

# Compliance, defiance, and the dependency trap: International Monetary Fund program interruptions and their impact on capital markets

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## Abstract

The International Monetary Fund (IMF) is infamous for its structural adjustment programs, requiring countries to undertake policy reforms in exchange for loans. Yet, not only do countries routinely fail to implement these reforms, but they also frequently return to the IMF to start the process anew. What explains this compelling case of transnational regulatory ineffectiveness? We argue that countries are caught in a dependency trap: politically contentious policy prescriptions drive non-compliance, triggering adverse market reactions that leave countries with few sources of financing beyond the IMF, leading to their eventual return to the doors of the organization for a fresh loan. Using new data on 763 IMF programs from 1980 to 2015, we initially demonstrate that the prevalence of market-liberalizing structural reforms increases the likelihood of program interruptions. We then show that program interruptions undermine investor confidence and increase sovereign borrowing costs. Our study uncovers hitherto neglected relationships between the international institutions of regulatory capitalism, country compliance, and financial market responses.

**Keywords:** bond spreads, compliance, dependency trap, IMF conditionality, investor ratings, transnational regulatory effectiveness.

**Jel Classification:** F33; F34; F53

## 1. Introduction

International organizations powerfully shape regulatory governance within nation-states by diffusing ideas and practices about appropriate policy (Barnett & Finnemore 2004; Simmons *et al.* 2008; Shaffer 2015; Križić 2019). This is not always a happy story leading to improvements in governance: problems can emerge when international organizations fail to account for the diversity of regulatory environments in countries around the world. Those recognizing this issue typically point to a variegated regulatory state on a spectrum between rule-based high-income countries and deal-based low- and middle-income countries that face increased vulnerability to global forces (Carruthers & Halliday 2006; Dubash & Morgan 2012; Jayasuriya 2013; Križić 2019). Simply put, things are done differently outside the Global North, and necessarily so, reflecting widely diverging development paths and political economic structures. Yet, with the locus of many regulatory problems shifting from the domestic to the transnational realm, international organizations have been slow to recognize the distinct

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regulatory issues faced in low- and middle-income countries. As a result, transnational regulatory strategies have often remained ineffective (Abbott & Snidal 2013).

One such case of regulatory ineffectiveness relates to lending programs of the International Monetary Fund (IMF), which acts as a lender of last resort to countries – commonly in the Global South – where access to alternative sources of external finance is limited and its terms are onerous. The IMF has always been a central actor in global economic governance in the postwar period, but in recent years, its role has been further bolstered. It is part of the emergent “Global Financial Safety Net,” which also includes regional financing arrangements and bilateral agreements, and provides countries in economic trouble with access to loans and currency swaps (Henning 2019; Clark 2020; Schneider & Tobin 2020). Albeit attractive to borrowers, the financial resources remain limited in scope, and in some cases, access to funds is conditional on having a parallel IMF agreement (Gallagher *et al.* 2021; Stubbs *et al.* 2021). This means that the IMF is by far the most important actor within the Global Financial Safety Net, and a close inspection of its activities can generate important insights into the governance dynamics within low- and middle-income countries.

The IMF’s lending programs are known for their strict and binding policy reforms that determine loan disbursement, a topic of sustained academic and policy controversies (Easterly 2005; Forster *et al.* 2019; Reinsberg *et al.* 2019a,b,c). However, countries routinely do not implement these reforms, which deprives them of IMF financial assistance and results in program interruption or failure. Such developments can have important implications, as they may send negative signals to markets, thereby worsening countries’ economic circumstances.

Given the potentially high costs of non-compliance with IMF programs, why do countries fail to comply? The dominant explanations in scholarship on compliance relate to country-level factors: inefficient economic policy choices, macroeconomic vulnerabilities, and poor quality of governance (Chayes & Chayes 1993; Haggard & Webb 1993; Mecagni 1999). After interruptions, negotiations for a new program often start anew (Dreher 2003). This is known as “recidivism” – the tendency for countries to enter into repeat lending agreements, never “graduating” from needing international economic assistance (Easterly 2005).

In this article, we provide an alternative account of the regulatory ineffectiveness of IMF conditional lending programs. We posit that non-compliance can be endogenous to program design. Our theoretical argument proceeds in three steps. First, we posit that specific types of policy reforms in lending programs are systematically related to program non-compliance. So-called structural conditions involve policy measures that seek to overhaul the political economy of borrowing countries, requiring countries to reorganize the public sector, privatize state-owned enterprises, and liberalize prices (IMF 2001c). While structural conditions are included to purportedly redress the “root causes” of the performance of poor countries (Khan & Knight 1983), they foster implementation failure because they mobilize domestic veto players, exacerbate time-inconsistency problems, and overburden the public administrations of borrowing countries (Reinsberg *et al.* 2019a,b,c). Second, we document that the failure of lending programs leads to a collapse of investor confidence, with adverse effects on the costs of sovereign refinancing. Third, we argue that by undermining the viability of market-based lending, program failures increase the need for countries to return to the IMF for assistance. Such countries end up in a dependency trap.

To support this argument, we use a novel data set on the implementation record of 763 IMF programs between 1980 and 2015. We establish a causal link between program design and compliance. Controlling for a host of confounding factors, we show that a higher number of structural conditions increase the likelihood of program interruptions – the most appropriate measure of non-compliance (Arpac *et al.* 2008). On average, moving from no structural condition to 43 structural conditions – the sample maximum – in the first year of an IMF program increases the likelihood of a program interruption from 40.4% to 88.8%. Compliance failure is especially high for programs that include more conditions mandating public sector reform, privatization of state-owned enterprises, and price liberalization. We then demonstrate that program interruptions lead to a decline in institutional investor ratings – a drop of up to 1.77 rating points or almost 27% of a standard deviation. Using monthly panel data for a subsample of 30 emerging market economies, we also find an instantaneous effect of program interruptions on bond spreads. Given that higher costs of market-based sovereign financing increase the likelihood of subsequent IMF participation (Bird *et al.* 2004), we interpret our combined results as evidence of a dependency trap.

Our argument has important implications for broader scholarship on compliance and international political economy. For one, our findings draw attention to the role that international organizations themselves play in undermining compliance: rather than solely focusing on implementing-country failures, we call for a fuller appreciation of the international organizational dynamics behind the design of different policies and programs. Furthermore, we extend an incipient body of research on financial market responses to the activities of international financial institutions by demonstrating how program non-compliance – not just the announcement of a new program (Gehring & Lang 2020) – affects investor confidence and increases sovereign refinancing costs. Finally, we make publicly available the most extensive data set of IMF program reviews, based on our coding of loan documents between the IMF and borrowing countries.

