

Article

Creating crony capitalism: neoliberal globalization and the fueling of corruption

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Abstract

This article examines how neoliberal policies mandated by the International Monetary Fund (IMF) impact on corruption in developing countries. Combining domestic political analysis with world systems and dependency theories, we hypothesize that these reforms concentrate losses on influential social groups such as businesses and civil servants, who then engage in corrupt practices to maintain their privileged positions. Using an original dataset of IMF policy reforms from 1980 to 2014, we find robust empirical support for our argument. Results of regression-based analysis demonstrate an effect of IMF policy reforms that hold across multiple samples and measure of corruption: 141 countries using a corruption control measure from the International Country Risk Guide; 70 countries on the Business Environment and Enterprise Performance Survey; and 19 countries from the International Crime Victims Survey. Our findings elucidate the link between neoliberal globalization and political capitalism, while offering important policy lessons regarding the design of IMF policy reforms.

Key words: International Monetary Fund, conditionality, structural adjustment, corruption

JEL classification: F33, F34, F53

1. Introduction

How and why can efforts to curb the use of public office for private gain fail? This question has long vexed social scientists. Max Weber pointed to the perversion of ‘modern rational capitalism [with its] structures of law and administration’ into ‘politically determined capitalism’ (Weber 2001, p. xxxviii). This type of capitalism is supported by politically privileged monopoly industries, colonialism, piracy and the extraction of hyper-profits through

the state (Weber, 1978, p. 480; Weber, 2001, p. 122). Such activities are now more commonly referred to as ‘crony capitalism’ (Hutchcroft, 1998; Kang, 2002; King, 2002; Karadag, 2010; Hamm *et al.*, 2012), where patron–client relationships between politically connected capitalists and corrupt bureaucrats entrench both petty corruption—the bribes in interactions between public officials and societal actors—and grand corruption—the abuse of power by political elites to further the spoils of economic elites (Doig and Theobald, 1999; Lambsdorff, 2002; Johnston, 2005).

Social scientists have devoted much attention in identifying the domestic determinants of crony capitalism. For example, modernization theorists hailed economic development as the best insurance against corruption (Lipset, 1960), emphasizing the beneficial role of ‘human capital’ (Glaeser *et al.*, 2004; Svensson, 2005; Mungiu-Pippidi, 2015) and the deleterious impact of resource abundance (Djankov *et al.*, 2008). Others emphasized the role of political systems, arguing corruption is less likely to thrive in democracies due to increased government accountability (Montinola and Jackman, 2002; Larraín and Tavares, 2004; Dumas *et al.*, 2010), and in meritocratic bureaucracies due to limited opportunities for career advancement for corrupt bureaucrats (Evans and Rauch, 1999; Van Rijckeghem and Weder, 2001; Dahlström *et al.*, 2012; McDonnell, 2017).

Likewise, internationally oriented accounts have also sought to explain the determinants of corruption. Notably, one strand of research in international political economy and development studies has elucidated the mechanisms that perpetuate conditions of underdevelopment, including corruption, in the Global South (Chang, 2002; Chang and Grabel, 2004; Amsden, 2007). In a classic formulation, Evans (1979) explained how the state can become an instrument of domestic capitalists and political actors allied with international capital, which—in turn—delivers concentrated benefits in ruling economic and political elites but fails to improve long-run developmental trajectories. Beyond the attention to global capital, these accounts often emphasize the role of the Western-designed bureaucratic apparatus of free-market globalization; that is, powerful international organizations like the International Monetary Fund (IMF), the World Bank and the World Trade Organization. The policies promoted by this group of actors have often aimed to limit the size of states—whether through the advocacy of fiscal austerity or through economic deregulation that can entrench weak regulatory capacity (Babb and Chorev, 2016; Kentikelenis and Babb, 2019). Such policies purportedly help to limit corruption by reducing rent-seeking opportunities (IMF, 2017), notwithstanding evidence that government consumption has no discernible impact on corruption (Gerring and Thacker, 2005; Hopkin and Rodríguez-Pose, 2007; Persson and Rothstein, 2015).

The potentially deleterious effects of IMF and World Bank activities on corruption may appear surprising at first. After all, these organizations have spearheaded the anti-corruption policy agenda. For example, when the World Bank faced mounting criticism in the mid-1990s for overlooking corruption, then-president James Wolfensohn established a working group that urged the Bank to ‘[a]ddress corruption and its economic effects more explicitly in country assistance strategies and the design of projects’ (World Bank, 1997). Similarly, the IMF formulated a policy strategy on governance and corruption to be implemented in its three main activity areas—country lending, technical assistance and economic surveillance (IMF, 1997). With these strategies, the IMF and World Bank positioned themselves as vanguards against crony capitalism (e.g. IMF, 2017).

To scrutinize such claims and advance our understanding of the international determinants of corruption, we focus on the activities of the IMF, given its mandate for advising developing countries on aggregate economic policy. The organization provides countries in financial turmoil with fresh loans at preferential terms (low interest rates and long maturities), in exchange for the implementation of policy reforms ostensibly designed to halt economic freefall. For the first four post-war decades, the IMF almost exclusively advocated ‘stabilization conditions’, stipulating fiscal austerity and currency devaluation with the aim of short-term balance-of-payments stabilization (Polak, 1991; Babb, 2007). Importantly, such conditions took the form of quantitative targets and left governments some discretion to meet them by relying on a policy mix they saw fit (Nelson, 1984). However, since the mid-1980s, the IMF increasingly came to rely on ‘structural conditions’ (Stiglitz, 2002; Easterly, 2005). These entail measures to deregulate economic sectors, liberalize trade and privatize state-owned assets (Summers and Pritchett, 1993), which are commonly identified as ‘neoliberal’ policies (Centeno and Cohen, 2012; Evans and Sewell, 2013; Sassen, 2014). By making access to credit conditional on the commitment to such structural policy reforms, the IMF became an engine of neoliberal globalization (Chorev and Babb, 2009; Centeno and Cohen, 2012; Babb, 2013; Kentikelenis and Babb, 2019).

We posit that neoliberal policies promoted by the IMF foster crony capitalism. Our model of underlying mechanisms proceeds as follows. As noted by political economists, IMF-mandated reforms have distributional consequences: some social groups may benefit, while others lose (Nelson, 1984; Haggard and Kaufman, 1992; Drazen, 2006). This is particularly true for structural conditions, which impose concentrated losses on certain groups—including businesses and public officials—because they are designed to eliminate previously granted privileges. On the one hand, affected businesses may engage in corrupt practices to maintain their privileges through other means (Coate and Morris, 2006). On the other, civil servants may become more corrupt because structural conditions threaten their own benefits, for instance, due to public sector employment reforms (Callaghy, 1989). Furthermore, the general retreat of the state in the economy brought about by structural reforms reduces the ability of the state to detect corrupt behavior (Ban, 2016). Consequently, we expect structural conditions to increase corruption. This expectation does not hold for stabilization conditions, which—although unpopular—do not impose concentrated losses as they leave governments with flexibility to distribute adjustment burdens more evenly.

We test our proposition using a new dataset on IMF conditionality from 1980 to 2014, based on original coding of the Letters of Intent and associated Memoranda of Economic and Financial Policies between the Fund and its borrowers. We rely on a regression-based instrumental variable research design to account for potential endogeneity of IMF conditionality and nonrandom selection into IMF programs. Across multiple samples and measures of corruption, we find robust support for the corruption-inducing effects of structural conditions. An initial analysis uses a perception-based corruption control measure from the International Country Risk Guide for up to 90 countries on a sample period of 30 years; subsequent analyses employ experience-based measures of corruption by firms from the Business Environment and Enterprise Performance Survey and by households from the International Crime Victim Survey, available for a restricted number of observations.

