Who Receives IMF Anti-Corruption Measures?

A Text Analysis of IMF Loan Programs

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Abstract

What determines the IMF's emphasis on anti-corruption in a loan program? Corruption has been shown to significantly hamper economic development, but the Fund's approach to this particular type of conditionality remains under-analyzed, even though the institution is in a unique position to demand anti-corruption measures as a lender of last resort. We argue that the IMF will have an interest in imposing anti-corruption measures in its programs both to protect its resources and to spread a good norm. But, it will do so only when political costs are low enough, given corruption measures are politically contentious. We suggest that the political costs will be relatively low when the recipient country is a repeat borrower from the institution and when the country itself seeks these reforms to tie its hands. In these cases, we expect to see a greater emphasis on anti-corruption. Additionally, we suggest that the institution can only reap the benefits of anti-corruption measures when such measures have a chance of succeeding. We argue these benefits will be higher when the country has centralized corruption, which gives the IMF an identifiable target for its preferred reform measures. In these instance, we again expect more corruption-related conditionality. Testing these arguments on an original dataset of corruption-related guidelines in IMF loan programs between 1997-2019, we find significant support for them.

Keywords: IMF, conditionality, corruption, text analysis.

I. Introduction

Public corruption, widely defined as using public office for private again, has long been considered a critical impediment to economic development (Gould and Amaro-Reyes 1983; Klitgaard 1991; IMF 1997). In recent years, its detrimental effects on economic growth have once again come to the forefront of the agenda of key international organizations (IOs).[1]

In particular, the International Monetary Fund (IMF) has revamped its 1997 policy on corruption in 2018[2], as part of a self-review on the role of the institution in governance issues.[3] In revisiting its approach to corruption, the IMF has engaged in a *mea culpa*, noting that "[t]he coverage of corruption by the Fund has not been entirely even and, even in those cases where corruption was assessed to be systemic, the analysis of the macroeconomic impact of the corruption was not detailed" (IMF 2017: 36-37)[4]. Crucially, the IMF's own stocktaking on the institution's approach to anti-corruption has admitted the "significant variation in engagement with countries", noting that while sometimes program conditions may justify this selective emphasis, it does not explain the "limited or episodic Fund engagement" in some cases (IMF 2017: 36-37). Most importantly, this uneven engagement, by the Fund's own admission, does not have to do with the borrowing country's level of corruption since it varies "among countries facing similar corruption challenges" (IMF 2018b: 6).

[1] For instance, the United Nations (UN) has declared December 9th as the International Anti-Corruption Day, with the Secretary General of the UN, Antonio Guterres noting that "[e]very year $1 trillion is paid in bribes while an estimated $2.6 trillion are stolen annually through corruption - a sum equivalent to more than 5 per cent of the global GDP." For details see https://www.uclg.org/en/media/events/international-anti-corruption-day-0.

[2] A new "guidance note" on corruption was adopted by the Executive Board in 2018. For details see https://www.imf.org/en/News/Articles/2018/04/21/prl8142-imf-board-approves-new-framework-for-enhanced-engagement-on-governance. This policy shift followed two recent communiques, one in 2016 and another in 2017 by the IMF's International Monetary and Financial Committee (IMFC).

[3] We focus on the IMF given it is the foremost multilateral institution lending with the (putative) goal to fix key macroeconomic indicators. This of course does not diminish the importance of analyzing the Bank's approach to corruption in future studies.