## 2. The design of conditionality, program compliance, and financial market responses

International financial institutions play a key role in the global economy by providing support to countries struggling to service external debt or obtain development project loans. This support often comes with strings attached: concrete commitments to policy reforms, a practice known as “conditionality.” The most powerful institution associated with this practice is the IMF, acting as the world’s lender of last resort. Yet, its lending practices are characterized by two puzzling features. First, program interruptions are widespread. Of the 763 lending agreements signed between 1980 and 2015, 512 faced compliance issues deemed critical enough to suspend the program, 291 of which did not subsequently resume. Second, despite far-reaching conditionality to resolve underlying economic issues, most IMF borrowers were “recidivists” (Easterly 2005). Over a 35-year sample period, borrower countries had, on average, six programs. Only 10% of programs were for first-time borrowers, while Kenya, Mauritania, Malawi, and Senegal had 13 programs each.

We link two strands of scholarship developed hitherto in little dialogue: compliance failure and borrower recidivism. Our main argument is that borrowers are trapped in a cycle of dependency. Ill-designed conditionality increases the likelihood of program failure, which results in program interruptions. Financial markets then interpret interruptions as signals of inadequate commitment or ability of countries to pursue “prudent” economic policies, a lack of confidence reflected in deteriorating terms for market-based sovereign refinancing. In turn, countries face higher borrowing costs and volatile capital flows, which can ultimately push them back to the IMF for financial support. As countries have weak fundamentals, IMF staff respond with demands for more conditionality. In other words, recidivism is not necessarily due to countries independently pursuing misguided economic policies (Easterly 2005), but is linked to the inappropriate design of earlier IMF programs (Feldstein 1999; Eichengreen 2000; Stiglitz 2002). We flesh out the central tenets of this argument and present our main hypotheses in the remainder of this section.

### 2.1. How IMF programs can get interrupted

Our point of departure is a borrowing country requiring external assistance to restore its balance of payments. After a formal request for assistance, IMF staff develop a blueprint for negotiation with borrowing country authorities, which is then approved by IMF management and the Executive Board – the main inter-governmental decision-making body of the institution. Programs are subject to periodic reviews unlocking phased access to credit, in which IMF staff assess country performance against agreed-upon targets (Mussa & Savastano 2000). *Binding conditions* – including prior actions, structural performance criteria, and quantitative performance criteria – must be met for a review to be completed and the tranche of funds to be disbursed, whereas failure to implement *non-binding conditions* – indicative targets and structural benchmarks – does not automatically lead to interruptions (IMF 2001). If a binding condition is not met, IMF staff can propose to the Executive Board to waive the condition, enabling review completion; but if no waiver is granted, then the program is interrupted. In such instances, the interruption is temporary if borrowing countries reach agreement with staff on measures to get the program back on track; otherwise, it is permanent (Arpac *et al.* 2008).

## 2.2. Condition types and compliance failures

The proposition that program design matters for compliance is not new (Bird & Willett 2004; Baqir *et al.* 2005; Bird 2008; Reinsberg *et al.* 2021). Yet, we extend this logic by arguing that certain types of conditions are more likely to result in compliance failures. Following the IMF's formal designation (IMF 2015), we distinguish between two categories of conditions. *Stabilization conditions* entail quantitative macroeconomic targets, with the goal of the short-term stabilization of crisis-ridden economies. While these represent the bulk of conditionality (Stubbs & Kentikelenis 2018), they specify policy ends rather than means, thereby allowing governments to pursue a range of policies to meet them. *Structural conditions* entail a diverse set of microeconomic reforms – including the privatization of state-owned enterprises, liberalization of trade and finance, and restructuring of public administrations, regulatory institutions, and tax systems – that contribute to meeting macroeconomic targets and other policy objectives (Woo 2013, p. 301).

Although stabilization and structural conditions are intertwined, they have distinct implications for compliance. Stabilization conditions might entail unpopular reforms like spending cuts or increases in broad-based taxation, but such actions are reversible – governments can subsequently increase public spending. In contrast, structural conditions can render a return to the status quo non-feasible (Roland 1994): attempting to renationalize natural resources or reregulate economic activities may result in protracted legal battles with investors and impact “market sentiment” and borrowing costs. This is why such reforms are seldom reversed (Stallings & Peres 2011; Appel & Orenstein 2016), plausibly affecting the willingness of governments to implement them in the first place. Anecdotal evidence also suggests that structural conditions drive compliance failure by requiring far-reaching reforms within overly ambitious timescales. A former IMF senior staffer explained that “though the expansion of structural conditionality was a largely appropriate response to changing circumstances, there is a sense that we may have gone a bit too far,” asking for “too much, too soon” (Dawson 2003). In an IMF follow-up survey on its Streamlining Initiative,<sup>1</sup> two-thirds of Executive Directors said that conditionality could be more focused, while several of them expressed concern that the number and pace of structural reforms frequently overwhelmed country authorities (IEO 2018, p. 13).

In line with scholarship linking implementation problems to domestic veto players (Mayer & Mourmouras 2008), we also argue that structural conditions are politically more difficult to implement because they concentrate losses on vested interest groups in the political economy (Reinsberg *et al.* 2019a,b,c). In this regard, we expect *privatization conditions* to prompt backlash from affected firms where such reforms eliminate privileged government treatment (Reinsberg *et al.* 2019a,b,c). Civil servants also form an important interest group that can block policy reform via their control of the institutions of the state (Nelson 1984; Haggard & Kaufman 1992; Waterbury 1992), and will be most opposed to *public sector conditions* that impose costs on their own well-being (Rickard & Caraway 2019). In addition, structural conditions frequently have longer timeframes for implementation (Bird 2007, p. 690), which can exacerbate political difficulties. While the costs of structural reforms are immediate, their benefits might materialize only in the long term, which makes it difficult for governments to engineer pro-reform coalitions among domestic actors with the power to block implementation. A key policy area liable to the time-inconsistency problem is *price liberalization conditions*. For example, abolishing food subsidies imposes immediate costs on urban populations, but the long-term benefits of expanded domestic food production and producer competitiveness are uncertain (Fernandez & Rodrik 1991; Haggard & Webb 1993). This discussion leads us to the following hypotheses:

Hypothesis 1a. The more (binding) structural conditions a borrowing country receives in a program, the greater the likelihood of program failure.

Hypothesis 1b. Structural conditions mandating public sector reform, privatization of state-owned enterprises, and price liberalization will increase the likelihood of program failure.

## 2.3. Consequences of program failure

Non-compliance raises transaction costs through the frequent renegotiation of program content and delays in much-needed loan disbursements. These renegotiations are susceptible to strategic donor and IMF staff influence, systematically privileging (or punishing) some borrowers over others (Stone 2004; Pop-Eleches 2009; Dreher

*et al.* 2015). In addition, to the extent that implementing conditions is conducive to improvements in economic conditions (but see Przeworski & Vreeland 2000; Easterly 2005; Dreher 2006), non-compliance can inhibit progress on program objectives and improvements in macroeconomic fundamentals (Nsouli *et al.* 2004). It can also undermine market confidence in borrowing countries, leading to a deepening of economic crises and increased financial instability (Bird 2002, p. 838–39; Edwards 2005).