Our findings highlight the self-undermining nature of neoliberal globalization (Babb, 2013). According to neoclassical economics, structural conditions should foster free-market

capitalism and unleash economic growth by strengthening private sector initiatives and improving the business climate (Khan and Knight, 1981). These conditions should also limit corruption by removing rent-seeking opportunities, a notion that became widely accepted among policy economists (Krueger, 1974; Tanzi, 1998) and that provided the IMF with rationale for extending its policy toolkit. However, our results suggest that IMF programs—and neoliberal globalization, of which they are a constituent part—have adverse effects on corruption control, with negative implications for economic growth, social capital and the functioning of democracy in the developing world (Mauro, 1995; Wei, 2000; Rothstein and Eek, 2009). The concentrated losses that structural reforms impose give rise to crony capitalism by furthering collusion between rent-seeking interest groups and public bureaucrats whose status and privileges come under attack. Thus, rather than promoting the Weberian ideal of modern rational capitalism (Weber, 1978), neoliberal globalization fosters a perverse political capitalism.

2. Neoliberal globalization and links to corruption abatement

Neoliberalism is widely understood as a transnational policy paradigm that advocates a reduction of the role of the state in the economy and the promotion of free markets as the legitimate engine of economic development (Centeno and Cohen, 2012; Babb, 2013; Evans and Sewell, 2013). The associated policy prescriptions include liberalization of trade and finance, deregulation of economic activities and the privatization of natural resources and public enterprises (Harvey, 2007). Social scientists broadly accept that the emergence of neoliberal globalization—the growing interconnectedness of national economies on neoliberal terms—was not inevitable, but deliberately brought about by actors with neoliberal preferences: Western states, transnational capitalists and epistemic communities (Harvey, 2007; Kentikelenis and Seabrooke, 2017; Slobodian, 2018). In this context, powerful international organizations like the IMF or the World Bank diffused neoliberal rules and norms at the behest of Western countries, often to the benefit of economic interests within these countries (Chorev and Babb, 2009; Copelovitch, 2010; Malik and Stone, 2018).

Lending programs of the IMF—often known as ‘structural adjustment programs’—are key vehicles through which the organization has mandated governments to adopt neoliberal policies, including measures that promise to limit corruption (Dobbin *et al.*, 2007; Babb, 2009; IMF, 2017). Indeed, in some lending programs, the IMF promoted the overhaul of ministries, revenue collection agencies and public administrations (IMF, 2017, p. 32). The bulk of IMF conditionality, however, has entailed fiscal consolidation and market liberalization: policy conditions to cut government expenditure are ubiquitous in IMF programs, and—while their primary purpose is to restore budget balance—they also purportedly serve to remove rent-seeking opportunities. For example, high public spending is thought to increase the number of public procurement contracts and discretion for officials to handle such projects, thus increasing opportunities for corrupt behavior (Klitgaard, 1988, p. 5; Becker, 1995; Tanzi, 1998, p. 12).

IMF conditions also mandate the elimination of government regulations. While the primary rationale of such conditions is to unleash market forces to promote economic growth (Khan and Knight, 1981), another objective is to reduce corrupt behavior (IMF, 1997). Excessive regulation is seen as a driver of corruption because ‘the existence of such regulations and authorizations gives a kind of monopoly power to the officials who must authorize

or inspect the activities [...] They can thus use their public power to extract bribes from those who need the authorizations or permits' (Tanzi, 1998, p. 10). Furthermore, complex tax laws, reliance on tax officials to collect income taxes and public service provision below market prices all supposedly create entry points for corrupt behavior. Cutting these extensive regulations should therefore limit day-to-day corruption in the bureaucratic service (Klitgaard, 1988; Ades and Di Tella, 1999; Rose-Ackerman, 1999). Since the 1990s, eliminating government regulation has become standard requirement in IMF programs (Kentikelenis *et al.*, 2016; Stubbs and Kentikelenis, 2018).

We question the corruption-abating effect of neoliberal reforms, and instead posit that they can *induce* corruption, especially in the context of IMF programs when pressures on state institutions are elevated by economic crisis.

2.1 Concentrated effects of structural conditions

Structural conditions formulate concrete policy objectives, while at the same time defining the policy instrument by which these objectives ought to be achieved—that is, they ‘micro-manage’ economic policies (Woo, 2013, p. 301). These conditions, which include detailed prescriptions like the elimination of tariffs on certain imported goods, the removal of subsidies for certain industries and the privatization of specific public assets, imply concentrated losses for well-defined groups in society. One such group is businesses in a specific industry. For example, in a lending program to the Philippines, the IMF required the government ‘to abolish one half of the quantitative import restrictions’, as well as to ‘remov[e] altogether the restrictions on entry by foreign banks’ (IMF, 1994, p. 19). The IMF commonly mandates governments to abolish measures that protect some domestic producers from international competition, such as subsidies or tax exemptions. The removal of these protections implies economic losses for these actors.

Other groups that face concentrated losses include the military, public sector employees and urban labor (Haggard and Kaufman, 1989; Nelson, 1992; Rickard and Caraway, 2018). Structural conditions may require governments to adopt reforms to pension systems, public sector wages and other entitlements. For example, Burundi’s IMF loan mandated a ceiling on the government wage bill, covering ‘total labor remunerations [...] for civil servants, contractual employees and military personnel of the central government, including all allowances and bonuses’ (IMF, 2004, p. 54). Structural conditions also (de)regulate private-sector labor relations, typically by allowing nonstandard work contracts, easing dismissal provisions and weakening collective worker rights (Caraway *et al.*, 2012).

Some structural conditions are particularly corruption-inducing as they inflict losses on multiple interest groups. The privatization of state-owned enterprises provides a case in point. In some types of privatization—for example, competitive auctions—managers and workers lose out against global corporations as they lack the financial capacity to submit competitive bids (Lewis and Stein, 1997). Within countries, privatization exacerbates unequal distribution of wealth, which is also known to fuel corruption (You and Khagram, 2005). For example, in Russia in the mid-1990s, ‘well-connected managers owe their wealth to massive privatization’ (Stone, 2002, p. 150), while the less well-connected managers, workers and street-level bureaucrats lose public sector privileges they previously held. Privatization is a key policy area in IMF programs, with around 30% of all programs between 1980 and 2014 including at least one privatization condition (Kentikelenis *et al.*, 2016).

2.2 Affected groups mobilize to retain their privileges

As structural conditions inflict concentrated losses on well-defined, narrow social groups, it is precisely these groups that can mobilize resources to prevent reforms. Indeed, powerful economic interest groups will oppose reforms that reduce their ability to engage in rent-seeking (Drazen, 2006, p. 57). Businesses can offer bribes to prevent the removal of certain exemptions that are beneficial to them or demand alternative compensation (Coate and Morris, 2006). As government elites depend on the support of powerful economic interests for their own survival, they can continue protecting these groups by distributing rents in new ways. Arguably, IMF conditionality cannot eliminate all means by which governments could plausibly distribute economic rents (Coate and Morris, 2006, p. 40); and so, upon removal of one structural distortion, the government devises another measure to continue rent distribution. For instance, the government might be required to privatize a state-owned firm, which removes the possibility of direct subsidies from the general government budget to the firm. However, under private ownership, the firm might benefit from government-devised regulation to protect its previous rents (Drazen, 2006, p. 72). In Uganda, policy conditions targeted the privatization of public enterprises, but the government—hesitant for fear of losing a vital tool to buy political support—managed the process in a nontransparent way to cover up insider deals and conflicts of interest (Mwenda and Tangri, 2005, p. 454).

