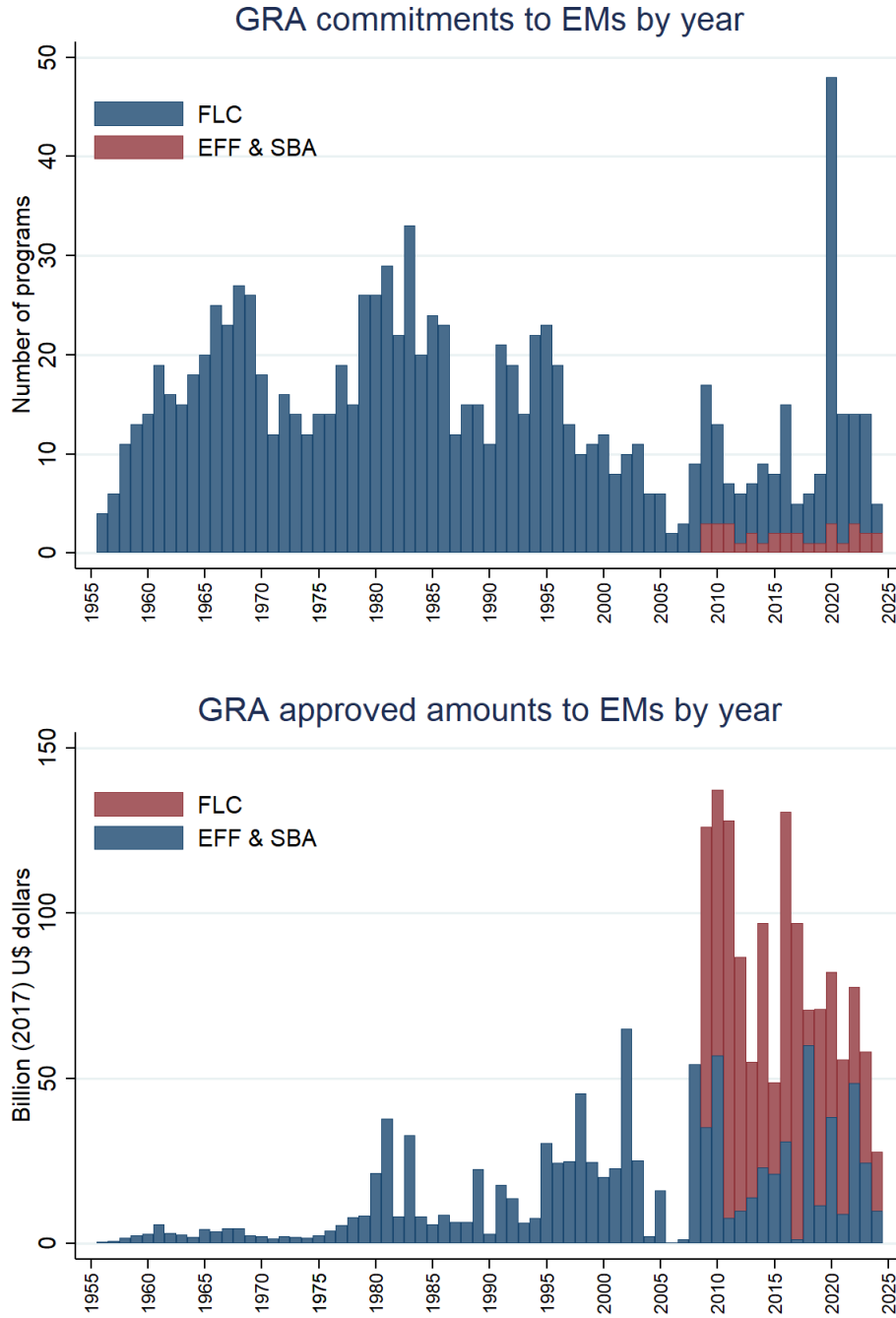
This paper studies how the design of conditional lending programs by International Financial Institutions (IFIs), such as the International Monetary Fund (IMF), affects sovereign borrowing behavior, default risk, and welfare in emerging markets (EMs) with varying degrees of institutional weakness. Specifically, we develop a dynamic political economy bargaining model of sovereign default in which policymakers often use public resources not for broad, programmatic goals but for targeted transfers in order to obtain political support. Because debt often serves as the vehicle for financing these transfers, countries with weak institutional constraints tend to over-borrow and default more frequently than those with strong ‘checks and balances.’ We embed IFI programs into this environment to examine how different types of conditionality rules—including anti-corruption conditionality and debt-ceiling rules—alter governments’ incentives and macroeconomic outcomes. Our analysis quantifies the trade-offs between financial stability and citizen welfare under realistic enforcement frictions, offering policy-relevant insights on the role of IFIs in countries with weak institutions.

International Financial Institutions play a critical role in lending to countries, especially during times of economic distress. For example, IMF members have access to financing through the General Resources Account (GRA) when facing balance-of-payments problems or sovereign debt crises. The GRA provides short-term financing at market-based interest rates that addresses liquidity needs and restores market confidence. Historically, GRA arrangements have been the IMF’s dominant lending channel¹. Between 1955 and 2025 the Fund approved 1094 GRA programs totaling roughly \$ 2,283 billion (in 2017 U.S. dollars); the vast majority of these were extended to emerging-market economies. Within the GRA framework, the most commonly used lending arrangements are the Extended Fund Facility (EFF), the Stand-By Arrangement (SBA), and the Flexible Credit Line (FCL). EFF and SBA programs are the Fund’s standard instruments, available to all members experiencing external imbalances. These programs typically span one to three years and are conditioned on the adoption of specific policy targets, known as Quantitative Performance Criteria (QPCs), along with extensive quarterly performance criteria and continuous monitoring. In contrast, FCL arrangements are reserved for countries with exceptionally strong fundamentals and carry no ex-post conditionality. Introduced in the aftermath of the 2008 global financial crisis, the FCL was designed to function as a precautionary credit line—intended to bolster market confidence and provide insurance against external shocks—without requiring countries to meet ongoing performance benchmarks or policy reforms during the program.

Figure 1 displays the evolution GRA commitments to EMs, both in terms of the number of programs approved (top panel) and the amounts committed (bottom panel, in constant 2017 U.S.

¹The Poverty Reduction and Growth Trust (PRGT) provides concessional financing targeted at low-income countries (currently on highly concessional terms, including near-zero interest rates). PRGT programs differ from GRA arrangements in pricing, eligibility, and program objectives (they emphasize poverty reduction and institution building), and are therefore not the focus of this paper. Over 70% of all the IMF commitments approved since 1955 have been provided through the GRA.

Figure 1: IMF commitments over time



Notes: The data is obtained from the IMF Financial Data Query Tool. Includes programs funded from the IMF's General Resource Account (non-concessional financial assistance). SDR to U.S dollars conversion rates obtained from FRED (CCUSMA02IFQ618N). Dollar amounts adjusted for inflation using the total non-defense deflator from the Office of Management and Budget's Historical Tables (Table 10.1).

dollars). The top figure shows the majority of agreements are approved through the EFF/SBA facilities (navy blue bars). We can observe a notable surge in the early 1980s (coinciding with LATAM sovereign debt crises), as well as a second wave in the 1990s during the transition crises in Eastern Europe and Asia. During the COVID-19 crisis, commitments increased sharply to address the unprecedented global shock. While the number of FCL arrangements is relatively small (maroon bars), the bottom figure makes clear that FCL commitments tend to be much larger in size. For example, during the aftermath of the global financial crisis of 2007-09, a handful of countries received very large precautionary FCL commitments, significantly increasing the total volume of GRA potential financing in those years. Countries with access to the FCL can draw on the credit line if needed, but are under no obligation to do so. In practice, this means that large FCL commitments often remain undisbursed. To date, only one country—Colombia in 2020—has opted to draw on its FCL, and even then, it utilized only about 30% of the committed amount. This underscores the facility’s role in providing confidence and liquidity assurance, rather than immediate funding.

Table 1 shows, for a set of EMs between 1994 and 2023, the following variables: debt to GDP ratios, EMBI+ spreads, default frequency, GDP growth and two measures of institutional strength: horizontal accountability (HA) and Representation and Accountability (R&A). HA is a proxy for institutional checks and balances, obtained from the v-Dem dataset. R&A captures public perceptions about (i) the extent to which citizens can participate in selecting their government through free elections, freedom of expression, freedom of association, and a free media (also known as ‘vertical accountability’) and (ii) de-facto checks and balances. It is obtained from the World Bank’s Worldwide Governance Indicators². Consistent with IMF eligibility criteria, countries with access to FCL exhibit higher levels of HA (averaging around 1.0 compared to 0.3) and R&A (0.3 vs 0.4). This variable, obtained from the V-Dem dataset, captures the extent to which political institutions constrain executive authority and ensure oversight by independent bodies such as courts, legislatures, or audit institutions. Countries with higher accountability are more likely to sustain prudent macroeconomic policies, and therefore to qualify for contingent access to liquidity through instruments like the FCL. The table shows that FCL-eligible countries have, on average, substantially lower public debt levels (about 37% of GDP vs. 50%) and lower sovereign spreads (2.5% vs. 5.5% on EMBI+), indicating better creditworthiness and market access. Moreover, while the default frequency among non-FCL countries averages over 4%, FCL countries have not experienced any sovereign default episodes during the sample period (1994–2023). Interestingly, real GDP growth rates are similar across both groups. The bottom portion of the table reports the same summary statistics, disaggregated into pre- and 2008-on periods, to account for the introduction of the FCL. Strikingly, emerging markets with weaker institutions (left columns) exhibited higher debt levels, elevated spreads, and more frequent defaults even before the creation of the FCL. This pattern

²www.govindicators.org, accessed 11/2023. This variable is normalized between 0 and 1. There is less variability than in HA because most countries in our sample are democratic during this period, having similar VA scores.

Table 1: Summary Statistics by FCL Access and Period

Variable	No access to FCL		Access to FCL	
	Mean	Std. Dev.	Mean	Std. Dev.
<i>Full Sample (1994–2023)</i>				
Representation and Accountability	0.3	(0.6)	0.4	(0.5)
Horizontal Accountability	0.3	(0.7)	1.0	(0.6)
Real GDP growth	3.5	(4.2)	3.2	(3.5)
Gross public debt, % of GDP	49.6	(23.0)	37.0	(14.3)
Spreads (EMBI+)	5.5	(7.0)	2.5	(1.7)
Default Frequency	4.4	(20.5)	0.0	(0.0)
<i>Pre-2008</i>				
Real GDP growth	4.1	(4.1)	3.7	(2.8)
Gross public debt, % of GDP	51.3	(23.3)	34.5	(12.3)
Spreads (EMBI+)	7.3	(10.0)	3.3	(2.3)
Default Frequency	8.5	(28.1)	0.0	(0.0)
<i>2008-on</i>				
Real GDP growth	3.1	(4.3)	2.9	(3.9)
Gross public debt, % of GDP	48.5	(22.8)	38.7	(15.4)
Spreads (EMBI+)	4.5	(4.2)	2.0	(0.9)
Default Frequency	2.0	(14.0)	0.0	(0.0)

Notes: Sample means and standard deviations (in parentheses) for emerging-market countries with and without access to the IMF’s Flexible Credit Line (FCL), split by period. Total sample 1993-2023. “Default frequency” is expressed as the percentage of country-year observations in which a sovereign default occurred. “Horizontal Accountability” is a governance indicator obtained from V-DEM. “Representation and Accountability” is from the World Bank’s Worldwide Governance Indicators. Access to FCL: Chile, Colombia, Mexico, Peru and Poland. No access: Argentina, Brazil, Dominican Republic, Ecuador, El Salvador, Malaysia, Malaysia, Panama, Paraguay, Russia, South Africa, Turkey, and Uruguay.

suggests that these characteristics were not driven by the adoption of the program itself, but rather reflect structural differences that likely shaped both program eligibility and subsequent economic performance.

To understand how the institutional design of IFI lending programs—particularly the structure of QPCs—influences sovereign borrowing behavior, default risk, and citizen welfare, we embed IFI interventions into a dynamic political economy model of sovereign default. We build on the model developed by Azzimonti and Mitra (2023b), which describes how representatives from various groups with veto power negotiate over national taxes, public expenditure, international borrowing levels, and default decisions. In this model, a group leader, randomly selected to make a policy proposal, requires the support of a ‘minimum winning coalition’ (*mwc*) to enact policy. To secure this support, the proposer may engage in corruption spending (in the form of targeted regional transfers, bribes, subsidies, or policies benefiting specific non-economic interests). These expenditures,

though costly, are designed to benefit particular groups and depend on the country’s institutional strength. We first show that, in the long run, countries with weaker institutions—a lower *mw* size—endogenously engage in higher levels of corruption-related spending, financed in part through increased borrowing. In equilibrium, this results in a higher probability of default. Azzimonti and Mitra (2023a) and Qian and Roch (2024) provide empirical evidence relating institutional weakness to higher default risks. The former considers specifically the horizontal accountability variable, whereas the latter focuses on other complementary measures such as the rule of law and corruption control. Azzimonti and Mitra (2025) analyzes the effects of HA on EMBI+ spreads in a sample similar to the one in Table 1 (both in time-span and country coverage), and find that greater HA is associated with lower spreads.