We focus on financial market responses to compliance failures for two reasons. First, the success of IMF programs often hinges on the catalysis of foreign direct investment and other development funds (Mecagni 1999; Woo 2013; Stubbs *et al.* 2016). These funds are indispensable because IMF lending only covers a fraction of the financing gap. Second, market reactions may undermine the ability to borrow from financial markets at reasonable costs, thereby plunging countries into renewed crisis.

Why should investors care about IMF programs? Among several potential arguments, the most compelling is that IMF programs act as a “seal of approval” for economic policies of borrowing countries (Vreeland 2003; IMF 2004; Bauer *et al.* 2012; Gehring & Lang 2020). Failure to implement programs signals to investors an inadequate desire or ability to implement market-liberalizing policy reforms, therefore reducing expected profits from investments and thus adversely affecting investor ratings and refinancing conditions.

Two studies have examined the effect of program failure on investor behavior, although they do not account for specific program design. Using a sample of 106 developing countries for 1979–1995, Edwards (2005) found that portfolio investment decreases after program suspensions. Bird and Rowlands (2002) assessed the influence of program suspension – proxied by the loan disbursement ratio – on capital flows for 1977–1999 but found no significant effect. Several additional studies show financial market responses to IMF program initiation rather than compliance (Wei *et al.* 2010; Breen & Egan 2019; Gehring & Lang 2020). Our second hypothesis thus reads as follows:

Hypothesis 2. If an IMF program is interrupted, borrowing country institutional investor ratings will decrease and costs of sovereign refinancing will increase.

Taken together, these two hypotheses feed into our theoretical conjecture of a dependency trap: poor program design leads to poor compliance, which contributes to inferior market evaluations of creditworthiness that can ultimately result in a country returning to the IMF to request a new loan.

### 3. Determinants of program non-compliance

#### 3.1. Data and variables

Our program-level analysis uses data on 763 IMF programs from 1980 to 2015, extending coverage of the well-established IMF Monitor database ([www.imfmonitor.org](http://www.imfmonitor.org)). The dependent variable is ‘any interruption’ – a binary variable indicating whether a program was interrupted at least once. A program may be temporarily interrupted when the borrowing country does not meet critical conditions that could be waived, thus delaying the completion of a program review, but where negotiation parties subsequently agree on measures to allow the program to resume. Following IMF staff methodology (Mecagni 1999; Ivanova *et al.* 2001; Nsouli *et al.* 2004), we define a temporary interruption as a program review for a Stand-By Agreement delayed by more than 90 days; and for Extended Fund Facility, (Enhanced) Structural Adjustment Facility, and Poverty Reduction and Growth Facility programs a delay of more than 180 days. An exception to these rules is programs that are canceled and replaced with another, in which case non-completed reviews are not counted as interruptions. While programs may be temporarily interrupted more than once during their lifetime, we consider only the first interruption as an indicator of implementation failure, recording the interruption year as that in which the delayed review was initially scheduled.<sup>2</sup> A program may also be permanently interrupted when negotiation parties are unable to agree on measures that enable it to resume. We code a program as permanently interrupted if a scheduled review was never completed, and take the year in which the review was scheduled as the interruption year. Interruption measures are missing for 27 programs, where we could not ascertain at the time of writing whether they were completed based on publicly available documents.

Program interruptions are the most appropriate measure of non-compliance because they are primarily a result of borrowing governments failing to implement conditions (Arpac *et al.* 2008). An alternative measure of non-compliance is the number of condition waivers. These represent the lower bound of the true implementation deficit, given their absence could still mean that the country did not implement a binding condition (in which case the program would be interrupted and would not be considered by the Executive Board), and are frequently granted for minor slippages such as partial or delayed implementation of conditions. Another measure of non-compliance is the disbursement rate, calculated as the proportion of funds disbursed from funds requested. Failure to draw funds may be related to non-compliance with critical conditions, but may also be due to improvements in economic circumstances that obviate the need for countries to draw credit, making it a noisy measure (Arpac *et al.* 2008). A final measure of non-compliance is a condition “implementation index,” which summarizes the extent to which individual IMF conditions are met. This index is available via the IMF’s Monitoring of Fund Arrangements (MONA) database, but is unsuitable due to data gaps and inaccuracies (IEO 2002; IEO 2007, 2018; Arpac *et al.* 2008).

To identify the types of IMF conditions, we extracted relevant information from the Letters of Intent and Memoranda of Economic and Financial Policies for the original loan approval and for each review. Our key predictor is the number of structural conditions. We also explore different structural policy areas: public sector conditions include reforms to remuneration, pension systems, and social security institutions in the public sector; privatization conditions comprise measures to liquidate nonfinancial state-owned enterprises; and price liberalization conditions include measures to restructure nonfinancial public enterprises, alter pricing policies, and eliminate subsidies (Kentikelenis *et al.* 2016). While each condition only falls into one category, a program typically entails conditions from several policy areas. We also include the number of stabilization conditions, which specify numerical targets for variables pertaining to fiscal, monetary, and exchange rate policy. As conditions may be carried over to subsequent program years, we only consider those in the first year of the program, thereby mitigating concerns about reverse causality. In both cases, we focus on binding conditions, because failure to implement them interrupts the scheduled disbursements of loans (Copelovitch 2010; Woo 2013; Reinsberg *et al.* 2019a,b,c). To remove skewness, we take the natural logarithm of condition counts including an offset of +1 to account for zero values.

Following the IMF compliance literature, we consider three explanations for program interruptions. First, country circumstances may change in unexpected ways that make compliance unlikely (Bird 2008). We control for the percentage change in the US interest rate ( $\Delta$ ), given that refinancing becomes more difficult under higher rates. Data are from the Global Financial Development Database (World Bank 2018). At the country level, we include a dummy indicating a financial crisis (Laeven & Valencia 2013), as well as a percentage change in foreign reserves ( $\Delta$ ) in months of imports, available from the World Development Indicators (World Bank 2015). To capture (unforeseen) changes in political characteristics, we include measures of the absolute difference in the Polity IV ( $\Delta$ ) score, the percentage change in political constraints ( $\Delta$ ), and a dummy for executive elections (Scartascini *et al.* 2018) between program initiation and interruption.<sup>3</sup>

Second, program design may not adequately reflect the initial circumstances of borrowing countries, such as capacity to implement policies, strength of the national economy, and opposition to economic reforms. Including these initial circumstances provides the hardest test of our argument since we expect the Fund to adapt program designs according to these circumstances. If indeed that assumption is accurate, program design should not be systematically related to program interruptions. Initial economic conditions include (logged) per-capita income, GDP growth, foreign reserves, and current account balance (Dreher 2003; Arpac *et al.* 2008; Pop-Eleches 2009), available from the World Development Indicators (World Bank 2015). For political characteristics, which may affect both program design and interruptions (Dreher 2003; Stone 2004; Joyce 2006; Pop-Eleches 2009), we include the Polity IV index to measure democratic institutions (Marshall *et al.* 2010), the veto player index (Henisz 2002) as a measure of political constraints, a dummy for left-wing government ideology (Scartascini *et al.* 2018), and the V-Dem corruption index as a proxy for lack of governance quality (Coppedge *et al.* 2016).