In addition to firms, civil servants form an important political interest group and can upset policy implementation (Nelson, 1984, p. 107; Haggard and Kaufman, 1989; Waterbury, 1992, p. 182). By controlling the very institutions of the state, public officials are in a particularly powerful position to thwart or render ineffective policy reforms introduced in times of economic crisis (Haggard and Kaufman, 1992, p. 19). This gives civil servants a lever to fend off attempts to reduce their discretion or to erode their status and privileges imposed by structural conditions.

In short, structural conditions provide key economic, bureaucratic and political actors with incentives to be more corrupt. First, some firms must expect to lose protection. Since they have previously invested in the protected sector (and switching to other sectors usually is costly), they are willing to pay for such protection to continue (Coate and Morris, 2006). Second, public officials with some discretion over the implementation of reform will be more susceptible to accept bribes because structural conditions—particularly the ones that require cuts to wages, pensions and social security—threaten their own privileges (Haque and Sahay, 1996). In return for bribes, these officials can use their discretion either to selectively delay implementation of a reform, or to devise a new mechanism to redistribute rents to a bribing firm. Third, governments may tolerate corruption because their own political survival depends on the support of key groups, notably business interests and public sector employees.

Of course, this discussion begs the question of why public officials might self-select into IMF programs that are likely to pose a serious threat to their own material well-being. First, heterogeneity among public officials must be considered: the bureaucrats likely to request and negotiate the terms of IMF loans are overwhelmingly located within the Ministry of Finance, commonly among its higher echelons (Mussa and Savastano, 2000, p. 128). By extension, they might be more willing to sign up to extensive reforms that may hurt the civil service as a whole but leave themselves less affected. In contrast, the civil servants who are most affected—from tax collectors to nurses—lack voice in the negotiations with the IMF. Second, more broadly, while IMF programs can harm the well-being of social actors, they

are often less harmful for social welfare than outright country defaults (Kentikelenis, 2017, p. 302). Consequently, public officials might want to pursue a policy course—like entering an IMF loan—which keeps the country afloat, which also allows some actors to devise ways to compensate for the loss of privileges.

Relatedly, once countries have entered in IMF programs, why might public officials not simply opt to block or delay the implementation of reforms that would harm their welfare, rather than resort to risky bribe-taking? The explanation here relates to the iterative nature of IMF loans: they are not one-off agreements, but entail phased disbursements of loan tranches (Mussa and Savastano, 2000, pp. 88–90). This means that when implementation stalls, the IMF refuses to approve tranche transfers, which also has follow-on implications for economic activity and a government's reputation. In these circumstances, corruption—among some actors, at least—might be tolerated by governments wishing to maintain support among some key constituencies, like businesses or civil servants.

2.3 Observable implications

Our argument entails several empirical implications. First and foremost, we expect a positive relationship between structural conditions and corruption levels. This relationship should be especially pronounced when interest groups are more powerful, because they will be able to mobilize more resources to prevent implementation of reforms, with more corruption as a result.

Second, our argument has testable implications for stabilization conditions. Unlike structural conditions, stabilization conditions leave governments more discretion as to how they implement broad macroeconomic objectives. Political economists have long noted that 'austerity harms many groups' (Nelson, 1984, p. 106), indicating that governments indeed use the flexibility provided by stabilization conditions to spread the adjustment burden more widely across the economy (relative to structural conditions). Government discretion over condition implementation alleviates some potential threats to special interests imposed by conditionality, and corruption may not be affected as a result.

Finally, our theoretical argument also helps predict the timing of effects. While the (envisaged) removal of structural distortions during IMF programs immediately creates incentives for corruption, it will likely persist over the medium term. This is because structural reforms prompt the state and the business sector to engage in patron–client relationships which take some time to emerge and solidify (Weber, 1978; King and Szelenyi, 2005; Ganev, 2007). They reinforce the rise of 'political accumulators'—managers who generate rents through political connections—over 'economic accumulators'—managers who know how to compete in the market (Weber, 1978).

3. Data and methods

3.1 Operationalization

Dependent variables

We test our theory using three data sources. Our first source is the International Country Risk Guide (ICRG). We use as dependent variable the level of corruption control, which coincides with our definition of corruption presented above. This perception-based indicator is widely used among scholars studying corruption (e.g. Adserà *et al.*, 2003; Sandholtz and Gray, 2003; Larraín and Tavares, 2004; Dreher and Siemers, 2009). The measure Control

of Corruption scores low when there is widespread ‘financial corruption in the form of demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments, police protection or loans’ (The PRS Group, 2015). An advantage of this indicator is its broad coverage. Our time-series cross section includes a maximum of 141 developing countries observed from 1984 to 2014; due to missing observations, the panel is unbalanced.¹

Second, we rely on the Business Environment and Enterprise Performance Survey (BEEPS, 2016) to obtain three experience-based corruption measures: incidence of corruption (percentage of firms reporting bribery in dealings with the state); intensity of corruption (percentage of public transactions where a gift or informal payment was requested)²; and corrupt tax official (percentage of firms asked for bribe payments in interactions with tax officials). Matching the survey frequency of 3 years, we average all explanatory variables over consecutive 3-year periods and lag them by one period to allow for some delay in the effect. After discarding countries with data for only one wave, we are left with 70 countries, of which 64 had 2 waves and 6 had 3 waves between 2002 and 2016.

Third, we use data from the International Crime Victims Survey (ICVS). The variable Corruption indicates the percentage of respondents experiencing attempts of bribery in public transactions (van Kesteren, 2003). We discard high-income countries and countries with less than two waves asking corruption-related questions, leaving us with 19 countries and various survey years from 1996 to 2005. These countries are located mostly in Central and Eastern Europe and thus are not representative of all developing countries (see Supplementary Appendix Table B1).

The motivation for using experience-based indicators—in addition to the ICRG measure—relates to criticism against subjective indicators (Stubbs *et al.*, 2014). Using experienced-based measures preempts these concerns and probes the robustness of our findings. While the two survey datasets are the best available sources for experienced-based measures of corruption (Olken and Pande, 2012), the number of observations is substantially reduced.

Independent variables

To measure our IMF variables, we use a newly constructed database on IMF conditionality based on expert coding of individual conditions from all agreements between the IMF and the borrowing countries from 1980 to 2014 (Kentikelenis *et al.*, 2016). This dataset includes detailed information on the different forms and policy areas of conditionality.

Our key predictor is the number of binding structural conditions in an IMF program. These conditions often include measures to privatize state-owned enterprises, liberalize prices and deregulate economic sectors (Summers and Pritchett, 1993). Some structural conditions require changes to government institutions (such as mergers of ministries), establishment of independent expert bodies and public sector employment conditions. We also measure the number of stabilization conditions, which typically entail targets on international reserves, exchange rates, the fiscal balance and the wage bill. Supplementary Appendix Table A1 offers examples for both types of conditions. Following established

1 As the ICRG data are available monthly, we average the country observations for a given year.

2 A small caveat of these corruption indicators is that nonresponse is treated as corruption experience.

procedures (Copelovitch, 2010; Woo, 2013; Stubbs *et al.*, 2017), we only consider binding conditions because they directly determine scheduled disbursements of loans. We also control for the presence of an IMF program using a binary indicator variable to capture effects unrelated to conditionality such as technical assistance.