We then incorporate IFI lending following Boz (2011a), in which financing is provided at a predetermined price schedule. We first consider a program which does not impose conditionality rules, like the FCL, but assume that it is available to all economies³. We show that countries benefiting from positive TFP shocks manage to avoid default but, those with weak institutions continue accumulating debt irresponsibly, often postponing necessary fiscal adjustments, and substituting more expensive private debt with cheaper IFI debt. Countries with m_L and positive TFP shocks may appear stable in the short term but remain vulnerable to future crises. Conversely, those facing negative shocks are driven into default due to already fragile fiscal positions (e.g. high debt levels), entering a vicious cycle of borrowing and default that exacerbates their sovereign debt crises over time. This is the result of the short-sightedness introduced by politics: policymakers prefer to use IFI debt to fund corruption rather than to fix their budget. Through Monte Carlo simulations, we find that the introduction of an IFI lending program without conditionality leads to a higher incidence of default compared to the benchmark scenario for m_L countries. This is to be expected, as IFI lending increases fiscal capacity even in default, increasing the outside option to defaulting, and fuels corruption spending in booms, keeping the country near unsustainable debt levels. Countries with strong institutions (m_H) face significantly lower spreads and accumulate less debt. For these economies, it is optimal to refrain from engaging in targeted transfers, which preserves fiscal space and credibility. As a result, defaults are exceedingly rare. The availability of IFI lending does not alter this equilibrium: the program is seldom, if ever, accessed in the ergodic set, as well-governed economies have little need for external support. This is consistent with the empirical finding that FCL commitments are typically undisbursed.

In our model, “impatience” does not drive the results, as in the sovereign default literature. Instead, it arises from the political incentives driving corruption spending. This distinction is crucial, as it implies that, unlike in Boz (2011a)’s framework, where addressing conditionality rules required overhauling the entire electoral system (e.g. by lowering the discount factor), our model allows for actionable conditionality rules that target the root cause directly. By focusing

³The program is ‘like’ FLC because rather than considering a credit line in which the country pays an upfront fee, we assume a price schedule closer to the one in the other GRA programs.

on corruption-driven fiscal mismanagement, these rules—such as QPCs tied to anti-corruption measures—are both practical and enforceable within the framework of an IFI lending program⁴. This makes our approach more policy-relevant, as it provides a feasible pathway to mitigate the adverse effects of political frictions on sovereign debt sustainability without requiring structural changes to the political system.

The anti-corruption conditionality rule is modeled as a QPC attached to the IFI loan that restricts the diversion of public resources toward corrupt or politically motivated uses, ensuring that borrowed funds support legitimate fiscal needs. Our results show that when this conditionality is effectively enforced—under the full monitoring regime—it significantly enhances stability following adverse shocks. In our simulations, a negative productivity shock of half a standard deviation raises the share of defaulting economies from 17 percent to 23 percent in the absence of IFI lending. By contrast, with full monitoring, the proportion of defaults remains virtually unchanged on impact and gradually declines over time as debt stabilizes at lower levels. Thus, strict anti-corruption oversight makes the program effective in mitigating default risk and promoting fiscal discipline.

Despite these positive outcomes, the simulations also reveal persistent moral hazard challenges. Even with monitoring, some countries benefit from the lower borrowing costs and improved investor confidence that IFI programs bring, leading them to borrow more than they would in the absence of the program. While conditionality helps reduce defaults, it does not eliminate the incentives for irresponsible fiscal behavior among countries that are not directly facing negative productivity shocks (and hence, do not seek borrowing from the IFIs). The IFIs therefore face a trade-off: In a country with weaker institutions, lower current defaults lead to higher borrowing in the absence of IFI lending, leading to higher chances of future default and an associated higher chance of IFI borrowing. This may lead to repeated use of IFI resources making countries perpetually depend on them to ensure the stability of the international payments system. To address these challenges, we also examine a debt-ceiling conditionality paired with an austerity program aimed at reducing the debt-to-GDP ratio by 5% per period until the ceiling is reached. While this rule curbs borrowing and mitigates moral hazard, it is less effective at preventing defaults compared to anti-corruption conditionality under full monitoring. While debt-ceiling rules target borrowing more directly, anti-corruption conditionality more effectively addresses the root causes of default and yields better welfare outcomes.

2 Related Literature

Prior literature has paid surprisingly little attention to how IFI conditionality—not just IFI financing per se—reshapes sovereign borrowing, default risk, and welfare in politically constrained emerging markets. This paper fills that gap by embedding IFI programs and conditionality rules

⁴IFI lending can also include structural benchmarks, which are long-term reforms aimed at improving governance, transparency, or tax administration. These typically require legislative approval.

into a sovereign-default model with dynamic bargaining, where incumbent rulers can divert resources to politically valuable “pie” allocations (clientelism/corruption). A small number of previous studies have explored how the introduction of non-defaultable debt influences default incentives. Hatchondo et al. (2017) shows that non-defaultable debt can temporarily reduce spreads and default risk, though its long-term impact is constrained. In contrast, our findings indicate that non-defaultable debt actually *increases* spreads and default rates. A key difference is our explicit consideration of political frictions, emphasizing how non-defaultable debt with conditionality rules can address these distortions, as inspired by Boz (2011b), who first introduced IFI debt with conditionality in a sovereign default framework. Unlike Boz (2011b), who captures impatience through a reduced-form discount factor, we model a political economy environment that generates a realistic interplay of government policies and IFI lending. A notable contribution of our paper is that, because over-borrowing is driven by a desire to fund corruption, conditionality rules can be specifically tailored to mitigate these political distortions directly.

Our paper also contributes to the extensive literature on fiscal rules. Azzimonti et al. (2016), for example, study a deficit rule in a legislative bargaining model similar to ours but abstract from sovereign default. Other work, such as Chatterjee and Eyigungor (2015), examines the effects of introducing seniority structures on sovereign debt, while Hatchondo et al. (2016) explores how debt covenants can penalize excessive borrowing and address debt dilution. Although these are not explicitly fiscal rules, they complement fiscal frameworks aimed at reducing deficit bias. Similarly, Hatchondo et al. (2022) compare debt brakes with spread brakes in a heterogeneous union of countries, finding that spread brakes are welfare-enhancing and more effective than debt brakes. Our work also relates to Beetsma and Uhlig (1999), which examines the role of borrowing limits, such as the EU Stability and Growth Pact, in monetary unions with short-sighted policymakers, and to Halac and Yared (2014) and Halac and Yared (2018), which study deficit bias and fiscal rules in both single- and multi-country settings. Similarly, Chari and Kehoe (2008) highlight the importance of fiscal rules in addressing time inconsistency problems in monetary unions. While we abstract from monetary policy and inflation, we focus on conditional debt-reduction rules akin to the approach in Esquivel and Samano (2024).

A key difference between our focus and these studies is that rather than analyzing permanent structural changes in the form of long-lasting fiscal rules, we examine conditionality rules associated with IFI lending, specifically Quantitative Performance Criteria (QPCs). These rules are binding only when a country borrows from the IFI, making them inherently temporary and contingent. We consider two QPC rules: an anti-corruption rule that restricts government resources allocated to corruption spending and a debt-ceiling rule tied to austerity measures that gradually reduce the debt-to-GDP ratio. This focus allows us to investigate how these conditionality rules interact with political frictions and corruption, distinguishing our work from studies that abstract from these factors or assume permanent fiscal frameworks.

The rest of the paper is organized as follows. Section 3 introduces the economic and political environments. The quantitative evaluation is described in Section 4, which calibrates the economy and describes its behavior in the long run. IFI lending programs are introduced in Section 5, while Section 6 concludes.

3 Model

The economic environment builds on the framework in Azzimonti and Mitra (2023b); to clarify the mechanisms, we first present the baseline model without IFI lending and then introduce IFI programs and conditionality in subsequent sections of the paper.

3.1 Economic Environment

There is a domestic sector with households and competitive firms, a government that sets fiscal policy, and international investors who buy government debt. Time is discrete. In the domestic economy, there are infinitely lived agents divided into n each seeking to secure a share of public resources—referred to as the pie, π_i . The pie represents the portion of the government budget that can be allocated discretionarily by the incumbent. This allocation may take many forms: targeted transfers to politically influential groups, regional or sectoral spending biased toward specific constituencies, ideological policies that favor one group over another (e.g., gun control, same-sex marriage, abortion rights), or outright rent extraction through nepotism and bribes. Thus, π_i captures both redistributive and corruptive uses of fiscal resources. In economies with strong institutions, most of the pie is allocated transparently through legitimate redistribution; in weaker institutional settings, a larger share can be diverted for private or political gain. In our model, it is this discretion over the pie that generates the scope for corruption and political distortions. Agents in group i derive utility from private consumption c , labor l , a pure public good g , and the flow of goods and services obtained from π_i ,

$$U(c, l, g, \pi_i) = u(c, l) + \eta v(g) + \pi_i. \quad (1)$$

The constant η represents the weight of public goods relative to the consumption-leisure aggregate. We assume that

$$u(c, l) = \frac{1}{1 - \sigma} \left(c - \frac{l^{1+\gamma}}{1 + \gamma} \right)^{1-\sigma} \quad \text{and} \quad v(g) = \frac{g^{1-\sigma}}{1 - \sigma},$$

where $\sigma > 0$ captures the degree of risk aversion and $\gamma > 0$ represents the Frisch elasticity of labor supply. Agents discount the future at a rate β . Similar to small open economy models of sovereign default, we assume imperfect capital markets prevent individuals from using assets to smooth aggregate fluctuations, implying $c_t = (1 - \tau_t)w_t l_t$, with w_t as the economy-wide wage rate

and τ_t denoting a distortionary tax on labor income⁵. The individual labor supply and optimal consumption decisions are static and satisfying,

$$l_t^* = [w_t(1 - \tau_t)]^{\frac{1}{\gamma}} \quad \text{and} \quad c_t^* = (1 - \tau_t)w_t l_t^*. \quad (2)$$

Firms produce a single non-storable consumption good, y , using the linear technology

$$y_t = h(z_t, d_t)l_t.$$

Aggregate TFP shocks z_t follow a first-order Markov process $\mu(z_{t+1}|z_t)$. The function $h(z, d)$, increasing in z , takes different forms in states of repayment ($d = 0$) and default ($d = 1$). Firms are competitive and maximize profits, yielding the equilibrium wage rate $w_t^* = h(z_t, d_t)$. Equilibrium output given policy is thus $y_t^* = h(z_t, d_t)l_t^*$.

The government collects revenue $Rev(\tau_t) = \tau_t y_t^*$, which is allocated towards the provision of public goods and corrupt public practices (e.g., the ‘pie’). Additionally, if the government maintains good credit standing ($\Omega_t = 1$), it can issue one-period non-contingent real bonds in international markets⁶. The net funds raised in capital markets are $q_t b_{t+1} - b_t$, where q_t is the market price of one unit of debt and b_{t+1} is the quantity of new bonds issued. The government budget constraint is

$$Rev(\tau_t) - g_t + (1 - d_t)[q_t b_{t+1} - b_t] \geq \sum_i \pi_{i,t}, \quad (3)$$

with $\pi_{i,t} \geq 0$ and $\sum_i \pi_{i,t}$ representing the total size of the pie. If the government defaults, it is excluded from international credit markets for a stochastic number of periods, determined by probability θ . In default, $b_{t+1} = 0$, credit standing is downgraded to $\Omega_t = 0$, and expenditures are financed solely with $Rev(\tau_t)$. The total amount of resources that can be diverted from the budget is thus

$$\Pi_t = \begin{cases} Rev(\tau_t) - g_t + (1 - d_t)[q_t b_{t+1} - b_t] & \text{if } \Omega_t = 1 \\ Rev(\tau_t) - g_t & \text{if } \Omega_t = 0, \end{cases} \quad (4)$$

with the government budget constraint collapsing to $\Pi_t \geq \sum_i \pi_{i,t}$. In equilibrium, this constraint will hold with equality.

International lenders are modeled following Arellano (2008): An infinite number of identical risk-neutral lenders can borrow and lend at a constant risk-free rate r and buy government debt at a price q_t . In equilibrium, lenders earn no profits, so

⁵Alternatively, we could assume that firms pay distortionary taxes on revenues, yielding a similar formulation in equilibrium.

⁶See Azzimonti and Mitra (2025) for an extension that allows long-term bonds; despite the different debt structure, the main qualitative and quantitative findings reported here are broadly robust. This is due to the fact that the economy needs to be re-calibrated and even though specific parameters are different the final outcomes are fairly unchanged.

$$q_t^* = \int_{(z_{t+1}, m_{t+1}) \in \Psi_{t+1}} \left[\frac{1 - d_{t+1}}{1 + r} \right] \partial z_{t+1} \partial m_{t+1} | (z_t, m_t), \quad (5)$$

where d_{t+1} is tomorrow's equilibrium default choice and $\Psi_{t+1} = \{(z_{t+1}, m_{t+1}) : d_{t+1} = 0\}$ is the repayment set for the government. The variable m_t represents political shocks, described in detail in the following section.

The expressions above determine a competitive equilibrium given government policy. Corresponding equilibrium variables are denoted with asterisks. The next section defines how policy is determined.