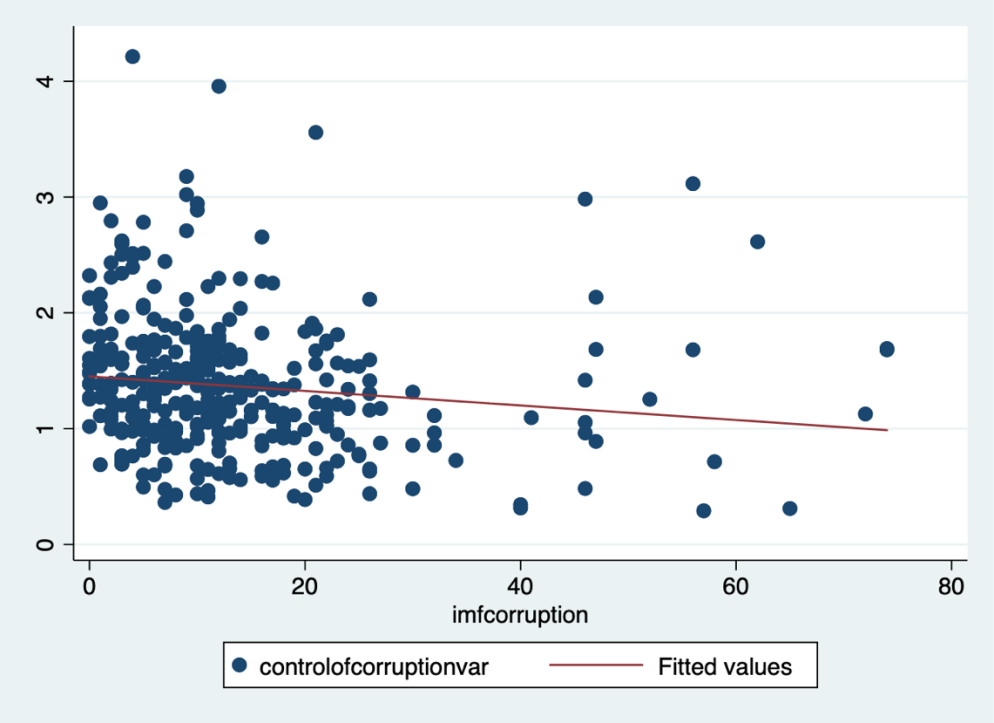
[4] See https://www.imf.org/en/Publications/Policy-Papers/Issues/2017/08/01/pp080217-background-notes-the-role-of-the-fund-in-governance-issues-review-of-the-guidance-note page

How can we explain this variation in the IMF's insertion of measures related to corruption? IMF conditionality in loan programs is a potent tool with which the IO can attempt to reform domestic economies (Stone 2008). Hence, why the IMF uses this tool on the critical issue of corruption in some cases and not in others, is important in its own right. It also illuminates how one of the most central IOs in multilateral economic governance has done on an important issue integral to economic development (Vreeland 2003). Yet, extant scholarship – which has made great strides in analyzing IMF conditionality – lacks a precise analysis of the IMF's insertion of anti-corruption measures in its loan programs.[5]

In remedying this gap, we use the IMF's own loan documents to measure corruption-related measures. This analysis, previewed in Figure 1 below, indeed shows that the country's level of corruption cannot explain away the institution's approach to corruption. Figure 1 shows, on the y axis, the country's "control of corruption", where higher values indicate lower corruption. On the x axis, it shows our own measure of the IMF's corruption-related measures in its loan programs. While the figure suggests a weak negative relationship – as corruption becomes less of a problem, countries generally receive lower corruption-related measures – there are also many data points that do not fit this pattern.

[5] Based on using structural conditions, Reinsberg et al. (2019) argue that IMF has increased corruption in borrowing countries. However, our goal is to get a more precise handle on the IMF's corruption-related conditionality. Also, we unpack the IMF's approach to anti-corruption measures rather than what in programs might contribute to corrupt practices.

Figure 1: IMF's Emphasis on Corruption in its Loan Programs



Notes: n=395, based on the authors' original dataset (see Section III). Control of corruption estimate is from the World Governance Indicators (WGI); higher numbers indicate better control of corruption.

What are some plausible explanations for this variation? Although the impact of anti-corruption conditionality on the borrowing country's economy may indeed take time to be visible, it is unlikely that the IMF's emphasis on short-term lending discourages it from imposing these conditions. If the short-term focus of the Fund indeed deterred it from considering anti-corruption measures at all, then the question of why the IMF bothers with it in some countries, but not in others, arises. The borrowing country officials may shy away from including anti-corruption conditionality in the programs as these are politically sensitive issues, but this is unlikely to account for all cases. Alternatively, some country officials may strategically seek to tie their hands, i.e., reduce their own autonomy and demand conditionality as a way to press domestic reforms (Vreeland 2003). This is plausible, but the IMF may also choose to demand anti-corruption

conditions against the wishes of domestic officials. Another plausible explanation is that countries which are close to the major shareholders of the IMF are shielded from politically sensitive measures in IMF programs, receiving fewer demands on anti-corruption regardless of their high corruption levels. However, this raises the question of whether great powers would specifically pick and choose this issue as opposed to using their influence to elicit other benefits for their allies, such as a larger loan size or fewer conditionality.