To obtain the total effect of an IMF program (including its conditionality effect), all three measures need to be considered. The coefficient on conditionality yields the differential impact of a program with a specific condition compared to a program without such condition. We include IMF variables using a one-period lag, while the main analysis additionally examines deeper annual lags.

Control variables

We rely on a standard set of controls identified in the corruption literature; summary statistics and detailed variable definitions with data sources are available in [Supplementary Appendix Table A1](#). An initial control is the natural log of gross domestic product (GDP) per capita, given that the level of development closely relates to efficient institutions.³ We also include the Polity IV Index to capture democratic political systems as they increase the likelihood of exposing corrupt practices and reduce incentives for state bureaucrats to ask for bribes (Ades and Di Tella, 1999; Montinola and Jackman, 2002; Larraín and Tavares, 2004). Furthermore, we control for the Human Capital Index from the Penn World Tables since education increases demand for accountability (Mungiu-Pippidi, 2015); and an indicator of regime durability—the number of years that the current political order has survived since the last transformation—from the Polity IV dataset (Marshall *et al.*, 2010), to account for legacies of political systems (Dreher *et al.*, 2009; Charron and Lapuente, 2010; Jetter *et al.*, 2015).

In addition, we consider a series of variables that capture opportunities for rent-seeking. First, urbanization—the share of the population in urban areas—may affect corruption: higher concentration of population in urban areas can yield more opportunities for interaction between bribe takers and givers (Billger and Goel, 2009). Second, we use mineral rents as a percentage of GDP as well as the natural logarithm of oil production per capita (Treisman, 2000; Adserà *et al.*, 2003; Fréchette, 2006) since countries relying on natural resources are particularly vulnerable to corruption given the adverse effects of natural resource endowments on government accountability (Mahdavy, 1970; Ross, 2001; Djankov *et al.*, 2008). Third, increased import dependence may provide more opportunities for officials to collect rents, such as by threatening delays in the processing of essential imports (Fréchette, 2006). Finally, government expenditure can also create rent-seeking opportunities (Tanzi, 1998; Adserà *et al.*, 2003) although there is no robust evidence that government size systematically affects corruption (Persson and Rothstein, 2015).

For the BEEPS and ICVS samples, additional control variables are available from these survey datasets. In all models, we include country-fixed effects⁴ to account for time-invariant factors such as colonial history, legal origin, latitude, religion, ethno-linguistic

3 GDP per capita might not be fully exogenous with respect to corruption (Treisman, 2000), but there is no satisfactory solution to address the problem (Fréchette, 2006). Following Jetter *et al.* (2015), we replaced GDP per capita with life expectancy and obtained equivalent results. Therefore, we only report regressions with GDP per capita here.

4 We also conducted a Hausman test, which rejected the use of random-effect estimation ($P < 0.001$).

fractionalization and federalism (La Porta *et al.*, 1999; Treisman, 2000; Adserà *et al.*, 2003); and time-fixed effects to account for time-variant factors that impact corruption equally across countries. We calculate cluster-robust standard errors, which adjust for heteroskedasticity and serial correlation.⁵

While the aforementioned variables are used in previous research, there is no mainstay model of corruption control. To ensure our model is parsimonious but minimizes our own discretion, we use Bayesian model selection to identify the most plausible set of control variables from the range of theoretically meaningful covariates. The result of this exercise yields two sets of control variables depending on the direction of the model selection approach. Under a specific-to-general approach, in which one starts from the smallest possible model and includes new variables that make the biggest contribution to model fit, control variables include GDP per capita, democracy, regime durability, urbanization, mineral rents and oil production per capita. Under a general-to-specific approach, which initially starts with all potential variables and subsequently drops variables that have zero inclusion probability or that contradict theoretical expectations, the set of control variables includes two more variables—government expenditure and the human capital index. In the main analysis, we use the general-to-specific approach, leaving the specific-to-general approach as robustness check. Further details on Bayesian model selection are in [Supplementary Appendix Table C1](#).

3.2 Remedies to potential endogeneity

We face a double inferential challenge of nonrandom selection into IMF programs and endogeneity of conditions. For example, countries whose control of corruption deteriorates may be more likely to, first, participate in an IMF program and, second, receive certain types of conditions within the program.⁶ Nonrandom selection into IMF programs is a well-known inferential challenge. The established procedure to address this challenge is to estimate a selection model using observed characteristics, and then use the inverse Mills ratio (IMR) as a control variable in the outcome equation (Heckman, 1976; Atoyan and Conway, 2006; Woo, 2013), or include a selection equation and estimate a system of equations via maximum likelihood (Roodman, 2012). Drawing on previous literature, we use the following variables to explain selection of countries into IMF programs: Past programs counts the number of program years over the preceding 5 years as previous participation in IMF programs reliably predicts current participation (Easterly, 2005); Countries under programs counts the number of countries participating in IMF programs, which affects the Fund's resource availability and—in turn—willingness to commence new programs (Vreeland, 2003, p. 88); and United Nations General Assembly (UNGA) Vote Alignment, measuring voting similarity between borrowing country and G7 countries in the UNGA (Bailey *et al.*, 2017), since allies of big powers receive favorable treatment by the IMF (Thacker, 1999; Barro and

5 We reject the null hypothesis of 'no autocorrelation' using the Wooldridge test ($P < 0.001$). Note that we do not cluster errors in the ICVS sample due to lack of sufficient observations.

6 Empirical approaches such as the Granger causality test do not provide a clear answer regarding the most likely direction of the effect. Following the Granger causality test approach, we verified that some past realizations of conditionality affect current levels of corruption ($P < 0.01$). At the same time, however, past realizations of corruption affect current conditions, albeit less significantly ($P < 0.05$).

Lee, 2005; Dreher *et al.*, 2009). We also add a series of macroeconomic variables to capture the economic rationale for an IMF program, including GDP per capita, GDP growth, level of reserves (in months of imports) and debt service as a percentage of GNI (Vreeland, 2003; Moser and Sturm, 2011; Oberdabernig, 2013); as well as domestic political variables that could determine participation, namely institutional democracy and executive elections (Dreher, 2003). Finally, we include regional and year-fixed effects.

To account for endogeneity of conditionality, we follow the methodological approach of Stubbs *et al.* (2018). We instrument the number of each type of condition through the interaction of the within-country average number of conditions and the period-specific budget constraint of the Fund, as measured by the number of countries under programs. This compound instrument fulfills the relevance criterion because when the IMF assists more countries in any period, it has less funds available to lend and thus assigns more conditions for approving loan requests (Dreher and Vaubel, 2004).⁷ It fulfills the exclusion criterion because country-specific changes in conditionality that deviate from its long-run average are brought about only by IMF decisions not pertaining to a given country (Lang, 2016).

Thus, we perform analyses over systems of equations via maximum likelihood estimation (Roodman, 2012). The exact number of equations varies across the three dependent variables, because data limitations prevented convergence for more complex models in the BEEPS and ICVS samples.