3.2 Political Environment

Each group in society has a politically influential leader who holds a seat at the bargaining table where policies are decided. Policy proposals require the support of a sufficient number of leaders, $m_t \leq n$, to be implemented. This grants each leader some veto power and incentivizes the distribution of political favors. The term m_t represents the size of the 'minimum winning coalition' (mwc) at period t . The value of m_t can change stochastically over time, reflecting the evolving political landscape of a country. We assume m_t follows a first-order Markov process with transition probability $p(m_{t+1}|m_t)$. Temporary shocks to m_t are seen as fluctuations in the balance of power due to electoral outcomes or varying political importance of certain groups over time. The long-run value $\bar{m}$ captures institutional strength.

The bargaining protocol is as follows: At the beginning of each period, group leaders convene, and one is randomly chosen to make a policy proposal. Since individuals are identical across groups, the identity of their leader is irrelevant. A proposal is defined as

$$\Phi_t = \begin{cases} \{\tau_t, g_t, b_{t+1}, d_t, \pi_{1,t}, \pi_{2,t}, \dots, \pi_{n,t}\} & \text{if } \Omega_t = 1 \\ \{\tau_t, g_t, \pi_{1,t}, \pi_{2,t}, \dots, \pi_{n,t}\} & \text{if } \Omega_t = 0. \end{cases} \quad (6)$$

If the proposal secures the support of m_t leaders, the policy is implemented. If not, leaders proceed to the next proposal round with a new randomly chosen proposer. If no agreement is reached after $T \geq 2$ proposal rounds, an outsider is appointed to select a reference (symmetric) policy.

We focus on a Markov-perfect equilibrium, where variables depend on payoff-relevant state variables and are independent of the identity of the proposer. The aggregate state variables at the outset of any period are the stock of debt b_t , the TFP shock z_t , the size m_t of the mwc, the credit standing $\Omega_t \in \{0, 1\}$. It is useful to define the exogenous state space $\mathbf{s}_t^e = \{z_t, m_t, \Omega_t\}$ and $\mathbf{s}_t = \{\mathbf{s}_t^e, b_t\}$, the full state-space. In equilibrium, variables depend on endogenous policy Φ_t and the current state $\mathbf{s}_t$.

As in Azzimonti and Mitra (2023b), we restrict attention to symmetric MPEs. Given that the other $n - 1$ group leaders are identical, the $m_t - 1$ coalition members required to pass the proposed

policy are randomly chosen from among them. To gain their consent, the proposer offers favors $\pi_{i,t} = \pi_t$ to members of the selected minimum winning coalition and $\pi_{i,t} = 0$ to those outside it. This follows from symmetry. The proposer retains $\pi_{p,t} = \Pi_t - (m_t - 1)\pi_t$. Because the problem is stationary, policy rules will be independent of time t . In what follows, we denote future periods with primes.

At a given period, in any round $k \in \{1, 2, \dots, T\}$, the proposer chooses $\Phi^k = \{\tau^k, g^k, \pi^k\}$ to maximize

$$\begin{aligned} & \max_{\Phi^k} \left\{ V^{Pk}(\mathbf{s}, \Phi^k) \equiv U(c^*, l^*, g^k) + \pi_p^k + \beta \mathbb{E}_{\mathbf{s}'} J(\mathbf{s}', \Phi' | \Phi^k) \right\} \\ \text{s.t. } & V^{Ik}(\mathbf{s}, \Phi^k) \geq J^{k+1}(\mathbf{s}, \Phi^{k+1}) \\ & \pi_p^k = \Pi^k - (m - 1)\pi^k \geq 0 \\ & \tau^k, g^k, \pi^k \geq 0. \end{aligned} \tag{7}$$

The first equation is an incentive compatibility constraint (IC): the value of accepting the proposal for members of the *mwc*, $V^{Ik}(\mathbf{s}, \Phi^k)$, must be at least as large as the value of rejecting it, $J^{k+1}(\mathbf{s}, \Phi^{k+1})$. In round $k + 1$ policies are Φ^{k+1} and the status of the group leader may change (e.g. become a proposer or not be part of the *mwc*). The second equation guarantees the feasibility of government policies by ensuring that the diverted pie Π^k is sufficient to cover the cost of providing political favors to the coalition members. Favors must be non-negative. The expected future value in the following period is $J(\mathbf{s}', \Phi' | \Phi^k)$, conditional on the current proposal being accepted. Note that equilibrium c^* and l^* are evaluated at policy Φ^k .

Since members of the *mwc* obtain π in political favors, the value of accepting the proposal for anyone in the *mwc*, $V^{Ik}(\mathbf{s}, \Phi^k)$, satisfies

$$V^{Ik}(\mathbf{s}, \Phi^k) = U(c^*, l^*, g^k) + \pi^k + \beta \mathbb{E}_{\mathbf{s}'} J(\mathbf{s}', \Phi' | \Phi^k).$$

If the proposal is rejected, a new proposer is elected in round $k + 1$ with probability $\frac{1}{n}$. If a member of round- k 's minimum winning coalition mwc_k becomes a proposer, he/she will receive $V^{Pk+1}(\mathbf{s}, \Phi^{k+1})$ in the next round. The state space does not change, as all proposal rounds happen in period t . A member of mwc_k is chosen to be part of mwc_{k+1} with probability $\frac{m-1}{n}$, in which case they get $V^{Ik+1}(\mathbf{s}, \Phi^{k+1})$. With probability $\frac{n-m}{n}$, a member of mwc_k is not selected to be part of the mwc_{k+1} and gets instead $V^{Ok+1}(\mathbf{s}, \Phi^{k+1})$. Anyone outside of the *mwc* obtains

$$V^{Ok}(\mathbf{s}, \Phi^k) = U(c^*, l^*, g^k) + \beta \mathbb{E}_{\mathbf{s}'} J(\mathbf{s}', \Phi' | \Phi^k).$$

The continuation value of rejecting a proposal to any member of mwc_k , $J^{k+1}(\mathbf{s}, \Phi^{k+1})$, is computed by taking expectations over these three possibilities (where we abstract from the functions' arguments $\mathbf{s}$ and Φ^{k+1} to reduce notation).

$$J^{k+1} = \frac{1}{n} V^{P,k+1} + \frac{m-1}{n} V^{I,k+1} + \frac{m-n}{n} V^{O,k+1}. \quad (8)$$

Re-arranging the expression above,

$$J^{k+1}(\mathbf{s}, \Phi^{k+1}) = U(c^*, l^*, g^k) + \frac{\Pi^k}{n} + \beta \mathbb{E}_{\mathbf{s}'} J(\mathbf{s}', \Phi^k). \quad (9)$$

where Φ^{k+1} is the optimal policy of the next round's proposer (given any continuation value).

As shown in Appendix B.2 of Azzimonti and Mitra (2023b), the proposed policy tuple is accepted in the first round and the proposer's problem is equivalent to one where the welfare of the average mwc member is maximized,

$$\begin{aligned} \max_{\Phi} U(c^*, l^*, g) + \frac{\Pi}{m} + \beta \mathbb{E}_{\mathbf{s}'} J(\mathbf{s}') \\ \text{s.t. } \Pi \geq 0, \end{aligned} \quad (10)$$

with $J(\mathbf{s}')$ denoting the expected value of continuation utility for the proposer given that the next period's Markov-perfect equilibrium policy is $\Phi^*(\mathbf{s}')$,

$$J(\mathbf{s}') = U(c^*(\mathbf{s}'), l^*(\mathbf{s}'), g^*(\mathbf{s}')) + \frac{\Pi^*(\mathbf{s}')}{n} + \beta \mathbb{E}_{\mathbf{s}''} J(\mathbf{s}''). \quad (11)$$

4 Quantitative Evaluation

We solve the simplified proposer's problem given by equations (10) and (11), taking as inputs the equilibrium allocations from (2), bond prices from (5), and the government budget constraint (4). To isolate the role of institutions, we study two representative emerging-market economies that are identical in every structural parameter (preferences, technology, and TFP shock process) except for institutional strength. This is summarized by the long-run value of the size of the minimum-winning coalition, $\bar{m}$. One economy has strong institutions (a larger *mwc*), characterized by $\bar{m} = m_H$, while the other has weaker institutions, $\bar{m} = m_L$.

4.1 Parametrization

Each period represents a quarter. The risk-free interest rate is set to $r = 2.8\%$ (annualized), following the CBO forecast of the long-term value of the 3-month U.S. T-Bill. The discount factor, β , is set to match the inverse of the gross risk-free rate in the model $\beta = \frac{1}{1+r} = 0.9932$. This value is in line with the one assumed in standard macroeconomic models, and significantly lower than the one typically used in the sovereign default literature. The de-facto degree of impatience in our model depends not only on β but also on m/n . The risk aversion parameter is set to $\sigma = 2$ and the inverse of the Frisch elasticity of labor supply to $\gamma = 2$, also standard values.

The exogenous productivity shock is assumed to follow an AR(1) process $z_{t+1} = (1 - \zeta_z)\bar{z} + \zeta_z z_t + \epsilon_{t+1}^z$. We normalize its average $\bar{z} = 1$ and assume a mean zero ϵ_{t+1}^z with variance σ_z^2 . The parameters ζ_z and σ_z are determined by fitting the AR(1) process to real GDP per employed person in Argentina between 1993 and 2022, annually (HP-filtered using a parameter of 100). The fitted AR(1) process is discretized into 21 possible realizations of the productivity shock using the method by Tauchen and Hussey (1991). Table 2 reports the resulting ζ_m and σ_z values.

We consider $n = 20$ groups in the population. In both economies the *mwc* size follows the AR(1) process

$$m_{t+1} = (1 - \zeta_m)\bar{m} + \zeta_m m_t + \varepsilon_{t+1}^m,$$

with $\mathbb{E}[\varepsilon_{t+1}^m] = 0$ and $\text{Var}(\varepsilon_{t+1}^m) = \sigma_m^2$. The two economies differ only in the unconditional mean $\bar{m}$. We set $\bar{m} = m_H$ for the strong-institution case and $\bar{m} = m_L$ for the weak-institution case, with $m_H > m_L$. We keep the persistence ζ_m and shock volatility σ_m common to both. The parameters ζ_m and σ_m are estimated from the normalized ‘representation and accountability’ (R&A) series for Argentina during the period under consideration.

Table 2: Calibration Targets

Parameter	Value	Target	Description
ζ_z	0.925	Persistence Real GDP	AR(1)
σ_z	0.018	Volatility of Real GDP	
ζ_m	0.954	Persistence of R&A	AR(1)
σ_m	0.234	Volatility of R&A	
α_0	-0.769	$\mathbb{E}(\text{Spreads}) = 7\%$	Jointly Calibrated
α_1	0.808	$\frac{\text{Debt}}{\text{GDP}} = 53\%$	
η	1.2	$\frac{\text{Spend}}{Y} = 0.14$	
$\bar{m}_L$	5		

The probability of market re-entry following a default, θ , is set to 0.0385 as in Chatterjee and Eyigungor (2012)⁷. We also assume that default entails a loss in productivity following Chatterjee and Eyigungor (2012)⁸.

The parameters α_0 , α_1 , $\bar{m}_L$ and η are jointly calibrated. To do this, we minimize a quadratic loss function to match: average spreads, average debt to GDP, and the average value of government spending to GDP in the Argentinean data. The calibration delivers $m_L = 5$. We choose $m_H = 8$, about 60% larger than m_L . This is obviously not a calibration for the *H*-country, we are instead

⁷This is approximately equal to $\frac{1}{\theta} \cong 26$ quarters (6.5 years) of exclusion from financial markets after a default event.

⁸In particular, we assume that labor productivity takes the following form

$$h(z, d) = \begin{cases} z & \text{if } d = 0 \\ z - \max\{0, \alpha_0 z + \alpha_1 z^2\}, \alpha_1 \geq 0 & \text{if } d = 1 \end{cases} \quad (12)$$

creating a hypothetical world in which the only difference between the two economies is institutional strength. We use a large evenly spaced grid for debt ranging from 0 to 100, which is larger than the maximum value at which the government defaults.

4.2 The stationary steady state

We simulate the economy over time and report statistics of key variables in the steady state. To do this, we run the economy for a 100,000 periods, exclude the first 10,000, and average out the series corresponding to each variable in the remaining periods.

The first column of Table 3 gives long-run statistics for the weak-institution economy ($m_L = 5$); the second column shows the same for the strong-institution economy ($m_H = 8$). Higher values of $\bar{m}$ correspond to a larger size of the *mwc*, reflecting stronger institutional constraints on the group in power (see Azzimonti and Mitra (2023b) for details). As the number of veto players increases, the incentives to engage in corruption diminish. This can be seen by comparing the value of $\mu(\Pi/GDP)$ in the two economies: in the m_L economy the pie accounts for 4.5% of output, a significant number given that public spending is 13% of output. Under m_H the pie is just 0.2% instead.