In this article, we present a theoretical framework that explains the IMF's selective emphasis on corruption measures in its programs, and we test it on our novel dataset. We start with the (reasonable) assumption that corruption-related conditionality will be politically contentious for the borrowing country, making it costly for the IMF to impose. We also suggest that the Fund will benefit from these measures both in terms of seeking improved economic outcomes in the country as well as protecting its resources and reputation. It also can spread a good governance norm by compelling anti-corruption measures.

Given these costs and returns to anti-corruption measures, we assert that the IMF will impose more corruption-related conditionality, when the political costs of doing so are relatively low for the institution. We posit that when the recipient country is a repeat borrower of the institution, the IMF's political costs of demanding corruption-improving measures will be relatively low since the "sovereignty costs"[6] of IMF programs would be lowered after the first program (Vreeland 2007). For these "recidivists", then, we expect to see higher levels of IMF measures on corruption (H1). We also argue that political costs are lowered when a democratic country wants to utilize the IMF program to tie its own hands for a reform program that also lowers corruption. Hence these also provide instances, where we should see a greater IMF emphasis on

[6] We borrow the term from Abbott & Snidal (2002).

anti-corruption conditionality (H2). Finally, we argue that the IMF will be more inclined to insert conditionality in cases where corruption is centralized because the benefits from corruption will be higher in these cases. Here, we expect to observe a greater emphasis on corruption because the IMF will have an identifiable set of governors to target (H3).

Our empirical analysis is based on a sample of the dataset we compiled, which counts all the mentions of corruption-related issues in the Memorandum of Understanding (MoU) of nearly all IMF loan programs between 1997 and 2019 (previewed in Figure 1). Measurements of countries' level of corruption based on World Governance Indicators (WGI) are not available for the earlier time period, and more importantly, 1997 marks the year that the institution truly began to address governance issues. Further, the data from the IMF's side is problematic prior to 1997 (see next section). This said, we also provide insights into the pre-1997 period.

In order to measure the IMF's emphasis on anti-corruption in its MoUs, we rely on a semi-automated text analysis using Python. We also compare our dataset to our compilation of anti-corruption measures from the IMF's Monitoring of Fund Arrangements (MONA) and test all our hypothesis on MONA as well, but the nature of corruption lends itself better to analyzing the detailed content of programs. There might be cases, for example, the Fund might invite the borrowing country to implement anti-corruption measures, but not tie the disbursement of loans to implementation of those policies. Indeed, we aim to capture this aspect of the Fund programs that are often disregarded in the hard counts of conditions in the literature that focuses on quantitative and structural performance criteria, prior actions, and indicative and structural benchmarks. Especially while spreading a good governance norm such as anti-corruption, we expect that not all anti-corruption conditions fall into those five categories of conditionality but

nonetheless be a part of the program. The Fund may reinforce the norm through the program without necessarily placing it as a condition.

We find robust support for our hypothesis, and the political cost mechanism, using different estimation methods. This research provides, to our knowledge, the first systematic analysis of corruption-related measures in IMF programs. Given the centrality of corruption to economic development outcomes, we hope it constitutes the beginning of the debate on this matter. In doing so, this article contributes to a rich body of literature that dissects IMF conditionality, more generally demands on countries, into its components.[7] At the same time, it advances analysis on how exactly the institution spreads a norm, in this case the norm of good governance as anti-corruption, which constructivist approaches in this literature have spearheaded.[8] It simultaneously contributes to the understanding of how the institution's staff saddle the varied opportunities and costs imposed by its relationship with its borrowers all the while pursuing autonomy.[9]

The rest of the article is organized as follows: the next section (II) discusses the IMF's evolving approach to corruption issues. The third section introduces our novel dataset based on text-analysis. Section IV introduces a theoretical framework for analyzing the data. The ensuing section constitutes the data analysis. The final section draws the main implications of our analysis.

[7] See for instance Caraway et al. (2012); Rickard and Caraway (2019); Nooruddin and Simmons (2006); Stone (2008).

[8] Scholars have previously discussed the role of the IMF in spreading norms such as current account convertibility (Broome 2010) and capital account liberalization (Chwieroth 2007) and more generally the IMF as the setter of the norm for 'sound' macroeconomic policy (Clift 2018).

[9] Surely, the institution's agenda in the first place may be shaped by these different actors, at least to some degree. Time inconsistency, however, also means that the institution may be pursuing policies at time t, which its shareholders had at time t-1.