The models for the ICRG sample entail the following four equations:

$$\text{IMF}_{it} = \Phi(Z_{it}'\Xi + X_{it}'\Gamma_1 + \phi_{1t}), \quad (1)$$

$$\hat{S}_{it} = \beta^S z_{it}^S + X_{it}'\Gamma_2 + \omega_{2i} + \phi_{2t}, \quad (2)$$

$$\hat{Q}_{it} = \beta^Q z_{it}^Q + X_{it}'\Gamma_3 + \omega_{3i} + \phi_{3t}, \quad (3)$$

$$y_{it}^I = \beta_1 \text{IMF}_{it} + \beta_2 \hat{S}_{it} + \beta_3 \hat{Q}_{it} + X_{it}'\Gamma_4 + \omega_{4i} + \phi_{4t} + \varepsilon_{4it}. \quad (4)$$

Equation (4) is the outcome equation. The key predictors are the three IMF variables—fitted values of IMF program (IMF_{it}), structural conditions (\hat{S}_{it}) and stabilization conditions (\hat{Q}_{it})—as well as control variables (X_{it}), country-fixed effects (ω_{4i}), year-fixed effects (ϕ_{4t}) and an idiosyncratic error (ε_{4it}). Equation (1) is a probit-type selection equation for IMF programs. Equations (2) and (3), respectively, model the number of structural conditions (\hat{S}_{it}) and stabilization conditions (\hat{Q}_{it}) using compound instruments (denoted by z_{it}^S and z_{it}^Q). We assume a multivariate normal error structure allowing for cross-equation correlation of errors (Roodman, 2012).

For the BEEPS sample, we adapt the estimating system in two ways because the smaller sample size prevents the above system from converging. First, similar to the ICRG sample, we run an IMF selection model (see Equation (5)); but instead of calculating fitted IMF variables, following the Heckman (1976) approach, we instead compute the IMR. Second, in

7 Dreher and Vaubel (2004) show that bigger loans come with more conditions attached, since the Fund has more of its assets at stake and thus requires more safeguards. We generalize this argument to the number of loan programs, which should positively relate to the size of loans under management.

the respective conditionality equations, we use as instruments (z_{it}^S and z_{it}^O) the one-period lagged number of respective conditions instead of the compound instruments because they are weak in this context ($F \ll 10$).⁸ The IMR and fitted conditionality variables are then added to the outcome equation (see Equation (6)). We again assume a multivariate normal error structure.

$$\text{IMF}_{it} = \Phi(Z_{it}'\Xi + X_{it}'\Gamma_5 + \phi_{5t} + \epsilon_{5it}), \quad (5)$$

$$y_{it}^{\text{II}} = \beta_1 \text{IMF}_{it} + \beta_2 \hat{S}_{it} + \beta_3 \hat{Q}_{it} + X_{it}'\Gamma_6 + \gamma_6 \hat{\text{IMR}}_{it} + \omega_{6i} + \phi_{6t} + \epsilon_{6it}. \quad (6)$$

The ICVS sample has the fewest observations, which imposes even more constraints on our ability to control for endogeneity. Specifically, we only correct for nonrandom selection of IMF programs using the Heckman approach (as per Equation (5)) with an outcome equation augmented by the IMR (Equation (7)).

$$y_{it}^{\text{III}} = \beta_1 \text{IMF}_{it} + \beta_2 \hat{S}_{it} + \beta_3 \hat{Q}_{it} + X_{it}'\Gamma_7 + \gamma_7 \hat{\text{IMR}}_{it} + \omega_{7i} + \phi_{7t} + \epsilon_{7it}. \quad (7)$$

4. Empirical results

4.1 Results using perception-based indicators

Table 1 presents coefficient estimates for various aspects of IMF programs on the ICRG control of corruption measure for different time lags. Consistent with our argument, we find across all lags that structural conditions exert a statistically significant negative impact on corruption control. Based on the 1-year model, every additional structural condition reduces corruption control—measured over a six-point range—by half a decimal point. Four additional structural conditions (roughly one standard deviation) decrease corruption control by 0.26 (roughly one-fourth of its standard deviation). In terms of magnitude, this effect is comparable to full-blown democratization—an increase in the Polity IV index by more than 10 points.

Conversely, stabilization conditions remain insignificant, aside from a weakly significant positive coefficient in the 5-year model ($P < 0.1$). Similarly, the residual effect of IMF programs is indistinguishable from zero. Most other control variables are not significant, except mineral rents (which weakens corruption control) and regime durability (which strengthens it). This suggests that our statistical model yields rather conservative estimates. Diagnostic statistics also indicate our model specifications are appropriate. The best-fitting models explain about 30% of the within-country variation.

For the auxiliary conditions equations in our system, we find that the fund imposes more structural conditions in less developed and more urbanized countries, while stabilization conditions are more numerous in democracies, urbanized countries and countries with low human capital. Most importantly, the compound instruments are highly correlated with the respective conditions they seek to instrument. Model diagnostics indicate our instruments are strong, with the Kleibergen-Paap F -statistic comfortably passing the minimum threshold

8 We thus predict the (lagged) number of conditions by their second lag, standard controls and time effects. The identifying assumption is that there is no independent impact of twice-lagged conditionality on the outcome other than through its effect on lagged conditionality.

Table 1 IMF conditionality and perceived control of corruption (ICRG sample)

	<i>t</i> – 1	<i>t</i> – 2	<i>t</i> – 3	<i>t</i> – 4	<i>t</i> – 5
	(1)	(2)	(3)	(4)	(5)
Control of corruption					
Structural conditions	–0.051** (0.025)	–0.043* (0.025)	–0.044* (0.026)	–0.057** (0.026)	–0.067*** (0.026)
Stabilization conditions	0.148 (0.108)	0.149 (0.107)	0.145 (0.106)	0.170 (0.111)	0.165* (0.094)
IMF program	–0.062 (0.140)	0.067 (0.155)	0.120 (0.143)	0.092 (0.137)	0.025 (0.132)
Log(GDP per capita)	–0.370 (0.419)	–0.269 (0.419)	–0.233 (0.393)	–0.120 (0.444)	–0.127 (0.432)
Human capital index	2.290 (1.452)	2.165 (1.443)	1.948 (1.400)	1.930 (1.504)	1.738 (1.441)
Regime durability	0.014* (0.008)	0.013* (0.008)	0.013* (0.008)	0.013 (0.009)	0.012 (0.009)
Polity IV index	–0.008 (0.030)	–0.012 (0.029)	–0.012 (0.027)	–0.018 (0.028)	–0.018 (0.025)
Urbanization	–0.042 (0.037)	–0.041 (0.036)	–0.037 (0.034)	–0.039 (0.036)	–0.035 (0.035)
Government expenditure	–0.006 (0.017)	–0.005 (0.017)	–0.005 (0.017)	–0.005 (0.018)	–0.012 (0.017)
Mineral rents	–0.030 (0.029)	–0.039 (0.029)	–0.047 (0.030)	–0.059* (0.035)	–0.073* (0.039)
Log(Oil per capita)	0.050 (0.815)	–0.019 (0.793)	–0.112 (0.745)	0.040 (0.771)	0.210 (0.762)
Structural conditions					
Compound instrument	0.063*** (0.006)	0.063*** (0.006)	0.063*** (0.006)	0.062*** (0.006)	0.065*** (0.007)
Log(GDP per capita)	–1.194* (0.639)	–1.198* (0.640)	–1.165* (0.634)	–1.344* (0.702)	–1.496* (0.774)
Human capital index	–0.838 (0.835)	–0.861 (0.832)	–0.843 (0.831)	–0.860 (0.857)	–1.256 (0.860)
Regime durability	0.010 (0.010)	0.011 (0.010)	0.010 (0.010)	0.011 (0.011)	0.011 (0.012)
Polity IV index	0.025 (0.041)	0.024 (0.041)	0.023 (0.041)	0.025 (0.042)	0.027 (0.043)
Urbanization	0.056* (0.029)	0.056* (0.029)	0.054* (0.029)	0.054* (0.032)	0.060* (0.036)
Government expenditure	–0.018 (0.035)	–0.018 (0.035)	–0.018 (0.035)	–0.020 (0.036)	–0.019 (0.038)
Mineral rents	–0.066 (0.063)	–0.066 (0.063)	–0.065 (0.063)	–0.058 (0.067)	–0.030 (0.068)
Log(Oil per capita)	–1.645 (1.162)	–1.661 (1.150)	–1.652 (1.132)	–1.642 (1.178)	–1.537 (1.241)
Stabilization conditions					
Compound instrument	0.012* (0.007)	0.011* (0.007)	0.011* (0.007)	0.011* (0.007)	0.013* (0.007)
Log(GDP per capita)	–1.616 (1.714)	–1.629 (1.706)	–1.470 (1.677)	–1.689 (1.718)	–1.654 (1.815)