Table 3: Business Cycle Moments in the Long Run

Moment	Weak Institutions $m_L = 5$	Strong Institutions $m_H = 8$
<i>Means, in %</i>		
Spreads	6.7	0.2
Periods of default	24	1
Rate of Default	3.5	0.16
g/y	12.7	13.4
c/y	82.3	86.0
Rev/y	17.7	14.0
b/y	49.1	44.8
Π/y	4.5	0.2
<i>Standard Deviations</i>		
$\sigma(y)$	1.1	1.2
$\sigma(g)/\sigma(y)$	0.20	0.16
$\sigma(c)/\sigma(y)$	1.1	0.9
$\sigma(Rev/Y)$	0.04	0.02
<i>Correlations</i>		
$\rho(g, y)$	0.64	0.90
$\rho(c, y)$	0.75	0.95
$\rho(b'/y, y)$	0.65	-0.14
$\rho(r - r^*, y)$	0.19	-0.02
$\rho(TB/y, y)$	-0.12	-0.14

Notes: $TB = \frac{I-X}{y}$. c, g, y are logged and HP-filtered. b denotes public debt.

Several regularities emerge from the table. First, weaker institutions raise borrowing costs and crisis incidence. Spreads average 6.7 percentage points in the weak-institution economy versus essentially zero in the strong-institution case. The m_L country defaults three to four times every 100 periods, as indicated by the ‘Rate of Default’ variable in the table. It is calculated as the proportion of periods in which a new default occurs. The ‘Periods in Default’ variable, calculated by averaging the number of periods in the simulation where $d = 1$, shows that the same economy is in a state of default 24% of the time. In contrast, in the m_H case, defaults are significantly less frequent. This outcome arises because the weak-institution economy carries a larger average debt stock (49.1% of GDP) than the strong-institution economy (44.8% of GDP) and hovers closer to the default region. Increasing the size of the minimum-winning coalition m reduces the private gains from diverting public resources: when m is large the ‘pie’ must be shared across more groups, so the distortionary tax cost of financing diversion outweighs its private benefits. Consequently, higher m lowers the equilibrium demand for debt to finance Π , narrows the default region, and thus compresses spreads. Importantly, this short-sightedness is not due to a lower discount factor (which is identical in both cases and equal to the inverse of $1 + r$ in the calibration), but rather stems from political incentives: we keep preferences, technology and the discount factor identical across the two economies, so differences in outcomes are attributable to institutional variation alone.

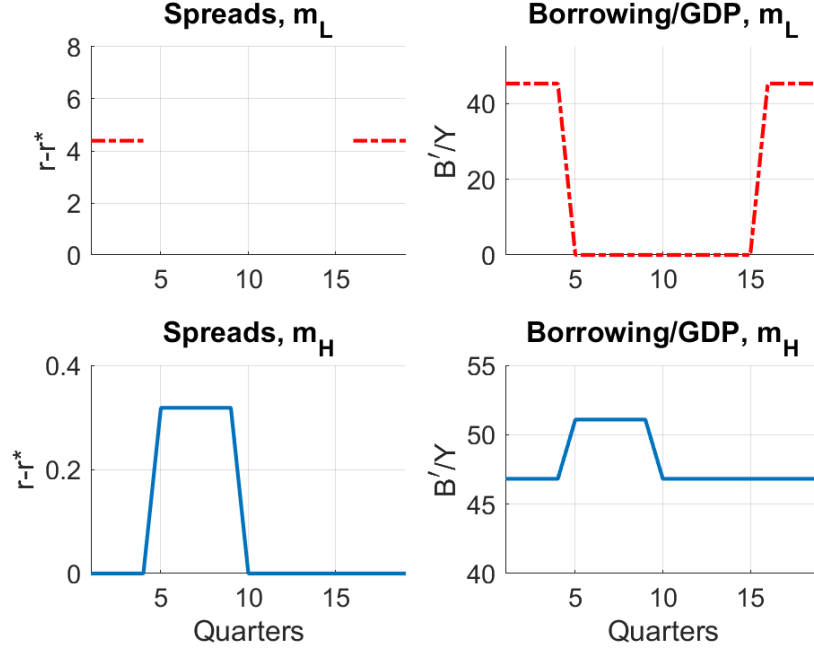
A second observation is that weak institutions amplify consumption volatility and distort policy responses. Relative volatility of taxes and public spending is higher with weak institutions: $\sigma(\text{Rev}/Y)$ and $\sigma(g)/\sigma(y)$ are larger in the weak-institution economy, and consumption is more volatile relative to output ($\sigma(c)/\sigma(y) = 1.1$ vs. 0.9). These patterns reflect the political incentive to use debt and tax resources for targeted transfers when checks are weak, which raises both the mean and the cyclical variance of fiscal variables.

Third, institutional quality changes the magnitude of key correlations. In the weak-institution economy the borrowing as a percentage of GDP is pro-cyclical— $\rho(b'/y, y) = 0.65$ —, reflecting a pattern of borrowing during good times and sudden stops or default in bad times. By contrast, the strong-institution economy displays a negative correlation— $\rho(by/y, y) = -0.14$ —, consistent with more prudent debt management and less pro-cyclical fiscal behavior. The trade balance (as percentage of output) is negatively correlated indicating that net borrowing is counter-cyclical in both economies, consistent with the data in EMs. As in the data, spreads are counter-cyclical in the m_H economy. In contrast, they are pro-cyclical in the m_L one. This happens because when the country does not default, it sharply reduces debt during recessions. Since debt is smaller, spreads decline as well (e.g. the decline in b' , which reduces spreads, more than compensates the decline in z , which increases them)⁹.

This is illustrated in Figure 3, which depicts an impulse response in which two economies, one with m_L (top panels, in dashed-red lines) and the other one with m_H (bottom panels, solid-blue

⁹This would not happen in a model with long-term debt or one with partial default. Solving for such models is beyond the scope of this paper, but they would be interesting extensions to it.

Figure 3: Response to large recession



lines) start out with an average shock and the long-run value of private debt to GDP associated to it. We introduce a large recession, akin the pandemic in period 4. We see that the m_L -economy defaults right away (debt goes to zero, and the spreads go to ∞ , and hence are not shown). The economy with stronger institutions is able to borrow and smooth out the shock, at the cost of paying higher spreads. However, since spreads are relatively low to begin with (practically zero, and jumping to 0.3%, relative to the spread of over 4pp of the other economy), this can be easily afforded.

Finally, although weak institutions generate higher average debt and more frequent crises, they also create a distinct adjustment dynamics: countries with weak checks tend to borrow aggressively in good times (inflating the ‘danger zone’) and either endure costly austerity or default in bad times. This mechanism — overborrowing driven by diversion opportunities — is central to the model’s policy implications for conditional IFI lending and fiscal rules, which are analyzed in the following sections.

5 International Financial Institutions (IFIs)

We model a short-term lending program following the guidelines in the EFF website (see [EFF website](#)). In the baseline experiments we assume that the economy is in steady state and the program is introduced in simulation period 6 and it is available for 3 years (or 12 model-periods). The short, finite horizon reflects the program’s role as temporary crisis support in response to a recession like the LATAM crisis, the Great Recession, or the Pandemic. Because it is temporary, it affects only

the economy’s medium-term transition dynamics; once the program expires the model reverts to the stationary environment described in Section 4.2 and the long-run equilibrium moments coincide with those reported earlier.

While the program is in place, a country may borrow from both: (i) private markets at price q_t , as in the previous section and (ii) the IFI at price $q_{I,t}$. We denote IFI debt with $b_{I,t}$. In contrast to private debt, which is defaultable, we assume that there are no commitment problems in repaying $b_{I,t}$. We borrow this assumption from Boz (2011a) who emphasized the IMF’s preferred creditor status and showed that major EMs almost always repay their IMF debt. The government budget constraint now becomes

$$Rev(\tau) + (1 - d) \left[qb' - b \right] + \textcolor{red}{q_I b'_I} - \textcolor{red}{b_I} \geq g + \sum_i \pi_i, \quad (13)$$

where the new terms are highlighted in red. The price schedule q_I is not determined in equilibrium, but instead follows a pre-determined formula described in detail in their website and summarized in Vasic-Lalovic et al. (2024). In particular, q_I is comprised of several components. The headline rate, or basic rate of charge, includes a fixed lending margin of 100 basis points, plus the variable Special Drawing Right (SDR) interest rate, which follows closely the risk-free rate¹⁰. Additionally, surcharges are applied on loans to countries whose outstanding credit surpasses specific thresholds based on loan size¹¹. Following Boz (2011a), we the cost of borrowing from the IFI depends on the risk-free rate and the amount borrowed from the IFI:

$$q_I(b'_I) = \frac{1}{1 + r + \kappa b'_I}. \quad (14)$$

Borrowing countries take this schedule as given.

We solve the model described in Section 3.2, but using the budget constraint eq. (13) instead. The price schedule follows eq. (14) and the government is now allowed to freely choose b'_I . All other details of the model, and in particular the bargaining protocol, remain the same. Computation becomes slightly more complicated because b_I introduces an additional state variable into the model. We further assume that m is constant for the duration of the program in order to reduce the curse of dimensionality. This is reasonable given that the m -shock process is extremely persistent for short-horizons such as the one under consideration, and adding an additional state would complicate

¹⁰The SDR rate is calculated weekly based on a weighted average of short-term government bond yields in the currencies of the SDR basket. The SDR basket includes the U.S. dollar, euro, Chinese renminbi, Japanese yen, and British pound. The specific bonds used are typically 3-month treasury bills or similar instruments from the corresponding countries or economic zones.

¹¹Borrowing costs also include a commitment fee—a deposit refunded if the country follows through with its agreement and all disbursements are made as planned—along with a service fee, which is charged each time new funds are disbursed. These are small and we will abstract from them at the moment. In addition, the basic rate of charge can theoretically be adjusted upward through the IMF’s ‘burden-sharing mechanism.’ In practice, this adjustment has been set to zero since at least January 2020. For details, see Vasic-Lalovic et al. (2024).

significantly the computation without adding significant quantitative insights. We set $\kappa = 1.42$, as in Boz (2011a). This value was chosen by the author to obtain an average IFI debt to GDP of about 5%, consistent with the data. Because the program is implemented for only 12 quarters, there is no change in the long-run equilibrium computed in Section 4.2. The medium-term evolution of variables is where the IFI program has a bite. We solve the model backwards, starting from the long run-no-IFI equilibrium, and simulate it assuming that countries start without IFI debt, that is $b_{I,0} = 0$. Agents, thus, take into consideration that m does not change for the duration of the program.

5.1 Debt management with IFI lending: no conditionality

Typically, IFI loans are conditional on the adoption of policy targets and continuation into the program requires that these targets are met in order for the funds to be disbursed. In the case of the IMF, Quantitative Performance Criteria (QPCs) typically involve quantifiable and measurable binding macroeconomic targets and are accompanied with frequent monitoring. In this section, we set aside conditionality rules to provide intuition on how these debt programs affect incentives, and then introduce a program that incorporates conditionality in the model in Section 5.4. In that sense, lending is closer to FCL than the EEF/SBA programs¹².

5.2 Impulse-responses

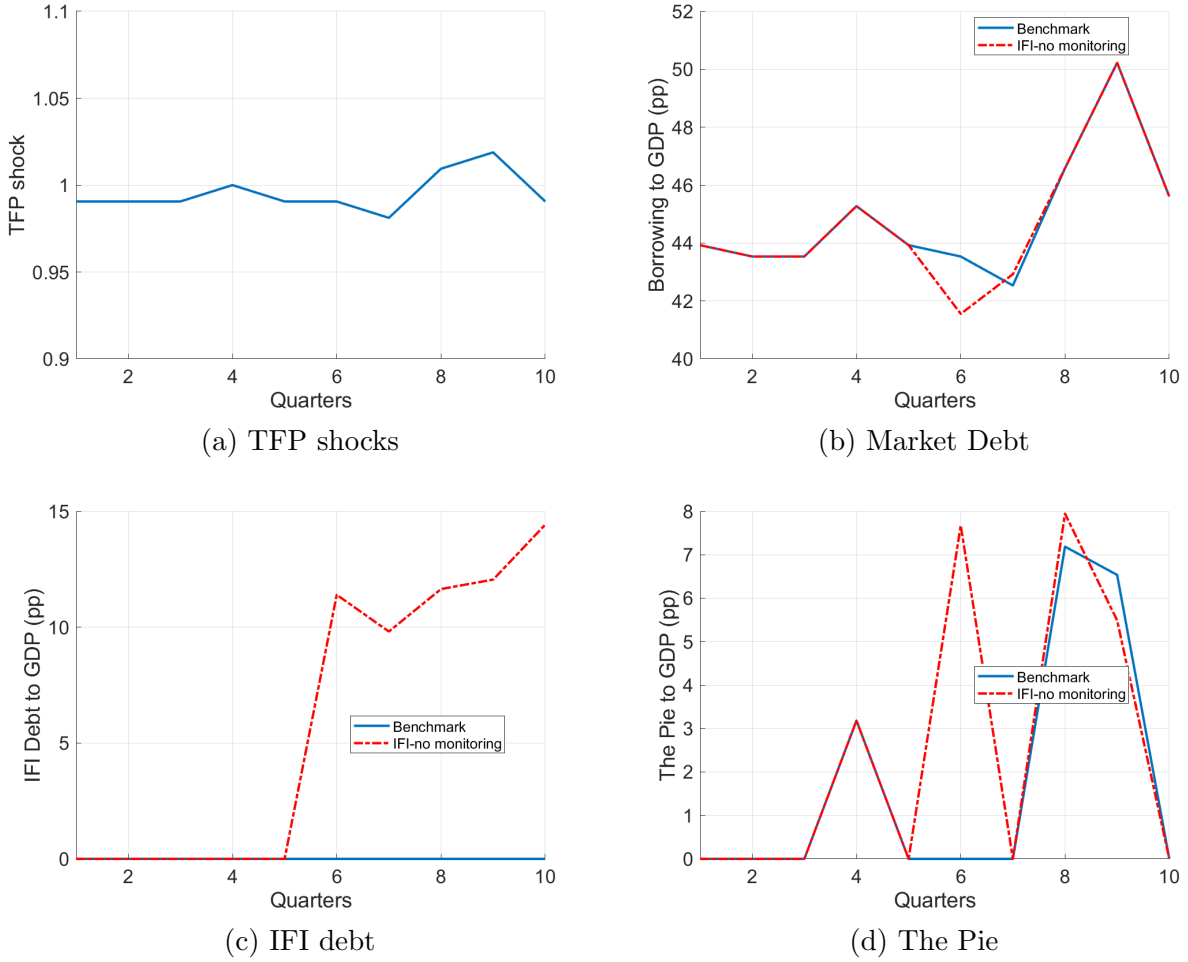
In order to understand how IFI affects incentives it is useful to simulate the m_L -economy for a given sequence of shocks and compare the behavior in the benchmark case where there is no IFI debt to that under an IFI program with no conditionality. We start the simulation for z and b equal to their long-run averages and $b_I = 0$ in both cases and keep it at that value until the IFI program is introduced in period 6. The sequence of shocks is displayed in panel (a) of Figure 4: z is relatively constant until period 8, when the economy enters a boom.