II. IMF and Anti-Corruption Measures

Both the 2018 IMF guidance note and its predecessor, the 1997 guidance note on governance, define corruption as: "[the] abuse of public office for private gain" (IMF 2018b). A comparison of the 1997 and 2018 articulations of the IMF's policy on handling corruption suggests some continuities, such as the emphasis on politically-sensitive nature of corruption, as well as some change over time, such as a heightened emphasis on corruption relative to other governance issues in the 2018 document. This growing emphasis on corruption can be explained by advances in the academic understanding of the linkage between corruption and growth and by the institution's self-professed uneven treatment of these issues in its relations with its member countries (IMF 2017; 2018b).

The 1997 and 2018 guidance policy documents converge on the politically-sensitive nature of policy interventions related to corruption. For example, the 1997 guidance note mentions that the IMF should raise corruption issues with members "where there is a reason to believe they could have significant macroeconomic implications, even if these effects are not precisely measurable" (IMF 1997). It effectively cautions the institution in being too generous with this type of conditionality and also emphasizes the institution should not take political regime type into consideration. The 2018 guidance note reinforces the notion that the IMF cannot take the political regime into consideration when deciding to include conditionality related to governance and should not be interfering with domestic politics (IMF 2018b: 11). These claims to political non-interference of course resonate with the institution's mandated, but oft-violated non-political, technocratic nature.

The IMF staff are also discouraged from making their own determinations of the country's level of corruption and exercising caution in relying on third party indicators, even though the

latter is of course made inevitable by the former (IMF 2018b: 11). In this context, the 2018 staff report refers to the institution's reliance on more than one source in measuring corruption in a country, ranging from public perceptions of corruption to direct experience with corruption, to the strength of anti-corruption institutions.

Despite some overlap between the 1997 and 2018 policy documents, the latter guidance note provides a much thorough discussion of the impact of corruption on economic growth, drawing on both the IMF staff's own analysis and other scholarship. Hence, the 2018 guidance note foresees the IMF having an "enhanced role" in governance issues. This document clearly establishes corruption as well as "governance vulnerabilities" as "macroeconomically critical" issues with "a pernicious effect on a country's ability to achieve sustainable, inclusive economic growth" (IMF 2018b: 1). Using their own estimations, for instance, the IMF staff explain that worsening corruption can be associated with a decline in GDP per capita growth as high as 1.4 percentage points (IMF 2018b: 20) and that corruption has similar depressing effects on investment and revenue. The 2018 guidance note also references inequality being positively correlated with corruption, underscoring widening inequality as a major development in the global economy in the last couple of decades.

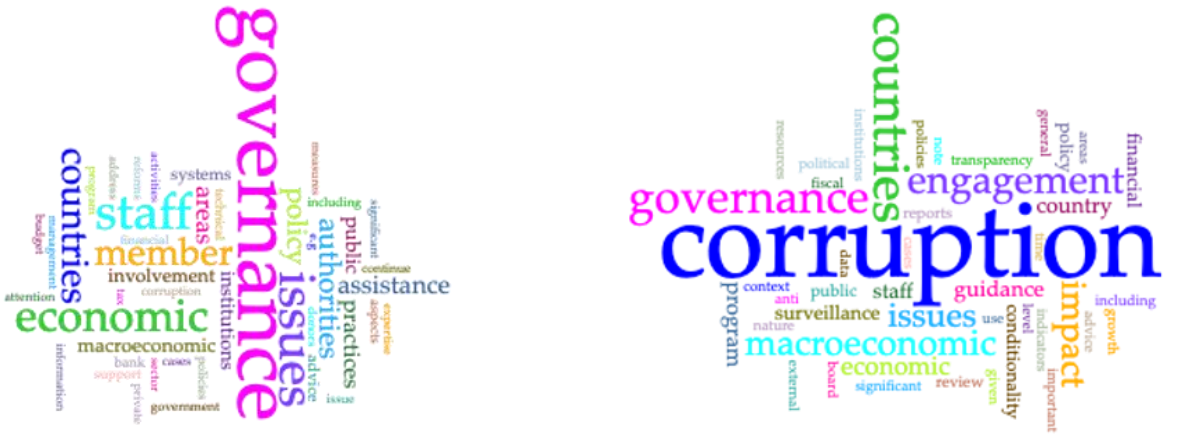
Finally, given "many" Executive Directors'[10] attention to the "supply side" of corruption, whereby private actors bribing public officials as in the case of multinational corporations' access to country resources, the new 2018 guidance note acknowledges the importance of foreigners not bribing within a country. Yet, it nonetheless defers this matter to the OECD Anti-Bribery Convention. In other words, the 2018 guidance note remains centered on the use of public office

[10] In IMF parlance, "many" refers to 10-15 out of 24 Executive Directors (Breen et al. 2019)

for private gain (IMF 2017). Although private corruption in developing countries is a pertinent issue, it remains outside the scope of this paper. Here, we merely draw the reader's attention to the IMF's noting of this matter in its shift of policy in 2018 without taking concrete measures to address it.