continued

Table 1 Continued

	<i>t</i> - 1	<i>t</i> - 2	<i>t</i> - 3	<i>t</i> - 4	<i>t</i> - 5
	(1)	(2)	(3)	(4)	(5)
Human capital index	-9.028** (4.261)	-9.113** (4.226)	-9.011** (4.164)	-8.900** (4.348)	-9.363** (4.528)
Regime durability	-0.025 (0.033)	-0.023 (0.033)	-0.025 (0.033)	-0.021 (0.034)	-0.010 (0.036)
Polity IV index	0.201** (0.092)	0.198** (0.093)	0.189** (0.093)	0.188** (0.094)	0.195** (0.097)
Urbanization	0.252* (0.131)	0.255* (0.131)	0.246* (0.131)	0.240* (0.142)	0.254* (0.147)
Government expenditure	-0.006 (0.080)	-0.004 (0.080)	-0.007 (0.079)	-0.022 (0.079)	-0.018 (0.079)
Mineral rents	0.073 (0.091)	0.077 (0.090)	0.081 (0.090)	0.088 (0.114)	0.133 (0.150)
Log (Oil per capita)	-3.341 (3.147)	-3.408 (3.118)	-3.363 (3.048)	-3.703 (2.959)	-4.389 (2.918)
IMF program					
Past programs	0.252*** (0.029)	0.247*** (0.029)	0.237*** (0.030)	0.236*** (0.031)	0.250*** (0.031)
UNGA vote alignment	3.276*** (0.807)	3.230*** (0.795)	3.204*** (0.800)	3.159*** (0.816)	3.638*** (0.871)
Countries under programs	-0.011 (0.007)	-0.011 (0.007)	-0.009 (0.007)	-0.009 (0.007)	-0.013* (0.008)
Log(GDP per capita)	-0.312*** (0.073)	-0.317*** (0.073)	-0.313*** (0.075)	-0.306*** (0.076)	-0.294*** (0.076)
Polity IV index	0.000 (0.008)	-0.001 (0.008)	-0.002 (0.008)	-0.003 (0.008)	-0.005 (0.008)
Reserves	-0.054*** (0.014)	-0.055*** (0.014)	-0.052*** (0.015)	-0.051*** (0.015)	-0.049*** (0.017)
GDP growth	-0.015** (0.007)	-0.014** (0.006)	-0.014** (0.007)	-0.014** (0.007)	-0.015** (0.007)
Debt service	0.022*** (0.008)	0.023*** (0.008)	0.025*** (0.009)	0.025*** (0.009)	0.024*** (0.009)
Executive elections	0.070 (0.070)	0.065 (0.070)	0.090 (0.070)	0.105 (0.071)	0.090 (0.075)
Diagnostics					
Observations	2140	2143	2145	2149	2153
Within- <i>R</i> ²	0.31	0.30	0.30	0.30	0.30
Joint <i>F</i> -statistic	53.97	66.39	70.96	78.53	97.56

Notes: Multiple equation instrumental variable maximum-likelihood regression. The table shows coefficients of each equation, suppressing country- and year-fixed effects where applicable. All predictors are included at the lag specified in the column header. A selection equation for IMF programs was estimated to take nonrandom selection into account, and in which all predictors are lagged one additional period. For each type of conditionality, the respective number of conditions is instrumented using the interaction between the country-specific mean of these conditions and the number of countries under IMF programs in a given year. Robust standard errors clustered on countries in parentheses.

P* < 0.1; *P* < 0.05; ****P* < 0.01.

of 10 (Stock and Staiger, 1997). Findings in the auxiliary IMF program equation show that country selection is predicted by past exposure to IMF lending, voting behavior in the UN General Assembly and macroeconomic fundamentals that reflect need for IMF credit (GDP per capita, GDP growth, foreign reserves in months of imports and debt service), as is consistent with theoretical expectations. However, domestic political factors are insignificant.

4.2 Experience-based corruption: enterprise survey

Table 2 reports the results based on the BEEPS indicator of corruption: incidence of corruption. As shown in Supplementary Appendix Table B1, our results are also robust to two alternative outcomes, intensity of corruption (Supplementary Appendix Table B10) and the proportion of firms reporting bribery when dealing with tax officials (Supplementary Appendix Table B11). Unlike before, a positive coefficient on the IMF variables now indicates more corruption. Furthermore, we use data averaged over 3-year periods to study the impact of IMF variables under a one-period lag. Models 6–8 present fixed-effects models (without selection correction and compound instrumentation) using no controls, country-level controls and both country and firm-level controls, respectively; Models 9–11 do so while accounting for nonrandom selection into IMF programs and Models 12–14 account for both nonrandom selection and endogeneity of conditions.

In all models, we find evidence of a corruption-inducing effect of structural conditions. Based on Model 8, four additional conditions are associated with 5.7% more firms reporting corruption incidents (about 30% of its standard deviation). In instrumental variable regressions (Models 12–14), coefficients on structural conditions are up to three times higher. Some models also indicate a corruption-abating effect of stabilization conditions, but this result is substantively smaller and less significant. A cursory examination of control variables suggests that models conform to previous research findings. Higher levels of development and democratic governance are related to less corruption, while corruption flourishes under more entrenched regimes. None of the firm-level covariates are statistically significant.

Overall, the BEEPS analysis corroborates our previous finding that structural conditions have an adverse impact on corruption. Consistent with the analysis, our interpretation is that some firms have incentives to offer bribes to mitigate the negative repercussions of structural adjustment measures; while public officials—the group most affected by structural measures—are more likely to ask for bribes to improve their material situation.

4.3 Experienced-based corruption: household survey

Table 3 offers another check of our argument using the ICVS household survey. The dependent variable is the percentage of households victimized by petty corruption in the public administration. As the small sample precludes instrumental-variable analysis, we first conduct fixed-effects regressions without bias correction from selection of countries into IMF programs (Models 15–17), followed by analyses with two alternative sets of variables in the IMF program selection model, including past programs, GDP per capita and Polity IV index in the initial set (Models 18–20), as well as GDP growth and reserves in the extended set (Models 21–23).