Third, some countries may lack incentives to comply with program conditions because they enjoy a special relationship with major IMF shareholders. Studies show that countries aligned with the United States not only receive more lenient conditionality but are also more likely to fail to honor program commitments because they expect greater leniency (Stone 2004; Dreher & Jensen 2007; Copelovitch 2010; Breen 2013). Well-established

measures of donor interest include a binary indicator of temporary UN Security Council membership (Dreher et al. 2015), UN General Assembly vote alignment with the G7 countries, and UN General Assembly vote alignment with the US (Bailey et al. 2015). The latter distinction is relevant as US alignment may matter over and above G7 alignment (Thacker 1999; Stone 2011; Nelson 2017). We measure all these variables at program initiation.

We also control for IMF program dimensions outside of conditionality, including the originally agreed program duration in months and the loan to quota percentage (Nsouli et al. 2004; Arpac et al. 2008; Bird 2008). To account for global trends that apply to all borrowers, we include decennial period dummies (Stone 2008; Copelovitch 2010). Finally, we include regional dummies to control for heterogeneity across IMF area departments. In robustness tests, we include country-fixed effects, given that many countries in our sample have several programs over the sample period, and year dummies. Data sources and summary statistics are available in Table I.1, Appendix. While our analysis is cross-sectional, it incorporates a host of contextual information relating to individual programs, thus bolstering our inference.

While simple probit models are the most obvious choice for program interruptions as binary-dependent variables, they are liable to endogeneity. Some omitted variables – such as “political will” (Vreeland 2003) – might render correlations between IMF conditions and program interruptions spurious. To mitigate such sources of bias, we adopt an instrumental-variable design. Our instrument for the number of conditions is the average number of conditions of the respective type across all other IMF programs in the same area department initiated in the same year. The intuition behind the instrument’s relevance is that the Fund faces countries with similar characteristics in a given region that require similarly designed programs. Some also attest that the Fund proposes one-size-fits-all programs that consider local circumstances only to a moderate extent (Stiglitz 2002). While agnostic about why programs are similar within specific regions, we find that the average regional program strongly predicts the design of conditionality for any given program ( $F > 45$ ). The instrument is also plausibly excludable because the implementation record of one country is unlikely to be *directly* affected by the conditionality schedule of other countries, specifically when taking common economic shocks such as rising US interest rates into account.<sup>4</sup> We estimate the following system of equations:

$$\begin{cases} P(I_i|S_i, q_i, X_i) = \alpha_{11}\widehat{S}_i + \alpha_{12}\widehat{q}_i + X_i'\beta_1 + \varepsilon_{1i} \\ S_i = \alpha_{21}\left(\frac{1}{R-1}\sum_{r=1}^R S_r\right) + X_i'\beta_2 + \varepsilon_{2i} \\ q_i = \alpha_{31}\left(\frac{1}{R-1}\sum_{r=1}^R q_r\right) + X_i'\beta_3 + \varepsilon_{3i} \end{cases} \quad (1)$$

$$\varepsilon \sim N(0, \Sigma) \quad (2)$$

Equation 1 – the bracketed set of equations – represents a system of equations: the outcome equation for the probability of any interruption  $I_i$  given structural conditions  $S_i$ , stabilization conditions  $q_i$ , and a matrix of control variables  $X_i$ ; and two equations that predict the number of structural and stabilization conditions in an IMF program, using the prevalence of these conditions in the same region as instruments. Equation 2 indicates the assumption of a multivariate error structure, where  $\Sigma$  is the variance–covariance matrix with off-diagonal elements representing estimable cross-equation correlation parameters.

### 3.2. Results

Table 1 shows that structural conditions significantly increase the probability of program interruptions, whereas stabilization conditions do not. In substantive terms, an additional structural condition in the first year of an IMF program increases the likelihood of an interruption between 4.8% and 5.0% across model specifications. Moving over the range of structural conditions, the predicted probability of a program interruption increases from 40.4% at zero conditions to 88.8% at the maximum (43 conditions), holding covariates at the mean.<sup>5</sup>

Control variables are statistically insignificant, apart from some noteworthy exceptions. Lengthier agreements are more likely to fail. Larger loans relative to the country quota also tend to have a higher likelihood of

**Table 1** Types of International Monetary Fund (IMF) conditionality and program interruptions using instrumental-variable analysis

	(1)	(2)	(3)	(4)	(5)
Any interruption					
Structural conditions	0.430*** (0.120)	0.389** (0.158)	0.391*** (0.134)	0.409*** (0.125)	0.383** (0.168)
Stabilization conditions	0.069 (0.203)	0.036 (0.274)	0.225 (0.204)	0.068 (0.210)	0.154 (0.233)
Waivers	-0.302*** (0.070)	-0.227** (0.094)	-0.252*** (0.086)	-0.305*** (0.072)	-0.209** (0.097)
Agreement duration	0.012** (0.006)	0.019*** (0.007)	0.014** (0.007)	0.011* (0.006)	0.023*** (0.008)
Loan-quota ratio	0.041* (0.024)	0.036 (0.025)	0.034 (0.027)	0.044* (0.025)	0.025 (0.030)
US interest rate ( $\Delta$ )		0.009 (0.104)			-0.001 (0.108)
Financial crisis		0.098 (0.177)			0.090 (0.189)
Reserves ( $\Delta$ )		0.010 (0.037)			-0.016 (0.050)
Polity IV index ( $\Delta$ )		-0.052* (0.028)			-0.045 (0.031)
Veto player index ( $\Delta$ )		0.058 (0.461)			0.220 (0.562)
Executive election		-0.016 (0.147)			-0.049 (0.153)
GDP per capita			0.097 (0.090)		0.155 (0.100)
GDP growth			-0.015 (0.012)		-0.021 (0.014)
Reserves			-0.033 (0.032)		-0.034 (0.036)
Current account balance			0.000 (0.008)		-0.002 (0.009)
Polity IV index			0.031** (0.015)		0.028 (0.018)
Veto player index			-0.043 (0.387)		-0.018 (0.530)
Left-wing government			-0.014 (0.130)		-0.055 (0.142)
V-Dem corruption index			0.673** (0.311)		0.528 (0.353)
UN Security Council member				-0.249 (0.202)	-0.184 (0.251)
UNGA vote alignment with G7				0.191 (0.419)	-0.066 (0.591)
UNGA vote alignment with the United States				-0.246 (0.381)	0.030 (0.522)
Structural conditions					
Regional instrument	0.482*** (0.028)	0.461*** (0.034)	0.496*** (0.032)	0.482*** (0.028)	0.449*** (0.037)
Waivers	0.128*** (0.038)	0.203*** (0.047)	0.141*** (0.044)	0.134*** (0.039)	0.194*** (0.048)
Agreement duration	0.008*** (0.003)	0.008** (0.004)	0.006* (0.004)	0.008*** (0.003)	0.008** (0.004)
Loan-quota ratio	-0.004 (0.013)	-0.003 (0.014)	0.001 (0.014)	-0.003 (0.013)	0.003 (0.014)
US interest rate ( $\Delta$ )		-0.050 (0.055)			-0.062 (0.057)
Financial crisis		-0.052 (0.122)			-0.124 (0.114)
Reserves ( $\Delta$ )		-0.007 (0.024)			-0.043 (0.029)
Polity IV index ( $\Delta$ )		0.010 (0.015)			0.016 (0.015)
Veto player index ( $\Delta$ )		-0.189 (0.263)			-0.520* (0.286)
Executive election		-0.035 (0.079)			-0.058 (0.078)