Panel (b) displays private debt, with solid-blue lines representing the benchmark and dashed-red the case in which there is an IFI program. Both lines are close to each other, with the exception of period 6: when the program starts, the government reduces private debt by about 2 percentage points and instead borrows from the IFI (see Panel c). Interestingly, b'_I jumps to 12% of GDP, more than compensating the decline in b . Rather than using the extra resources to drive down debt, the proposer increases Π steeply in period 6, as seen in Panel (d). With IFI debt, the pie becomes

$$\Pi = \begin{cases} \text{Rev}(\tau) - g + (1 - d)[qb' - b] + \textcolor{red}{q_I b'_I - b_I} & \text{if } \Omega = 1 \\ \text{Rev}(\tau) - g + \textcolor{red}{q_I b'_I - b_I} & \text{if } \Omega = 0. \end{cases} \quad (15)$$

¹²With the exception of the pricing schedule: rather than considering an up-front fee, we use the pricing function in eq. (14).

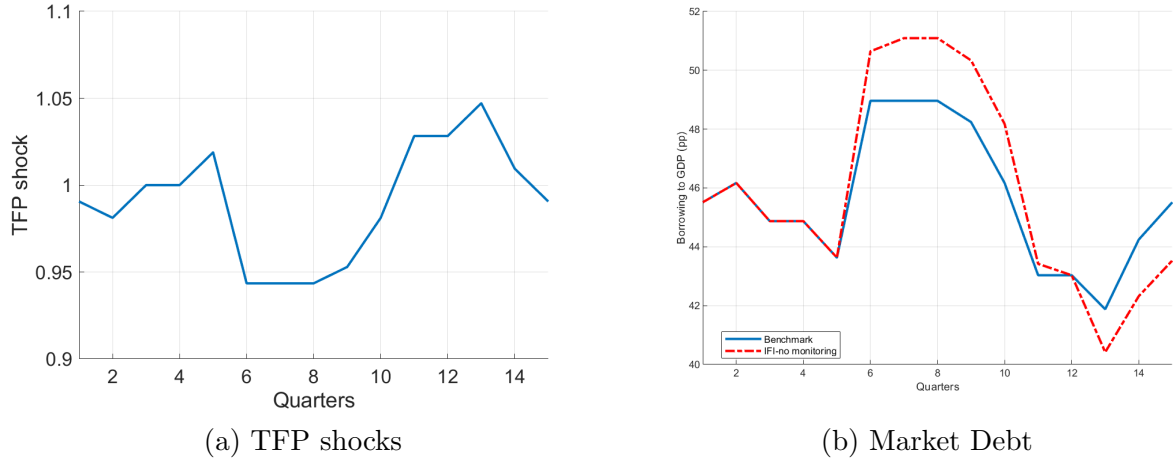
Figure 4: IFI lending (no conditionality), m_L economy



The extra term in red introduces moral hazard: IFI debt expands their borrowing capacity which means that more resources can be devoted towards corruption spending. Defaulting becomes cheaper because the outside option has gone up as the IFI becomes a ‘lender of last resort’ to some of these economies. Some countries choose to borrow from the IFI and default anyway. This illustrates an unintended consequence of the program: additional fiscal space encourages corruption spending when institutions are weak.

The m_H country, on the other hand, chooses not to borrow from the IFI in spite of a sharp decline in TFP when the program starts (e.g. $b_{I,t}=0 \forall t$). This happens because their preferred Π is zero in the benchmark case, and borrowing through the private markets is relatively cheap. The government does not need additional fiscal capacity to fund corruption-related expenditures. However, even though $b_{I,t} = 0$, the government increases private borrowing (see Panel b in Figure 5). Why is that the case? Because the existence of the program reduces the likelihood of a future default, and hence the interest rate that H needs to pay. As debt becomes cheaper, borrowing

Figure 5: IFI lending (no conditionality), m_H economy



from private markets go up. The situation reverses when the program is close to its end, as spreads increase again. The results presented in this section highlight why the FCL facility (which does not include conditionality clauses) is only available to countries with strong fundamentals. Moreover, as in the data, the facility is almost never used.

5.3 Monte-Carlo simulations

As we saw in the previous section, the availability of the program substantially alters the incentives faced by policymakers in countries with weak institutions. In the earlier example, the government leveraged IFI borrowing to finance targeted transfers, thereby relaxing its budget constraint. In some cases, however, the program's presence may even *induce* defaults that would not have occurred otherwise. This counterintuitive outcome arises when a country is already near the default threshold: access to IFI debt improves the outside option of defaulting—by increasing the resources available post-default—thereby tipping the balance in favor of strategic default. Because there is a series of potential outcomes that depend on initial conditions (e.g. the level of public debt) as well as subsequent realizations from the shock, it is useful to analyze a large number of simulations in order to study the average behavior of economies with similar fundamentals. To that end, we run a Monte Carlo simulation with 20,000 different possible paths of z following the AR(1) process described in Section 4.1, and compute the equilibrium for each of these plausible cases in the m_L -economy. We start z_t at values consistent with the long-run distribution¹³ and simulate the economy for 1000 periods for each one of the 20,000 plausible paths. For each of the economies, we create a simultaneous negative shock of 0.5 standard deviation magnitude in period t and study

¹³This is important. If we start all simulations at $\bar{z}$ we have most periods in the simulation with ‘average’ realizations, rather than those that are more likely to happen in economies such as these in the stationary distribution.

two scenarios: one without IFI lending and another one where the program is introduced at t . All economies recover from the recession along the AR(1) path. As before, we assume that the program lasts 12 periods, at which point any due IFI debt must be fully repaid. We then average out, in each quarter, the resulting time series across the alternative 20,000 scenarios. The resulting averages across simulations are shown in Figure 6. We plot the last 17 periods of the simulation, so ‘period 1’ corresponds to the average across economies which are all in the ergodic set. ‘Period 6’ is when IFI is introduced and ‘period 17’ when the program ends.

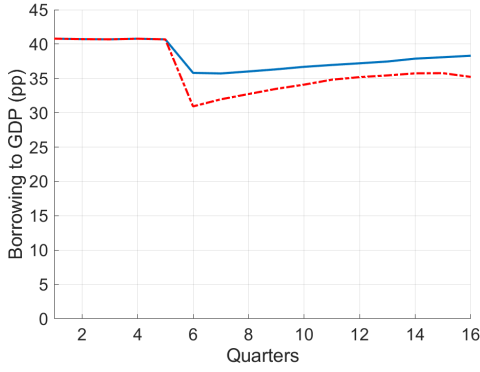
Panel (a) shows the evolution of average debt/GDP ratios at each point in time across synthetic economies that are still active in capital markets¹⁴. Panel (b) illustrates the evolution of b'_I/y , assuming the program is introduced in $t = 6$. There is significant uptake in the first period of the program, with the country borrowing averaging out well above 6% of GDP. This happens because b'_I is cheap in the first couple of quarters where the country has zero holdings (so surcharges are minimal), implying that q_I is high. After period 8, holdings trend downward, since all outstanding debt must be fully repaid by period 17. Countries are substituting private debt for IFI debt, as seen by the steep decline in b'_I/y , depicted in dotted red in Panel (a). The decline is about 5pp lower than in the benchmark model, depicted in solid blue in the same panel. Countries are taking advantage of the fact that IFI rates are lower than those for private debt. Over time, countries borrow less through the IFI and replace it with private debt, the lines move close to each other as they converge to the original steady state.

Panel (c) displays the average spread over time. Following the onset of the recession, spreads decline in both scenarios—with and without IFI debt. This outcome reflects our assumption that all economies experience lower TFP realizations (on average, a half-standard deviation decline in z). Since countries face borrowing constraints, those that avoid default are forced to reduce borrowing (as shown in Panel a). This deleveraging leads to lower credit risk and, consequently, lower spreads in subsequent periods. The simulated default probability is shown in Panel (d), measured as the share of economies in default at each point in time. In the benchmark case—depicted by the solid blue line, where countries lack access to IFI support—23% of the simulations result in default following the shock, a marked increase relative to the 17% default rate in the pre-shock (ergodic) distribution¹⁵. The economies that manage to avoid default do so largely thanks to favorable TFP shock realizations. Introducing an IFI program with no conditionality when the bad shock hits *increases* defaults to over 30%. Moreover, the proportion of countries in default remains

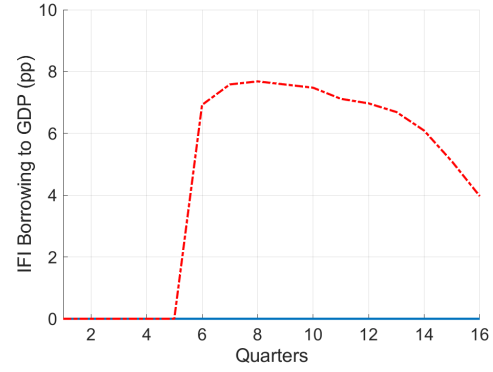
¹⁴When an economy defaults, it is excluded from capital markets and it is *not* incorporated in the reported averages. Otherwise, we would be artificially generating declining debt levels over time, simply due to the assumption that once an economy defaults, debt is set to zero (which does not happen in real life, as there are non-trivial renegotiation and haircuts). Hence, the figure must be understood as the most likely scenario assuming that the economy was not hit by bad enough shocks that its government would find it beneficial to default and exit the market. In other words, there is some ‘survivor bias’.

¹⁵Note that 17% defaults do not imply new defaults. They are the combination of both new and pre-existing defaults in any period in the ergodic distribution. By this logic, *new defaults* rise by 5% when the shock hits.

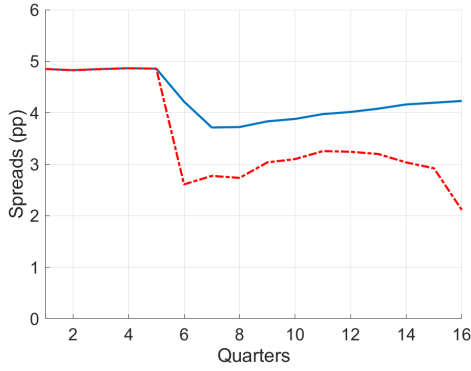
Figure 6: Monte Carlo (no conditionality), m_L economy



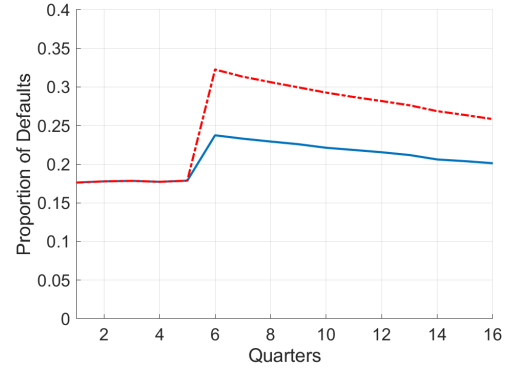
(a) Market Borrowing



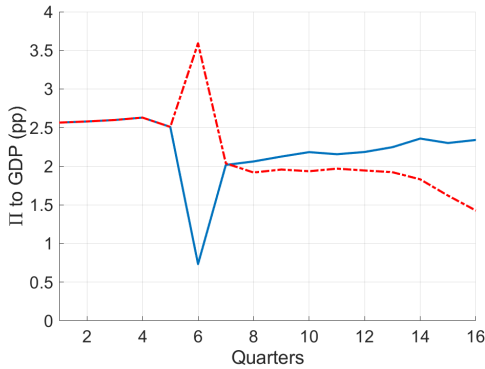
(b) IFI Borrowing



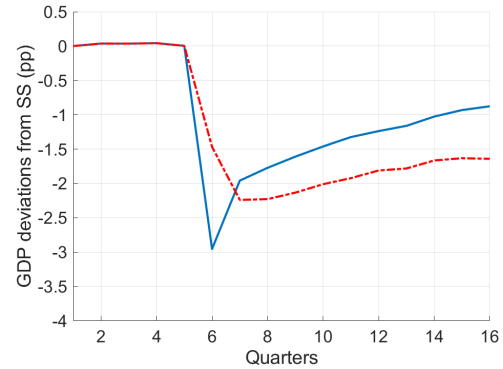
(c) Spreads



(d) Frequency of Default



(e) The Pie



(f) GDP Losses

significantly above the benchmark case throughout the duration of the program. This illustrates the perverse incentives created by a program with no conditionality. To understand why, remember that countries can borrow from the IFI even when they are excluded from private capital markets. Exclusion happens because either the country chooses to default in the current period (when $d = 1$) or has defaulted in the past and did not regain access (when $\Omega = 0$).