In all models, the coefficient of structural conditions is positively related to reported experience of corruption. Based on Model 15, 10 additional conditions (the standard deviation in this sample) are related to increases in the number of households reporting corruption by

Table 2 IMF conditionality and bribery incidence reported by firms (BEEPS sample)

	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Structural conditions	1.446** (0.451)	1.431** (0.417)	1.414** (0.440)	1.527*** (0.440)	1.443** (0.418)	1.496** (0.461)	3.493* (1.513)	2.702* (1.280)	3.972* (1.768)
Stabilization conditions	-0.250 (0.157)	-0.431* (0.188)	-0.487* (0.207)	-0.249 (0.161)	-0.399* (0.180)	-0.388* (0.167)	-0.497 (0.494)	-0.791 (0.591)	-0.904 (0.498)
IMF program	0.052 (3.701)	0.938 (3.661)	0.473 (4.725)	7.976 (8.666)	16.831 (8.699)	5.957 (7.057)	8.275 (9.277)	18.400* (8.905)	8.174 (7.817)
Log(GDP per capita)		-24.709 (23.917)	-43.125 (27.444)		-11.490 (21.917)			-10.638 (22.013)	-39.337 (26.811)
Polity IV		-1.250 (0.684)	-0.943 (0.612)		-1.435* (0.687)			-1.373* (0.625)	-1.025 (0.556)
Regime durability		0.122 (0.105)	0.184 (0.118)		0.046 (0.108)			0.031 (0.117)	0.138 (0.123)
Log(Oil per capita)		1.353 (0.924)	1.195 (0.948)		0.955 (0.846)			1.006 (0.794)	1.042 (0.879)
Mineral rents (% GDP)		-0.724 (0.476)	-0.463 (0.452)		-0.926* (0.460)			-0.839 (0.449)	-0.372 (0.436)
Age of firms			-0.149 (0.588)						-0.676 (0.571)
State ownership (%)			-1.350 (1.960)						-0.294 (2.033)
Foreign-owned firms (%)			-0.536 (0.426)						-0.393 (0.435)
Firms with foreign inputs (%)			-0.211 (0.232)						-0.301 (0.211)
Foreign inputs (%)			0.240 (0.310)						0.370 (0.290)

continued

Table 2 Continued

	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inverse Mills Ratio	-	-	-	-4.621 (3.546)	-9.924* (4.256)	-3.862 (3.391)	-4.631 (3.922)	-10.696* (4.183)	-5.336 (3.319)
Structural conditions									
Lagged structural conditions	-	-	-	-	-	-	0.186*** (0.043)	0.186*** (0.042)	0.164*** (0.045)
Control variables							yes	yes	yes
Stabilization conditions									
Lagged stabilization conditions	-	-	-	-	-	-	0.312*** (0.046)	0.303*** (0.045)	0.379*** (0.060)
Control variables	-	-	-	-	-	-	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within-R ²	0.19	0.30	0.38	0.19	0.32	0.23	0.19	0.32	0.23
Observations	145	128	126	139	125	123	139	125	123
Joint F-statistic	-	-	-	-	-	-	24.34	31.96	33.67

Notes: Dependent variable is 'Incidence of corruption'—the percentage of firms facing bribe requests when dealing with public officials. All predictors lagged by one period in a panel with 3-year periods. Models 1–3 present fixed-effects estimations with varying sets of controls. Models 4–6 additionally estimate selection models for IMF program participation and include the IMR as additional predictor. Models 7–9 additionally instrument the number of conditions for each type by their respective one-period lag. The joint F-statistic refers to both instruments. Robust country-clustered standard errors in parentheses.

* $P < 0.1$; ** $P < 0.05$; *** $P < 0.01$.

Table 3 IMF conditionality and experienced corruption by individuals (ICVS sample)

	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Structural conditions	0.199* (0.093)	0.463*** (0.127)	0.435*** (0.106)	0.201* (0.104)	0.527** (0.149)	0.475*** (0.097)	0.201* (0.104)	0.529** (0.152)	0.478*** (0.098)
Stabilization conditions	-0.105 (0.125)	-0.085 (0.135)	0.037 (0.124)	-0.120 (0.174)	-0.169 (0.174)	-0.030 (0.141)	-0.134 (0.180)	-0.163 (0.171)	-0.029 (0.149)
IMF program	-3.227 (3.924)	9.776 (5.265)	7.548 (4.463)	-4.711 (8.041)	14.998 (9.099)	12.088 (9.243)	-3.223 (8.712)	14.141 (9.148)	11.110 (9.348)
Log(GDP per capita)		112.565** (34.769)	102.430*** (29.062)		136.970** (39.153)	119.213** (35.963)		136.744** (39.360)	118.590** (35.739)
Polity IV		-4.137 (3.491)	-3.030 (2.925)		-5.603 (4.527)	-4.212 (4.422)		-5.452 (4.506)	-4.074 (4.459)
Regime durability		-7.889** (3.194)	-6.299* (2.734)		-9.470* (4.036)	-7.478* (3.224)		-9.420* (4.025)	-7.452* (3.250)
Urbanization		2.015 (2.377)	2.014 (1.961)		2.879 (2.845)	2.435 (2.083)		2.966 (2.918)	2.539 (2.110)
Feel safe in dark (%)		-1.494** (0.357)	-1.404*** (0.298)		-1.431*** (0.337)	-1.387** (0.353)		-1.427*** (0.316)	-1.374*** (0.331)
Police does good job (%)		-0.105 (0.075)	-0.010 (0.076)		-0.064 (0.080)	0.002 (0.086)		-0.062 (0.080)	0.005 (0.088)
High-status neighborhood (%)		0.438*** (0.125)	0.357** (0.109)		0.479** (0.134)	0.387** (0.110)		0.482** (0.137)	0.390** (0.112)

continued

Table 3 Continued

	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Experience of fraud (%)			0.262* (0.120)	1.408 (3.379)	-0.076 (3.491)	0.238** (0.087)	0.518 (3.734)	0.409 (3.610)	0.234** (0.086) -0.097 (3.369)
Inverse Mills Ratio									
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(Within-)R ²	0.76	0.93	0.96	0.72	0.85	0.88	0.72	0.85	0.88
Observations	44	43	43	42	42	42	42	42	42
IMF selection equation	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo-R ²	-	-	-	0.40	0.40	0.40	0.47	0.47	0.47

Notes: Dependent variable is 'Corruption'—the percentage of individuals experiencing petty corruption. All predictors lagged by one period in a panel with gaps and at least two survey waves per country. Models 1–3 present fixed-effects estimations with varying sets of controls. Models 4–6 additionally estimate selection models for IMF program participation. Models 7–9 use additional variables in the selection equation. No instruments were used for conditions due to the low number of observations (as models do not converge otherwise). Standard errors in parentheses.

*P < 0.1; **P < 0.05; ***P < 0.01.

2.0% ($P < 0.05$)—equivalent to one-fifth of its standard deviation. While the magnitude of this effect is slightly smaller than in the other samples, it is just as statistically significant. Conversely, stabilization conditions have no effect on reported corruption.