(Continues)

Table 1 Continued

	(1)	(2)	(3)	(4)	(5)
GDP per capita			-0.060 (0.051)		-0.085 (0.053)
GDP growth			-0.009 (0.006)		-0.011 (0.007)
Reserves			-0.051*** (0.017)		-0.052*** (0.018)
Current account balance			0.008 (0.005)		0.011** (0.005)
Polity IV index			0.010 (0.008)		0.017* (0.010)
Veto player index			-0.378* (0.229)		-0.740*** (0.269)
Left-wing government			0.049 (0.074)		0.052 (0.078)
V-Dem corruption index			0.513*** (0.182)		0.460** (0.189)
UN Security Council member				-0.115 (0.113)	-0.029 (0.151)
UNGA vote alignment with G7				-0.150 (0.231)	0.125 (0.304)
UNGA vote alignment with the United States				0.110 (0.207)	-0.039 (0.272)
Stabilization conditions					
Regional instrument	0.464*** (0.054)	0.455*** (0.067)	0.533*** (0.065)	0.453*** (0.055)	0.532*** (0.074)
Waivers	-0.020 (0.043)	-0.021 (0.050)	-0.057 (0.049)	-0.024 (0.045)	-0.021 (0.052)
Agreement duration	-0.002 (0.004)	-0.002 (0.004)	0.002 (0.004)	-0.002 (0.004)	-0.000 (0.004)
Loan-quota ratio	-0.029** (0.014)	-0.031** (0.015)	-0.041** (0.016)	-0.032** (0.014)	-0.038** (0.016)
US interest rate ( $\Delta$ )		-0.071 (0.081)			-0.110 (0.079)
Financial crisis		-0.028 (0.093)			-0.055 (0.099)
Reserves ( $\Delta$ )		-0.037* (0.022)			-0.053* (0.029)
Polity IV index ( $\Delta$ )		0.003 (0.020)			0.011 (0.019)
Veto player index ( $\Delta$ )		-0.575** (0.260)			-0.904*** (0.318)
Executive election		0.134* (0.073)			0.161** (0.076)
GDP per capita			0.111** (0.056)		0.087 (0.056)
GDP growth			0.003 (0.006)		0.007 (0.007)
Reserves			0.024 (0.017)		0.022 (0.019)
Current account balance			-0.008 (0.006)		-0.009 (0.007)
Polity IV index			0.015* (0.008)		0.026*** (0.010)
Veto player index			-0.193 (0.217)		-0.547* (0.288)
Left-wing government			0.030 (0.076)		0.026 (0.079)
V-Dem corruption index			0.071 (0.155)		-0.123 (0.164)
UN Security Council member				0.080 (0.105)	-0.091 (0.139)
UNGA vote alignment with G7				-0.260 (0.246)	-0.575* (0.318)
UNGA vote alignment with the United States				0.210 (0.225)	0.434 (0.288)
Observations (Equation 1)	719	491	531	706	456
Pseudo-R2 (Equation 1)	0.040	0.047	0.063	0.042	0.068

**Table 1** Continued

	(1)	(2)	(3)	(4)	(5)
Observations (Equation 2)	719	491	531	706	456
Adjusted R2 (Equation 2)	0.498	0.503	0.510	0.493	0.522
F-statistic (Equation 2)	304.205	182.067	233.266	300.681	149.200
Observations (Equation 3)	719	491	531	706	456
Adjusted R2 (Equation 3)	0.158	0.171	0.194	0.155	0.192
F-statistic (Equation 3)	72.516	45.493	67.670	68.925	52.173

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Notes: Maximum-likelihood estimation of a system of three equations. The two relevant conditions are instrumented by the count of these conditions from all programs with the same start year in the same area department. Robust standard errors in parentheses.

interruption. We also find that waivers are an effective instrument to avert program interruption. When controlling for these variables, adverse economic shocks and changing political circumstances during program implementation do not affect the likelihood of program interruption. Similarly, there is no evidence that country-specific fundamentals at program onset are related to program interruptions. Surprisingly, donor interest variables are not related to program interruptions. This may indicate that geopolitics affects program design more than implementation. The slightly lower coefficient estimates of structural conditions in the models that include these variables are consistent with this interpretation.

Auxiliary equations confirm the adequacy of our instrumentation strategy. The regional instruments for both condition types are strong. Furthermore, there are more structural conditions in lengthier programs and under circumstances of high corruption, but fewer when the country has more foreign reserves and veto players. For stabilization conditions, significant predictors include the loan-to-quota ratio, the level of reserves, veto players, executive elections, and the level of democracy.

Our next step is to cast light on the design features of programs that are significantly related to interruptions. Through a series of *t*-tests, we provide indicative evidence that the effect of program design on non-compliance depends on the types of policy conditions therein. Table 2 shows the average number of IMF conditions across interrupted and non-interrupted programs. Interrupted programs have a higher number of conditions. In several policy areas, the differences are statistically significant, namely, price deregulation, privatization, and public sector reform. In contrast, the number of conditions is not significantly different across the two groups for fiscal policy reforms and external sector liberalization.

To probe these results further, we conduct instrumental-variable regressions with the logged count of binding conditions in specific policy areas in the first program year as key predictors. We also control for the total number of all remaining binding conditions so that our results do not capture aggregate conditionality effects, given that policy-specific counts of conditions are correlated with the total number of conditions. Consistent with our theoretical expectations, Table 3 shows that programs requiring public sector reform, privatization of state-owned enterprises, and price liberalization are significantly related to program interruptions.