Panel (e) reveals that the pie—i.e., the pool of available transfers—increases relative to GDP following the recession, in contrast to the decline observed in the benchmark case (Panel d). This indicates that policymakers are exploiting the additional resources provided by IFI borrowing to direct transfers toward themselves and members of their minimum winning coalition (*mwc*), rather than using the funds to smooth taxes or prevent default. In effect, many economies are responding similarly to the illustrative case shown in Figure 5. Panel (f) shows that GDP losses are substantial in the benchmark scenario, reaching nearly 3% in the initial quarters following the shock. With IFI debt, output declines are somewhat smaller in the short run, but the recovery is more protracted. This happens because more defaults create a temporary relief with lower taxes, but exposes the economy to a long and uncertain period of lower productivity due to an uncertain period of exclusion from capital markets. In the absence of conditionality, the IFI lending program fails to stabilize the economy and, in fact, appears counterproductive—delaying adjustment and prolonging the downturn.

It is interesting to contrast the response of this economy to the one with stronger institutions, as we did with the impulse-response section before. The economy with m_H seldom defaults and devotes very few resources to Π , as we learned from Table 3. Given that the recession simulated above is relatively mild (about half a standard deviation), spreads do not increase significantly for this economy. The government has borrowing capacity at low rates and is able to face the shock by borrowing in the private market. The introduction of IFI debt does not change this behavior, and the m_H -economy chooses not to borrow from the IFI setting $b'_I \simeq 0$ for the duration of the program, even though there is no conditionality. In other words, checks and balances make it unprofitable to distort the economy to consume Π in the benchmark, so there is no over-borrowing. As a result, the H-economy is relatively unconstrained when recessions hit and its government can smooth taxes effectively. Adding IFI debt does not change these incentives, and does not create moral hazard in this case. The figures associated for the m_H case are not displayed, but are available upon request from the authors. What they show is that basically nothing changes relative to the benchmark when IFI lending is introduced if the economies in the Monte-Carlo simulation start at the ergodic distribution.

5.4 IMF lending with conditionality: full monitoring

IMF conditionality refers to the economic reform measures that a borrowing country must implement as conditions for accessing financial assistance (see [IMF conditionality website](#)). These conditions, drawn from the country’s reform program, are designed to address balance-of-payments difficulties and ensure repayment to the IMF. As outlined in Article I(v) of the IMF’s Articles of Agreement, the goal of IMF financing is to help members correct balance-of-payments imbalances without resorting to destructive measures, thereby restoring macroeconomic stability. Conditionality plays a dual role: it provides a framework for the member’s economic recovery and serves as the IMF’s safeguard for repayment. In practice, conditionality is formalized through an IMF financial

arrangement, such as a stand-by arrangement, which specifies the conditions for accessing funds. These conditions are typically divided into quantitative performance criteria (QPCs) and structural performance criteria. QPCs set measurable targets for macroeconomic variables, such as budget deficits or levels of international reserves, that must be met throughout the program. Structural performance criteria focus on critical reforms, often legislative or institutional, such as enacting new banking regulations or enhancing fiscal frameworks (see [IMF conditionality website](#))).

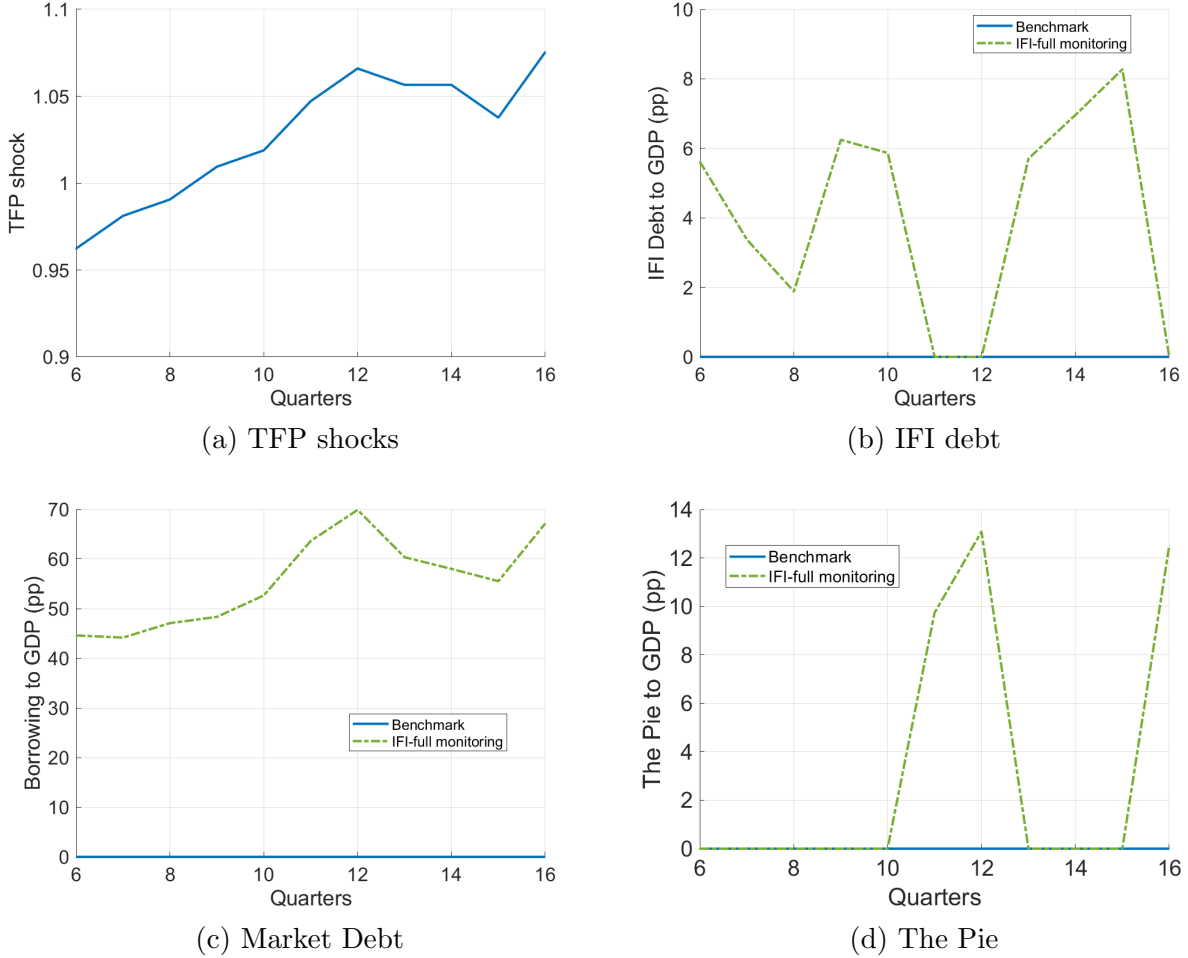
In this study, we underscore the central role of corruption-related expenditures in driving excessive borrowing. Accordingly, we introduce a quantitative performance criterion that imposes a constraint on the diversion of public funds towards Π . This framework enables us to evaluate the direct effects of such targeted rules on fiscal discipline and borrowing behavior, providing a rigorous analysis of how they can be used to mitigate the adverse effects of corruption on sovereign debt dynamics. Specifically, we augment the model of Section 5.1 by introducing the following constraint.

$$\text{IFI Conditionality: } \pi_i = 0 \quad \text{if} \quad b'_I > 0. \quad (16)$$

Equation (16) implies that when countries borrow from the IFI (e.g., $b'_I > 0$), they are unable to use government revenues for corruption spending (e.g. $\Pi = 0$). This assumes that the IFI can perfectly monitor government spending, ensuring that no resources are diverted toward corruption or political patronage. While this is an extreme assumption—since, in reality, it is difficult to distinguish between legitimate government spending and nepotism, bribes, or politically motivated transfers—it provides a useful theoretical framework. Even if such monitoring were possible, perfect enforcement is unlikely. However, for the sake of analysis, we assume this idealized scenario and examine the effects of this constraint on fiscal policy, which we refer to as a model of “full monitoring.”

The intuition is clearest when we examine a specific simulation, such as the one shown in the first panel of Figure 7, which allows us to track how key variables evolve under IFI lending with conditionality (dashed green) compared to the benchmark model without external support (solid blue). Several important insights emerge. First, the presence of IFI lending with monitoring can effectively prevent default. This can be seen by the fact that private debt is zero in the benchmark case, whereas it remains at around 45% in the first period in the IFI-full monitoring case (Panel c, in dashed green). This contrasts sharply with the no-conditionality case, where the introduction of IFI lending actually led to more defaults. The conditionality attached to the program constrains opportunistic fiscal behavior. In the absence of such oversight, governments may divert borrowed resources toward political transfers, weakening fiscal discipline and increasing the likelihood of default. Because of oversight, resources freed by defaulting can be substituted by a continued flow of funds from the IFI, without incurring the recurring productivity cost of default. This is a success for the program. However, the country does not implement an austerity program, as the IFI would like. In contrast, we see private debt/GDP to rise well above the values in the ergodic set for m_L . Why? Because it can gamble to keep consuming the pie in periods with a high TFP

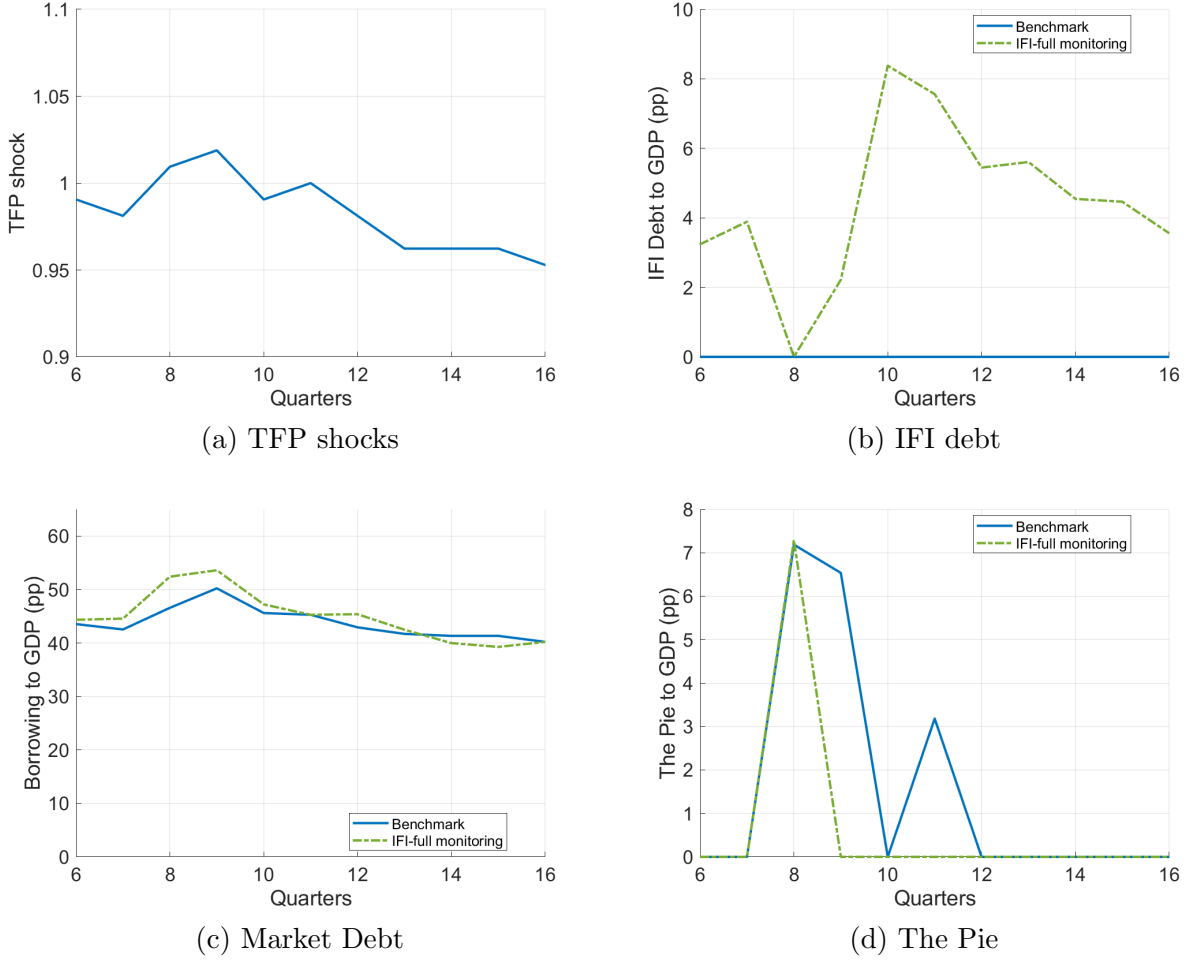
Figure 7: Debt management with IFI debt and conditionality, a ‘defaulter’



shock and borrow from the IFI when TFP is lower. Hence, moral hazard remains even with perfect monitoring. In addition, the EM’s government does not always opt to borrow from the IFI. This happens because when TFP is higher, the proposer would rather distribute π_i (note the jumps in the green dashed line in periods 11,12 and 16), something it is unable to do when borrowing from the IFI (e.g. when constraint 16 binds). Notice that during high-TFP periods—such as 11, 12 and 16— IFI debt drops to zero. We can eyeball a negative correlation between the TFP shock and IFI borrowing as a result. Finally, note that when it does not borrow from the IFI, the average size of the pie is large whereas it is zero in the benchmark case. This illustrates the moral hazard of reduced defaults leading to excessive borrowing and discretionary spending.