Country-level control variables behave as expected but are not always statistically significant. We also obtain results on a number of household-level covariates. For example, if a higher percentage of households report they feel safe after dark, their reported corruption is lower—suggesting that corruption is less likely to flourish in more capable states with well-functioning police and higher levels trust. Conversely, corruption is higher in wealthier neighborhoods, as rent extraction is more profitable if targeted at high-income households (see parallels with [Mocan, 2008](#)). Finally, the incidence of fraud—the term for ‘corruption’ in the private sector and an obvious confounder in this analysis—relates positively to reports of corruption, but does not undermine the significant finding on key variables of interest.

4.4 Robustness checks

We conduct additional robustness checks using the ICRG dataset.⁹ We briefly report the findings below; full tables are provided in [Supplementary Appendix Table B](#). First, we use an alternative set of control variables in the outcome equation ([Supplementary Appendix Table B1](#)). Specifically, we use the smaller set obtained from a specific-to-general Bayesian model selection approach, which removes human capital index and government expenditure from the control set. We corroborate our earlier finding that structural conditions weaken corruption control, while stabilization conditions have no effect.

Second, in line with theoretical expectations, we consider the effect of structural conditions on corruption control varying the strength of interest groups such as the military, public employees and urban workers ([Nelson, 1984](#); [Waterbury, 1992](#)). We split the sample at the median of our proxy measures for interest group influence, namely military expenditure (as a percentage of output), the urbanization rate and nontax revenue (as a percentage of output). We confirm that the negative effect of structural conditions on corruption control is particularly pronounced when powerful interest groups exist and when government accountability is limited ([Supplementary Appendix Table B2](#)). For example, if military expenditure is above the sample mean, the differential effect on corruption is 1.14 points higher relative to countries below the mean.

Third, we probe robustness to different specifications of the IMF program equation. Initially, we replace past programs by the logged cumulative amount of IMF credit that a country had used in its programs over the past 5 years ([Copelovitch, 2010](#)). Then, we examine the stability of our variables of interest across 12 615 different first-stage regression models. Our results remain consistent throughout.

Fourth, to ensure results are not driven by the corruption variable source, we replicate our findings using the VDem Corruption Index ([Coppedge *et al.*, 2016](#), p. 66). We find significant corruption-inducing effects of structural conditions up to 4 years after countries are exposed to structural conditions ($P < 0.05$), while stabilization conditions are not significantly related to corruption ([Supplementary Appendix Table B5](#)). The estimated corruption effect is similar to the ICRG-based coefficient: four additional structural conditions increase the VDem corruption index by up to 5.05 points in the 5 year—equivalent to one-quarter of

9 The other datasets lacked the observations to allow for equivalent robustness checks.

its standard deviation. Further analysis reveals that conditionality-induced corruption is driven mainly by bribe-taking in the executive ([Supplementary Appendix Table B6](#)).¹⁰

Finally, we test whether our results hold under alternative model choices. We conducted panel analysis using Error Correction Models, which allow us to untangle short-term effects and long-term effects of IMF conditionality on corruption outcomes. In these models, the dependent variable is the difference in corruption outcomes, while the right-hand side includes lags and differences of predictors and the lagged corruption level. In doing so, we account for IMF program selection and endogeneity of structural conditionality. We find that structural conditions exert a long-term adverse effect on corruption outcomes—whether using the ICRG index or the VDem corruption index ([Supplementary Appendix Table B7](#)). Our core results also hold in simpler models that ignore potential endogeneity of conditionality, but which yield more efficient estimates ([Supplementary Appendix Tables B8 and B9](#)).

5. Discussion and conclusion

This article explored the relationship between neoliberal globalization and political capitalism by examining the potential impact of IMF programs on the control of corruption in developing countries. We show that IMF-mandated structural reforms increase corruption—a result that remains robust to different specifications as well as to three different measures of corruption and associated samples. In contrast, stabilization conditions—quantitative targets for monetary and fiscal indicators—do not have a consistent effect on corruption control.

These results support a theoretical argument that focuses on the capacity of structural conditions to induce concentrated losses on well-defined social groups in borrowing countries, such as protected industries, public sector employees (including military elites) and urban labor. When IMF conditions target institutional arrangements, interest groups can mobilize against threats to their privileges. Bribing public officials can be a strategy to secure continued protection through alternative means, and these officials are susceptible to this pressure because they wish to compensate for their own reduction of privileges. In turn, governments tolerate such corruption in order to continue rent distribution to powerful groups. An observable implication of this argument is that the corruption-inducing effect of structural conditions should be more pronounced where interest groups are more powerful, as proxied by their claims on public resources. Additional analyses corroborate these hypotheses.

10 We also tested other widely used corruption indicators, such as the Transparency International Corruption Perception Index (TI-CPI) and the World Bank Corruption Control Index (WBCCI). These are less appropriate for our analysis because of concerns about their usability for panel analysis: TI note that ‘CPI scores before 2012 are not comparable over time’ (TI, 2018); and the creators of the WBCCI state that users should ‘not focus on short-run year-to-year changes but rather in trends over longer periods’ (WGI, 2018). In addition, compared to our preferred ICRG measure, the WBCCI has 620 fewer observations and the TI-CPI 920 fewer observations, raising concerns about the representativeness of the sample and the power of our tests. Nonetheless, we found that structural conditions weaken corruption control, specifically in the endogeneity-corrected regressions that use the World Bank indicator ([Supplementary material Table B15](#)) and in all models except the endogeneity-corrected ones for the Transparency International index ([Supplementary material Table B16](#)).

Before discussing the broader implications of our analysis, we acknowledge two limitations of our study that future research may wish to address. First, our inferences are primarily based on econometric analysis, which cannot fully resolve ambiguities on potential mechanisms. Future studies of country cases can enhance our understanding of how neoliberal policies promote political capitalism. These studies may also take into account the changing meanings of corruption and identify potential structural breaks in the relationship of interest; for example, whether the impact of IMF conditions changed when fighting corruption gained prominence among IMF policy economists in the mid- and late-1990s (see [IMF, 1999](#)).

Second, the nature of corruption evolves as states undergo development. Historians point to how ‘systematic’ corruption (large-scale capture of economic activity by politicians) is—over the course of development—eventually replaced by ‘venal’ corruption (pettier attempts of private actors to use the political system to extract material benefits) ([Wallis, 2006](#)). Similarly, development economists explain that as countries undergo periods of economic change, the mix of ‘explicit’ corruption (like bribery) and ‘implicit’ corruption (like patronage appointments) may change to reflect the adaptation of social actors to the new institutional environment ([Yao, 2002](#)). In the context of our research, policy reforms supported by international financial institutions—like privatization, austerity and other ‘governance’ reforms—attempt to target venal or explicit corruption, which is also what typical indicators of corruption measure (including those used in this study). However, systemic or implicit corruption is not accurately captured in such indicators, and may well undermine any efforts to control pettier forms of corruption. Future studies can explore whether and how international organizations—ranging from the IMF and the World Bank to aid donors—can shift institutional environments away from development-harming systemic forms of corruption.

The introduction of neoliberal policies in developing countries did not unleash market capitalism but fueled political capitalism by creating or strengthening patron–client networks between crony capitalists and corrupt bureaucrats. The IMF was a leading agent catalyzing neoliberal policy change, and our findings document that its broad policy prescriptions are unlikely to be uniformly beneficial and can exert contradictory effects, with follow-on implications for policy environments over the long term ([Reinsberg *et al.*, 2018](#)).

Supplementary material

[Supplementary material](#) is available at *Socio-Economic Review Journal* online.

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