We perform a series of robustness tests. First, we present results from simple probit analyses that ignore the potential endogeneity of conditionality. We again find that the number of structural conditions is significantly positively related to the likelihood of program interruptions (Table I.2, Appendix). Second, we also find significantly positive relationships between program interruptions and specific policy areas of IMF conditionality (Table I.3, Appendix). Third, temporary and permanent interruptions may not be independent from each other, so we estimate a seemingly unrelated probit model that captures potential interdependence through a correlated error structure. Taking endogeneity of conditions into account, we find that structural conditions affect permanent interruptions but not temporary interruptions (Table I.4, Appendix). Fourth, our results are robust to changes in the sample: removing “outlier countries”<sup>6</sup> based on visual inspection of a bivariate plot of the number of conditions and average rates of country program interruptions (Figure I.1, Appendix); and excluding programs in developed countries (Table I.5, Appendix). Fifth, we modify our structural and stabilization condition measures, incorporating structural benchmarks and indicative targets, respectively (both non-binding conditions); results are unchanged (Table I.5, Appendix). Sixth, we rerun analyses with fixed effects. We find that our results are qualitatively unaffected when replacing period dummies with year fixed effects and regional dummies with country-fixed effects (Table I.6, Appendix). Seventh, we verify that results do not hinge on the particular choice of instrument (Table I.7, Appendix). Following advances in related literature (Nelson & Wallace 2017; Lang 2020;

**Table 2** Average number of conditions across non-interrupted and interrupted programs

	Non-interrupted programs	Interrupted programs	Difference	<i>t</i> -Statistic
Public sector	0.263	0.457	0.194***	2.641
Privatization	0.153	0.324	0.171***	2.737
Price deregulation	0.458	0.692	0.233**	2.521
Fiscal policy	3.003	3.388	0.385	1.457
External sector	2.651	2.546	−0.106	0.538

\**p* < 0.1; \*\**p* < 0.05; \*\*\**p* < 0.01. Notes: *t*-Test with unequal variances.

**Table 3** International Monetary Fund (IMF) conditionality across policy areas and program interruptions using instrumental-variable analysis

	Public sector		Privatization		Price liberalization	
<i>Column conditions</i>	1.906***	(0.625)	2.219***	(0.674)	1.484***	(0.546)
Total conditions	0.147	(0.340)	0.137	(0.326)	0.211	(0.356)
Waivers	-0.175*	(0.096)	-0.224**	(0.089)	-0.258***	(0.080)
Agreement duration	0.017**	(0.008)	0.018**	(0.008)	0.025***	(0.006)
Loan-quota ratio	0.016	(0.028)	0.031	(0.025)	0.049*	(0.027)
US interest rate ( $\Delta$ )	-0.068	(0.113)	0.115	(0.091)	0.068	(0.105)
Financial crisis	0.157	(0.165)	0.118	(0.159)	-0.009	(0.190)
Reserves ( $\Delta$ )	0.002	(0.053)	-0.017	(0.049)	-0.007	(0.050)
Polity IV index ( $\Delta$ )	-0.033	(0.028)	-0.064**	(0.031)	-0.051*	(0.028)
Veto player index ( $\Delta$ )	-0.149	(0.536)	0.709	(0.542)	0.581	(0.527)
Executive election	-0.091	(0.124)	-0.053	(0.140)	-0.083	(0.140)
GDP per capita	0.075	(0.092)	0.118	(0.097)	0.062	(0.087)
GDP growth	-0.025*	(0.013)	-0.007	(0.015)	-0.013	(0.015)
Reserves	-0.017	(0.035)	-0.050	(0.036)	-0.032	(0.033)
Current account balance	-0.000	(0.008)	0.001	(0.010)	-0.010	(0.011)
Polity IV index	0.016	(0.018)	0.006	(0.018)	0.016	(0.018)
Veto player index	-0.248	(0.398)	0.329	(0.479)	0.374	(0.417)
Left-wing government	-0.139	(0.144)	-0.074	(0.141)	-0.022	(0.130)
V-Dem corruption index	0.335	(0.403)	0.208	(0.399)	-0.009	(0.418)
UN Security Council member	-0.250	(0.285)	-0.357*	(0.213)	-0.256	(0.262)
UNGA vote alignment with G7	-0.491	(0.610)	-0.427	(0.577)	0.304	(0.558)
UNGA vote alignment with the United States	0.402	(0.529)	0.274	(0.509)	-0.327	(0.485)
Observations (Equation 1)	456		456		456	
Pseudo-R2 (Equation 1)	0.073		0.069		0.074	
F-test ( <i>Column conditions</i> )	13.396		13.618		18.326	
F-test (total conditions)	41.411		42.051		47.856	

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Notes: Maximum-likelihood estimation of a system of three equations. *Column conditions* (Equation 2) instrumented by the count of structural conditions from all programs with the same start year in the same area department. Total conditions (Equation 3) instrumented by the count of total binding conditions from all programs with the same start year in the same area department. Robust standard errors in parentheses.

Stubbs *et al.* 2020), we use a compound instrumentation strategy in which we instrument the number of conditions with an interaction term between countries under programs – a proxy for the IMF budget constraint – and the average number of conditions over the sample period. While the instrument is weak for stabilization conditions, it is strong for structural conditions ( $F > 15$ ) and we continue to find a significant positive relationship with program interruptions.

Finally, we draw on two alternative indicators of IMF program compliance: the (logged) number of waivers (Pop-Eleches 2009), and a binary indicator for a program with more than 25% of the loan undisbursed (Killick 1995). These tap into different dimensions of non-compliance, given their low correlation with program interruptions (Table I.8, Appendix). We find that structural conditions exert a positively significant effect on the (logged) number of waivers (Table I.9, Appendix). For the loan disbursement dummy, structural conditions yield a significant positive relationship when controlling for baseline variables (Table I.10, Appendix), but not for the extended set of controls.

## 4. Market responses to compliance failure

### 4.1. Data and variables

We use two indicators to establish the relationship between program interruptions and market responses. First, we use our program-level data set to investigate how institutional investors adapt borrowing country ratings in

response to program interruptions. Institutional investor data are widely used in sovereign finance literature (DiGiuseppe *et al.* 2012; Gehring & Lang 2020) and are causally prior to investment. Their main drawback is the low frequency of updating – at most semi-annually. Second, we examine the short-term impact of program interruptions on sovereign refinancing costs, measured by the sovereign bond spread relative to the yield of US bonds (Mody & Saravia 2006; Chapman *et al.* 2015; Gehring & Lang 2020). While bond spreads are only available for a limited set of countries, typically emerging market economies, their main advantage is that they are available monthly. This allows us to exploit the fine-grained temporal resolution of our program review data set, which records the exact timepoints when programs are interrupted.

## 4.2. Results

Table 4 presents our main findings on how program interruptions affect the Institutional Investor rating ( $\Delta$ ). We measure the investor rating at the end of a program (if it is fully implemented) or in the year of the interruption (if it is interrupted), controlling for the initial rating at program onset. This essentially accounts for slow-moving country characteristics, as these will be reflected in the original rating. In addition, we control for basic loan characteristics, including agreement duration, loan-to-quota ratio, agreement year, and country-fixed effects. In terms of results, we find no effect for temporary interruptions but obtain a robustly negative relationship between permanent interruptions and investor rating change. In substantive terms, when a program gets permanently interrupted, the investor rating drops by 1.77 points on average ( $p < 0.01$ ) or about 27% of a standard deviation.