Figure 8 illustrates a simulation for an m_L -type economy that experiences a more favorable sequence of shocks (see Panel a) and enters the recession with stronger fundamentals—specifically, a lower debt-to-GDP ratio. In this scenario, the government would not have defaulted even in the absence of IFI support, and indeed does not default when the program is introduced. Initially, the

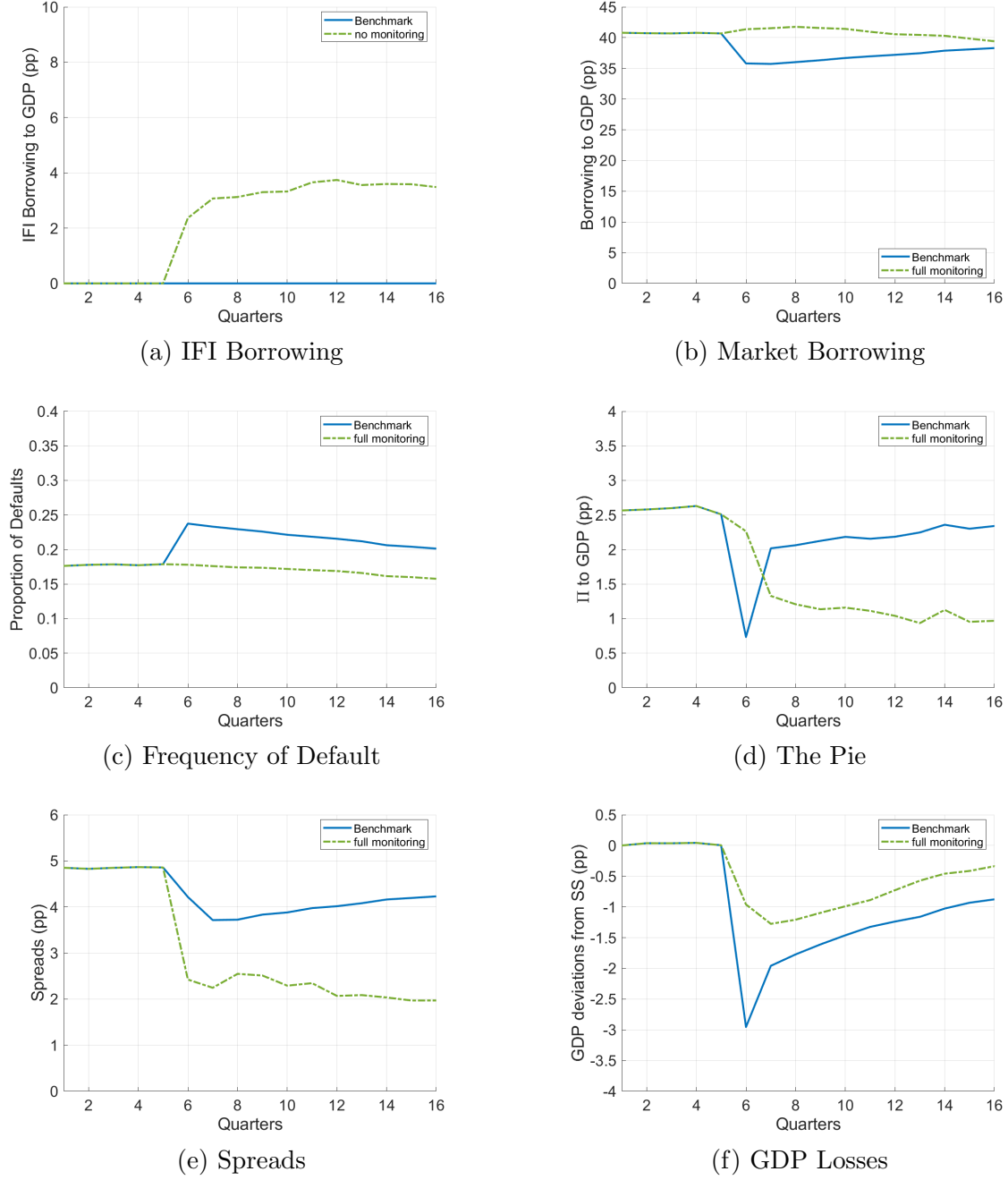
Figure 8: Debt management with IFI debt and conditionality, a ‘non-defaulter’



proposer borrows a small amount from the IFI. However, the combination of program availability and a positive TFP realization leads the policymaker to allocate a large pie (Π) while temporarily eliminating IFI borrowing. In the benchmark case without the program, there would be more periods with positive corruption spending with a simultaneous increase in borrowing. By contrast, when the IFI option is available, the government becomes less fiscally cautious—it chooses to borrow more from private markets instead. The reason is that the mere existence of the IFI backstop weakens the incentive to deleverage preemptively: with access to emergency lending in the event of future adverse shocks, the perceived need to reduce private borrowing today diminishes.

In Figure 9, we present the average outcomes across the Monte-Carlo simulations for the scenario with full monitoring. Panel (a) shows that, on average, emerging markets borrow around 4% of IFI debt during the program—significantly less than in the scenario without conditionality (see Figure 6). The program is highly effective in preventing defaults when a recession hits (here, as before, we consider a half-standard-deviation negative z shock), as countries on the brink of default can

Figure 9: Monte Carlo (full monitoring), m_L economy



avert it with relatively small IFI loans. Across the sample, the default rate is lower than the steady state value. With conditionality, IFI debt becomes available when countries face negative shocks but remains “expensive” for those that don’t need it (i.e., the ones with higher realizations of TFP). The cost does not manifest through the price q_I but rather through the inability to allocate resources to corruption (Π). In our model, countries tend to engage in corruption during booms, not during periods with lower realizations of the TFP shocks. Therefore, monitoring enables the

IFI to effectively price out EMs in their expansionary periods while providing critical support to those facing adverse conditions.

The only disadvantage of the program is that the average private debt to output is higher when the program is available. Since the program reduces spreads, private debt becomes cheaper, and borrowing capacity grows even above the benchmark case, increasing the likelihood of “repeat users” of the program. This key problem arises because the existence of the program produces an externality for those EMs who do not use it. Rather than using this to their advantage, that is, using the additional funds to reduce the private debt burden, politicians choose to waste them on corruption spending. While the program goes a long way in improving allocations, it is not perfect.

5.5 A debt ceiling rule

Implementing anti-corruption monitoring as a conditionality for IFI credit may be ineffective and impossible in practice, as countries can employ sophisticated accounting maneuvers to divert resources for corruption spending despite costly oversight mechanisms. In this section, we propose a debt ceiling rule that is required to be adopted if countries borrow from IFIs. The objective is to assess whether this rule could achieve outcomes comparable to those of an anti-corruption measure but at significantly lower monitoring costs. To this end, we propose the following debt rule to accompany IFI lending:

$$\text{IFI Conditionality: } \frac{b'}{y} \leq \max \left\{ \delta \frac{b}{y}, \frac{\bar{b}}{\bar{y}} \right\} \quad \text{if } b'_I > 0, \quad (17)$$

where δ is set to 0.95 in our simulation, and $\frac{\bar{b}}{\bar{y}}$ denotes the long-run debt to GDP ratio (e.g., 49% in our calibration for the m_L government). This conditionality mandates that if the country borrows from the IFI, it must implement an austerity program to reduce private debt by 5 percent of its current debt-to-GDP ratio, as long as this ratio exceeds the long-run average. If the private debt to GDP is already below the long-run average, the EM can no longer increase its debt beyond $\frac{\bar{b}}{\bar{y}}$. Note that, as before, the rule applies only for the case in which $b'_I > 0$, that is, as a condition for lending rather than as a permanent structural change imposing a debt ceiling rule in the country.

Monte Carlo simulations under the debt-ceiling conditionality are shown as black dashed lines in Figure 10, alongside the outcomes from the previous scenarios. On average, the results of the debt rule resemble those of the IFI program without conditionality. Although the debt-ceiling rule leads to slightly fewer defaults overall, the proportion of defaults remains higher than in the benchmark case without IFI lending. Why does this occur? Under the debt-ceiling rule, the government is prohibited from expanding private borrowing beyond a predetermined limit. This constraint deters default in some economies relative to the no-monitoring scenario. The mechanism operates through its effect on the government’s continuation value and, consequently, on the equilibrium price of private debt. By improving expectations about future repayment prospects, the rule can temporarily sustain market access. The debt-ceiling rule, however, fails to eliminate the underlying moral

hazard problem. By providing an external borrowing option, it allows governments to continue engaging in politically motivated transfers and excessive risk-taking. As shown in Panel (d), transfers as a share of GDP rise sharply during the downturn, closely mirroring the no-monitoring case. This highlights that fiscal limits alone are insufficient to discipline policymakers when institutional checks are weak.

Intuitively, economies that adopt the IFI program with a debt-ceiling rule—but would have otherwise defaulted under no monitoring—benefit from higher bond prices on their new debt. This temporary improvement in credit conditions enables them to sustain higher debt levels, as depicted in Panel (b). As explained in Azzimonti and Mitra (2023a), these higher prices stem from expectations of reduced future resource diversion (Panel d), which improves perceived repayment capacity and prevents immediate default.

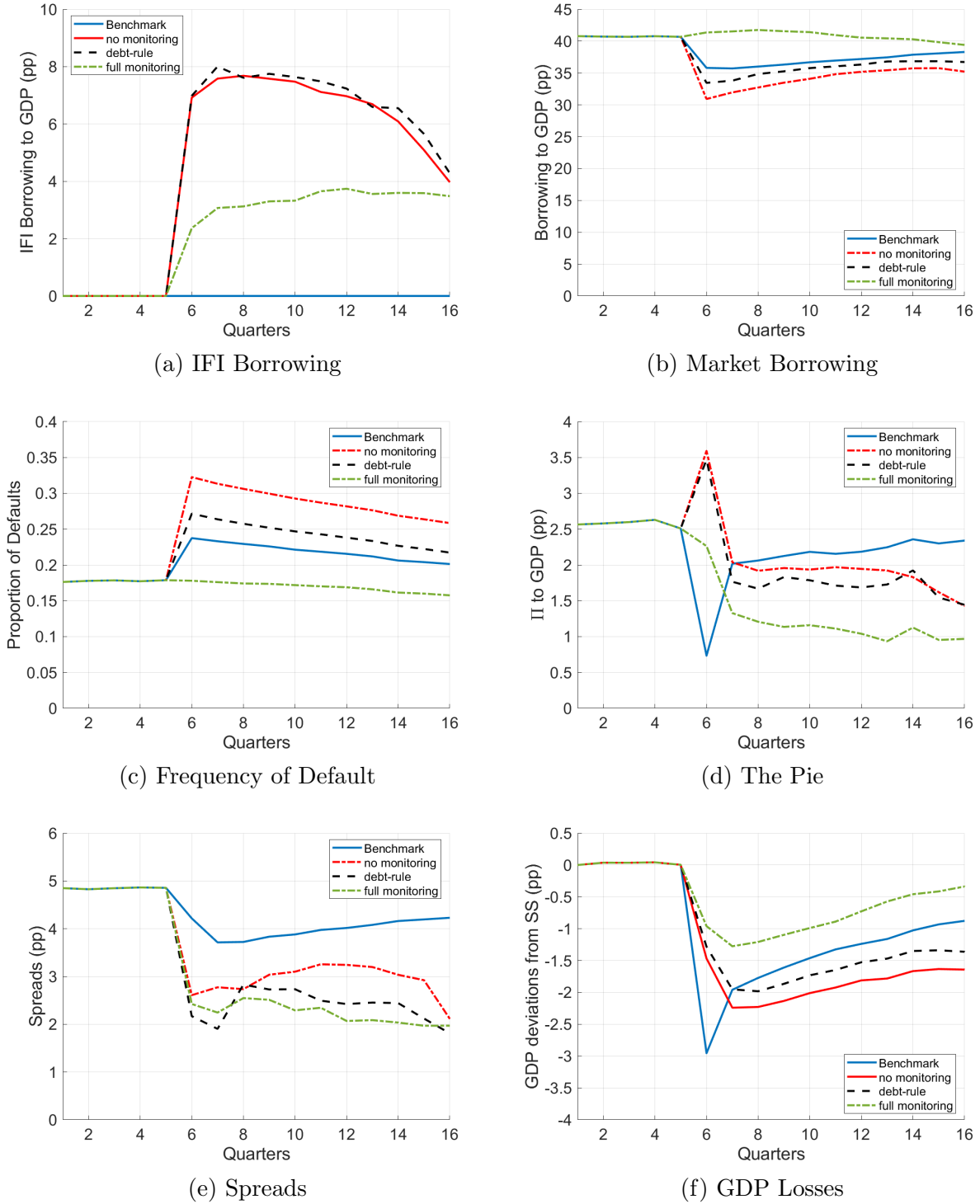
The use of IFI credit rises substantially under the debt-ceiling rule (Panel a), as governments substitute restricted private borrowing with IFI funds to preserve the same level of corruption-related spending. Indeed, IFI borrowing is even higher than in the no-monitoring case because the debt ceiling binds in private markets. Panel (f) shows lower GDP loss in the debt-ceiling rule than the no-monitoring case, and a higher loss compared to the full-monitoring case. This ranking is simply a reflection of the loss in productivity resulting from default. The debt-ceiling rule falls short of the perfect monitoring approach in preventing defaults, as it allows the continued diversion of resources to corruption. Corruption spending raises the cost of new debt issuance and perpetuates fragility. We conclude that conditionalities not directly targeting corruption cannot replicate the default reduction achieved under full monitoring. This creates a fundamental trade-off for IFIs: while perfect monitoring lowers defaults, it is costly and may foster future moral hazard, whereas weaker quantitative performance criteria (QPCs) are less intrusive but risk higher default rates.