We probe the robustness of this finding to alternative model specifications. First, we use the sets of controls that we used when program interruptions were the dependent variable, given these are the most likely confounders (Table I.11, Appendix). Second, besides baseline program variables, we sequentially control for GDP per capita and GDP growth, trade openness and (logged) inflation, and an index of institutional quality from the International Country Risk Guide (Table I.12, Appendix). In both cases, results are substantively unaffected.

Next, using monthly data, we show that program interruptions are related to an increase in bond spreads. Our dependent variable is bond spread ( $\Delta$ ), drawn from the JP Morgan EMBI database and available for 30 countries (World Bank 2021). Our simplest predictor, any interruption, is a dummy variable for the first month after which a program review was delayed, which is when a program will be considered at risk of becoming interrupted. Controlling for the lagged bond spread, year dummies, and program variables, we find a weakly significant positive effect of an interruption on the bond spread ( $p < 0.1$ ), indicating that markets perceive the

**Table 4** Baseline model for the relationship between International Monetary Fund (IMF) program interruptions and changes in investor ratings

	Temporarily interrupted		Permanently interrupted	
	(1)	(2)	(3)	(4)
Investor rating ( $\Delta$ )				
Interruption	−0.362 (0.782)	−0.149 (0.950)	−1.757*** (0.500)	−1.553*** (0.520)
Initial rating	−0.112*** (0.035)	−0.467*** (0.069)	−0.118*** (0.028)	−0.437*** (0.048)
Agreement duration	−0.030 (0.042)	0.080 (0.051)	−0.009 (0.029)	0.068** (0.030)
Loan-to-quota	−0.738*** (0.155)	−0.801*** (0.210)	−0.475*** (0.172)	−0.636*** (0.141)
Agreement year	0.266*** (0.052)	0.530*** (0.067)	0.214*** (0.035)	0.425*** (0.048)
Fixed effects	No	Yes	No	Yes
Observations	312	312	520	520
Adjusted R2	0.217	0.640	0.173	0.551

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Notes: Cross-sectional analysis of programs in which the dependent variable is the change in the institutional investor rating. Ordinary least squares regression with robust standard errors in parentheses.

**Table 5** The impact of interruptions on bond spreads using monthly data

	(1)	(2)	(3)
Bond spread ( $\Delta$ )			
Any interruption (t-1)	0.030* (0.017)	0.030* (0.017)	0.034* (0.018)
Bond spread (t-1)	-0.015*** (0.004)	-0.016*** (0.004)	-0.025*** (0.005)
Agreement duration		-0.000 (0.000)	-0.001** (0.000)
Loan amount		0.002 (0.002)	0.001 (0.002)
Year dummies	Yes	Yes	Yes
Observations	2,236	2,236	1,990
Adjusted R-squared	0.069	0.069	0.081

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Notes: Monthly panel analysis of programs in which the dependent variable is the change in the bond spread. Ordinary least squares regression with standard errors in parentheses. Column 3 only includes countries that ever had an interrupted program.

investment risk to be higher (Table 5). To examine effect dynamics, we run Error Correction Models, further splitting between permanent interruptions and temporary interruptions; we find that permanent interruptions increase bond spreads, but this effect is short-lived ( $p < 0.05$ ) (Table I.13, Appendix).

Overall, we find that IMF program interruptions adversely affect institutional investor ratings and increase the cost of sovereign refinancing. Without other support measures, borrowing countries therefore face increasingly limited access to (private) finance, raising the prospect of a return to the Fund – in short, a dependency trap.

## 5. Conclusions

Despite decades of assistance, many borrowing countries have failed to “graduate” from IMF tutelage and, instead, sign up for repeated lending programs that are often poorly implemented. In this article, we argued that these phenomena are interlinked. Using a data set of 763 IMF programs from 1980 to 2015 and new measures of program interruptions drawn from an original coding of program reviews, we found that a higher number of structural conditions at program onset are robustly related to an increased incidence of program interruptions. In substantive terms, moving from no conditions to 43 structural conditions (the maximum number in our sample) increased the probability of permanent interruption of IMF programs from 40.4% to 88.8%. Further analysis revealed that programs with measures aimed at privatizing state-owned enterprises, lifting price controls, and reforming the public sector are most likely to break down. Using the same program-level data set, we found adverse market reactions to program failure. A permanent interruption was related to a reduction in investor confidence in a country by up to 27% of a standard deviation. Fine-grained analysis using monthly data further confirmed an immediate increase in the bond spread in a country after a program was interrupted.

Bringing these threads together, we argue that these findings reveal a dependency trap for IMF borrowers. By prescribing excessive degrees of structural reform, the IMF increases the likelihood of program failure in its borrowing countries. If and when such failure happens, countries subsequently suffer from a loss of investor confidence and an increase in the cost of sovereign refinancing, leading countries back to the IMF with fresh requests for a loan.

One might question why borrowing governments – arguably more informed about the true costs of structural adjustment – do not object to overly ambitious programs. In fact, they often do. Nigerian ex-president Olusegun Obasanjo withdrew from an informal monitoring arrangement with the Fund due to concerns about “one-size-fits-all structural adjustment programs” that accentuate popular hostility against the institution (AFNWS 2002). During negotiations with the IMF over the release of a loan tranche, the former president of Indonesia, Megawati Soekarnoputri, appealed for “breathing space” in meeting some commitments in view of an ailing economy, further stating that “revising some of the past deals should be understandable, given that they had been difficult to meet” (Jakarta Post 2001). But such protestations are commonly circumvented, as countries ultimately opt for IMF loans in the face of limited outside options or, indeed, no credit at all.

Based on our findings, one might also question why the IMF is unable to offer financial assistance on less onerous terms – an approach that could ameliorate compliance problems and prevent costly interruptions. A potential explanation is that conditions must be tough in order to overcome “moral hazard” on the part of borrowers – the idea that unless resorting to the IMF is seen as a difficult and unpleasant option, countries will have no incentive to pursue sound macroeconomic management on their own (Eichengreen 2000). Another explanation is that IMF staff are unable to fully anticipate implementation problems when designing program conditionality. For instance, the IMF’s 2001 conditionality review states that “[...] conditionality may have been established on policies that were unlikely to be delivered, calling into question the realism of program design” (IMF 2001). For a long time, international financial institutions have deployed policy conditions with little consideration of the domestic political economy (Stiglitz 2002; Abbott *et al.* 2010; IEO 2018). While some aid agencies have embraced political economy analysis, the IMF is not generally seen as a leader in this field, given it primarily recruits neoclassical economists (Chwieroth 2014).