5.6 Which is the best rule?

The appropriate choice of conditionality ultimately depends on the IFI’s objectives and the costs of enforcing different rules. A straightforward success metric is the program’s impact on default rates. The recovery rates under the three rules and the benchmark case are shown in Panel (a) of Figure 11. Among the alternatives, full monitoring consistently delivers the lowest incidence of default, clearly outperforming other designs. However, implementing effective anti-corruption oversight can be prohibitively costly. In such cases, the relevant comparison narrows to the remaining options: no monitoring—where IFI lending carries no conditionality—and the debt-ceiling rule, which indirectly constrains corruption by limiting total borrowing. In our numerical simulations, both alternatives perform worse than the benchmark, leading to higher default rates overall. Therefore, international investors would be better off without an IFI program than a debt-rule, or one without any monitoring¹⁶. Since the full-monitoring rule removes the possibility of misusing

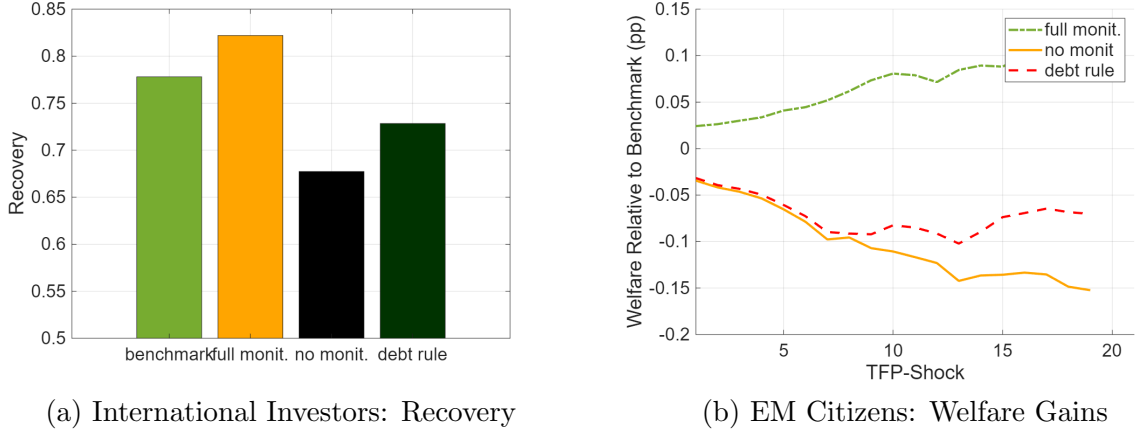
¹⁶A hybrid rule comprising elements of anti-corruption measures and a stringent debt rule that reduces default may be more palatable to the private lenders.

Figure 10: IFI debt with imperfect monitoring (simulation avg)



IFI resources entirely in corruption spending, it generates the lowest default rates—indeed, even below those observed in the benchmark economy.

Figure 11: Comparing conditionality rules



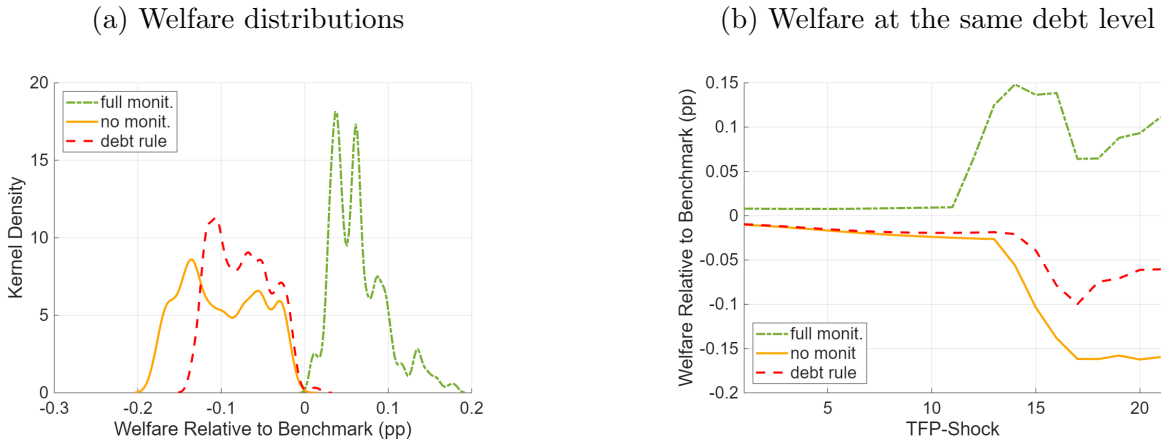
Alternatively, we can assess welfare gains relative to the benchmark, incorporating not only default rates but also broader fiscal and economic policy dimensions. While default matters to international investors, the broader macroeconomic repercussions of a default reflects on aggregate private and public consumption which impacts agents in the economy. If the IFI’s objective extends beyond financial stability, our model allows us to evaluate the overall costs and benefits for agents in the borrowing country. Panel (b) of Figure 11 shows the welfare gains relative to the benchmark case under different rules in the period when the negative shock hits and the IFI program becomes available. Unsurprisingly, while the debt-ceiling rule outperforms the no-monitoring case, both of them perform worse than the full-monitoring scenario, and the benchmark with no IFI debt. In the plot, we display shocks’ indexes rather than the actual values to ease readability. A higher number corresponds to a ‘better shock.’ TFP values lower than 5 are relatively ‘recessions’ whereas those above it indicate ‘booms.’

Why does this occur? The key reason is that while both the debt-ceiling and full-monitoring rules limit government spending—thereby curbing excessive borrowing and reducing defaults—full monitoring more directly addresses the root cause of the problem. By eliminating the ‘pie,’ it targets a limited group within the economy (primarily those in the minimum winning coalition, *mwc*). it constrains rent-seeking behavior among the politically powerful (primarily those in the minimum winning coalition, *mwc*). This not only lowers default risk but also raises public goods provision (which is taken into account when computing welfare) relative to the benchmark, as reduced corruption and improved creditworthiness make borrowing more affordable. In contrast, under the debt-ceiling rule, politicians may reallocate resources towards corruption spending, leading to a decline in public goods provision and lower welfare for the average citizen.

While the full-monitoring scenario results in welfare gains relative to the benchmark, the other two cases result in welfare losses. Moreover, welfare under full monitoring increases with higher TFP realizations, whereas it declines under no monitoring and remains largely flat under the debt

rule. The mechanism behind these results lies in the procyclical nature of corruption spending in the model: higher TFP realizations are associated with greater diversion of resources toward the pie, benefiting only the executive and members of the *mwc*. This diversion is effectively prevented under full monitoring, allowing higher productivity to translate into lower taxes, higher consumption, and greater public goods provision for the broader population. In contrast, the debt-rule and no-monitoring cases exhibit an initial decline in welfare (up to TFP level 7) due to the spike in defaults and associated productivity losses. With a higher TFP, both cases result in repayments; but the repayment burden includes both the IFI debt and expensive private debt. This is done at the cost of painful austerity measures impacting the average citizen in expectation. Since the debt-rule case involves higher bond prices, repayments are less of a burden and austerity measures are less strict.

Figure 12: Selection effect in welfare



The welfare analysis just described is based on the Monte Carlo experiments shown before. It shows the mean of the differences in the value function simulations at the period of the shock. Clearly, this will include selection effects which we do not control for. Selection bias comes from the debt levels corresponding to the history of shocks leading up to the period under consideration. For example, one economy with a series of above-median TFP shocks may enter period t with a higher debt and hence default, while another economy with a series of below-average TFP shocks may enter with a lower debt even though they have the same TFP realization in the current period. This results in a distribution of welfare gains in each situation, as shown in Panel (a) of Figure 12. While Panel (b) of Figure 11 shows just the averages of these distributions, a handful of cases exist where the no-monitoring or the debt-rule cases perform better than the benchmark (as seen by the mass at positive values in the figure).

To control for the histories, in Panel (b) we plot the welfare gains relative to the benchmark at the same level of private debt, and zero IFI debt. Our findings remain unchanged: full monitoring leads to welfare gains while the other two lead to welfare losses. Two new insights emerge from this figure. First, at low levels of TFP the three lines are close to each other. This is be-

cause neither repayment, nor default decisions result in corruption spending in periods with lower revenues. Second, the increase in gains from full-monitoring and the declines in the other cases are non-monotonic. This is because of the program uptake. While shocks 11-16 result in positive participation in the IFI program, higher TFP realizations make it too costly to give up on the corruption spending. Positive corruption at this point results in a sharp drop in citizen welfare. The rise in welfare beyond the drop is simply because of rising TFP. Non-enrollment is also responsible for the rise in welfare at higher levels of TFP: there is no austerity because of constrained borrowing; however, with no-monitoring, enrollment is universal and hence welfare does not rise.

6 Conclusion

Debt management decisions in emerging markets are deeply influenced by their institutional environment. Weak institutions create incentives for corruption, leading to irresponsible policymaking, such as over-borrowing, overspending, and frequent defaults. IFI lending programs, while providing short-term relief, can exacerbate this problem by offering an attractive outside option in the event of default, further reducing policymakers' incentives to be prudent and increasing their likelihood of engaging in targeted transfers. This underscores the importance of conditionality in lending programs such as those from the IMF. Effective monitoring, even if applied only to countries borrowing from the IFIs, can help prevent defaults by allowing struggling countries to access funds when needed. However, moral hazard remains an issue, as countries that avoid borrowing still benefit from lower spreads and more lenient financial conditions, enabling them to increase borrowing and corruption.

When monitoring corruption is not feasible or appears to be an intrusion on sovereignty, the IFIs may resort to other forms of QPCs. In this paper, we considered a guided debt reduction strategy paired with a debt ceiling. Both no monitoring and a debt-ceiling rule allow some resources to be diverted toward corruption spending, so while they are less effective at reducing defaults than perfect monitoring, they create a lucrative outside option creating incentives for more defaults. The choice of rule ultimately depends on the IFI's objectives. If the primary goal is merely to reduce defaults, a more stringent debt-ceiling rule than the one shown in this paper, that indirectly targets corruption may be sufficient. However, if IFI loans are directly contingent upon anti-corruption measures, this approach delivers greater welfare gains to citizens relative to a debt ceiling rule. This happens because under an anti-corruption conditionality rule, taxes are generally lower, boosting private consumption, while government spending is directed more towards public goods rather than costly political spending. Although a steep debt reduction may not be feasible and as our model suggests, is more likely to deliver a result closer to the benchmark.

In our analysis, we have examined a debt ceiling rule with an exogenously determined upper bound. An interesting extension of this framework would involve incorporating a pre-renegotiation stage between the IFI and the ruling coalition to determine the debt ceiling level, allowing for greater

alignment with the political and economic context of the borrowing country. This negotiation process, depending on the bargaining power of each party, can generate a range of results with some of them resulting in welfare gain for the citizens. Furthermore, considering long-term debt into the model could be interesting, as it introduces debt dilution and can impact the potency of the rules discussed. Similarly, extending the model to incorporate renegotiation over debt repayment could provide valuable insights into the dynamics of post-default resolution and its broader implications for long-term debt sustainability. Finally, it is essential to recognize that none of these strategies address the underlying institutional weaknesses in countries reliant on IFI debt. A gap remains in multilateral policy-making to design and implement irreversible structural reforms in emerging markets, specifically targeting corruption, that could foster a more sustainable, long-term impact. Establishing such structural policies is crucial for building resilience in EMs and reducing reliance on conditional lending alone.

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