Before discussing the implications of our research, we note two limitations. First, some aspects of the compliance process remain unobserved. We do not know the precise conditions that governments failed to implement that resulted in program failure. Our approach to analyzing interruptions was indirect in that we found programs to break down more often when they involved a higher number of structural conditions. Complementary evidence would consider compliance at the level of conditions, although the only outcome measure currently available for such analysis is the incidence of waivers, which is an imperfect measure of compliance failure. Second, we could not address definitively why IMF staff prescribe structural conditions that are known to cause program failures. In fact, research on the determinants of specific kinds of conditionality is emergent and should be further expanded. We can only make informed guesses based on documentary evidence and our own background interviews.

Building on previous literature that has shown that programs can be “unimplementable by design” – they include too many conditions that overburden the capacity even of well-intentioned governments (Baqir *et al.* 2005; Bird 2005; Reinsberg *et al.* 2021) – we showed that it is especially structural conditions that undermine program compliance. While these conditions were introduced to address the “root causes” of poor performance among frequent borrowers, our findings suggest that they may have been counterproductive by decreasing investor confidence in the ability of borrowers to carry out market-friendly reforms. It appears the IMF has long underestimated the difficulty for borrowing countries to implement such conditions within the short timeframes that their programs entail. These difficulties relate not only to the number of conditions but also to the depth of reform, given that structural conditions require far-reaching changes to domestic political economy arrangements that upset powerful interest groups who can threaten to withhold support for the government (Nelson 1984; Haggard & Kaufman 1992; Rickard & Caraway 2019). Most countries therefore find themselves unable to implement the entirety of these conditions, thus unleashing a cycle of program interruptions, dwindling investor confidence, and increasing sovereign borrowing costs.

The IMF recently proclaimed – not for the first time – that it has broken with past practice of imposing structural conditionality (IMF 2015). Following the Asian Financial Crisis, the IMF recognized that it may have pushed for too many structural conditions in a short timeframe (IMF 2001b). Confronting dwindling demand for its services – with potential borrowers turning away from the institution due to its onerous conditionality and instead accumulating foreign reserves to fend off future crises (Lipsy & Lee 2019) – the IMF leadership embraced conditionality reform. In 2000, the IMF launched the so-called Streamlining Initiative, with the stated goal to reduce structural conditions to a minimum (IMF 2001). The initiative did little to change actual practice (Kentikelenis *et al.* 2016). Then, after 2009, the IMF phased out structural performance criteria as part of a new streamlining strategy that aimed to reduce the stigma of IMF lending (IMF 2018), while maintaining prior actions and structural benchmarks. However, evidence shows that following an initial dip in the total number of structural conditions, by 2014 it had returned to levels equivalent to those witnessed in the mid-2000s prior to the new streamlining strategy (Kentikelenis *et al.* 2016; Brunswijk 2018; Stubbs & Kentikelenis 2018). Indeed, IMF Executive Directors continue to express concerns that the number and pace of structural reforms frequently overwhelms country authorities (IEO 2018, p. 13).

Our results have implications for policymakers and regulators. Several interlocking steps should be taken to overcome the dependency trap we have identified. First, it would be important to reduce the incidence of

program failure, which could be achieved by reducing the number of structural conditions. We believe our findings square with earlier recommendations by IMF in-house research, arguing that “there may be cases where modifications to program design and monitoring could help to improve future program implementation, and these should be actively considered where feasible” (Mecagni 1999, p. 238). In fact, the Streamlining Initiative was an (unsuccessful) attempt to reduce structural conditionality; the IMF may have moved away rhetorically from structural adjustment, but continues with them in practice (IEO 2018; Kentikelenis *et al.* 2016). Heeding its own calls for more realism in program design, the IMF should have greater awareness for the “politics of implementation” of its policies (Khan & Sharma 2003; Drazen & Izard 2004; Short 2019), which is often fraught with difficulties.

Second, there is a long-standing policy debate surrounding “country ownership” in designing and implementing programs. While the IMF has embraced this concept (Boughton 2003), it has remained elusive. Indeed, the non-implementation of so many programs is clear evidence of a lack of country ownership in practice. Given pronounced distributive conflicts and weak implementation capacities in many low- and middle-income countries (Waterbury 1992; Dubash & Morgan 2012; Lederer & Höhne 2021), borrowers need more voice on the scope, depth, and sequencing of reform, besides more flexible time schedules for implementation. In other words, the IMF should become a “responsible regulator” by adapting its regulatory advice to better fit local circumstances (Abbott & Snidal 2013). Third, our findings on the consequences of program failure suggest that the IMF could mitigate adverse financial market reactions by adapting its behavioral response to program interruptions. We found that markets are more forgiving about temporary interruptions. This suggests the Fund should be more accommodative in its policy demands, to avoid the adverse market reactions that occur if interruptions become permanent.

More broadly, our findings have important implications for ongoing policy debates on the Global Financial Safety Net, brought in the spotlight due to the scale of financing needs following the onset of the COVID-19 pandemic (Stubbs *et al.* 2021). Its promise is that through a web of multilateral and regional financing arrangements, as well as bilateral currency swaps, countries will be able to access adequate funds to handle financial crises (Gallagher *et al.* 2021). These resources can be further augmented through bilateral aid and the World Bank’s Development Policy Financing (Clark & Dolan 2021). In principle, this variety of resources should provide more policy space to borrowing countries as they have broader options, some of which may not even require conditionality (like the Latin American Reserve Fund) (Kring & Grimes 2019). However, these outside options often have limited financing capacity to provide support, may require an ongoing IMF program as a precondition to provide their resources, and can have stringent eligibility requirements (Kring & Grimes 2019; Clark 2020; Stubbs *et al.* 2021). This means that the IMF can become the only game in town, thereby giving the organization little incentive to overhaul its lending practices. Widening the Global Financial Safety Net and easing access conditions can powerfully aid low- and middle-income countries to avoid the dependency trap associated with IMF loans.

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## Data availability Statement

The data that support the findings of this study are openly available in IMF Monitor Database at <http://www.imfmonitor.org>.

## Endnotes

- <sup>1</sup> The IMF adopted its Streamlining Initiative in the early 2000s with the aim to reduce the number of structural conditions (Ahmed *et al.* 2001).
- <sup>2</sup> We discard subsequent (temporary) interruptions to the program to mitigate endogeneity issues.

- <sup>3</sup> For programs that were not interrupted, the respective endpoint is the end year of the program.
- <sup>4</sup> A remaining possibility would be that countries compare what peers got in terms of conditions to influence the design of their own programs. We have not come across evidence for such demonstration effects in our interviews.
- <sup>5</sup> Predicted probabilities based on Model 5. Other models yield similar values.
- <sup>6</sup> Outliers are Kazakhstan, Moldova, Mongolia, and Uzbekistan.

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## Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

**Appendix** Supporting information.