Figures 2a and 2b below support this section's general assessment by comparing the vocabulary densities in the 1997 and 2018 documents. These word clouds clearly demonstrate the enhanced emphasis on corruption in the 2018 document; whereas, in the 1997 document corruption is secondary to the broad emphasis on governance. Similarly, the 2018 document's clear linkage between corruption and macroeconomic issues stands out. The 2018 document also discusses the role of IMF engagement and conditionality on handling corruption more rigorously, again as part of the institution's enhanced emphasis on corruption.

Figure 2: Word frequencies in the 1997 & 2018 guidance notes of the IMF



(a) Figure 2a: the word frequency in the 1997 guidance note (b) Figure 2b: the word frequency in the 2018 guidance

Notes: Figure 2a, on the left, shows the word frequency-based word cloud in the 1997 guidance note. Figure 2b, on the right, does the same for the 2018 guidance note. Word counts were produced usingvoyant-tools.org

What explains the differences in the 2018 document and why were the two guidance notes released when they were? In the first guidance note in 1997, we believe the extant literature

provides an answer. As the institution began to address the backlash to the Washington Consensus, it "augmented" the Consensus with a view to integrating institutions and governance (Rodrik 2006). Existing work on the IMF empirically demonstrates that over time the institution "layered" a focus on governance and institutions on top of a core market-oriented approach (Kaya and Reay 2019). The 2018 document, *at first look*, represents another articulation of ideational shifts happening within the IMF in recent years. For instance, a burgeoning literature shows that the institution moderated its market-oriented policy approach on a number of key issues over time, such as on capital account controls, fiscal policy, and inequality (Chwieroth 2014; Clift 2018; IMF 2018a: 3). Seen in this context, the 2018 guidance note belongs to a larger transformation of the IMF, aided both internal shifts and increasing global attention to corruption. Put differently, the 2018 can be interpreted as presenting the IMF as having emerged as a more assertive actor in governance.

In the absence of a systematic data analysis of the IMF's approach to corruption, however, it is difficult to know whether the 2018 document represents changes that have already happened or forebodes transformations to come. Understanding this issue requires a systematic analysis of how the institution has actually approached corruption prior to 2018, especially between 1997 and 2018. In other words, before we can begin to discuss whether the IMF policy documents represent shifts or whether they are aspirational documents calling for change, therefore signaling new policy for the future, we need a better understanding of how the institution has approached the issue of corruption in its loan programs. We believe the analysis provided in this paper is necessary to future research in providing a more extensive analysis of why the IMF shifted focus.

III. The Dataset: IMF Emphasis on Corruption in its Loan Programs

In order to examine anti-corruption measures in IMF programs, we created a novel dataset using IMF documents, given that the data were not readily available in the existing ones. Particularly, we were interested in a dedicated focus on anti-corruption measures (as opposed to a proxy), which we could not find in existing analysis on conditionality.

We found that the IMF's own categorization of conditionality from MONA, its database on the Monitoring of Fund Arrangements, was also lacking. The economic descriptor related to anti-corruption in the MONA database is 11.4, coding "anti-corruption legislation/policy" which is quite limited in its measurement. For instance, according to the MONA's count Ukraine only had 3 anti-corruption conditions attached to its 2014 program, while our text analysis counts 35 mentions of corruption-related measures. And, while Ukraine's 2015 program had 11 conditions in the MONA database, we spotted 55 mentions for the same program. Similarly, although Romania only has 1 anti-corruption counted in the MONA database, our text analysis finds 14 corruption-related measures for its 2004 program. Therefore, MONA data not only suffer from many inconsistencies and missing data in its documentation, but also substantially undercount the number of anti-corruption measures in IMF loan programs. This said, we integrate MONA into our robustness analysis.

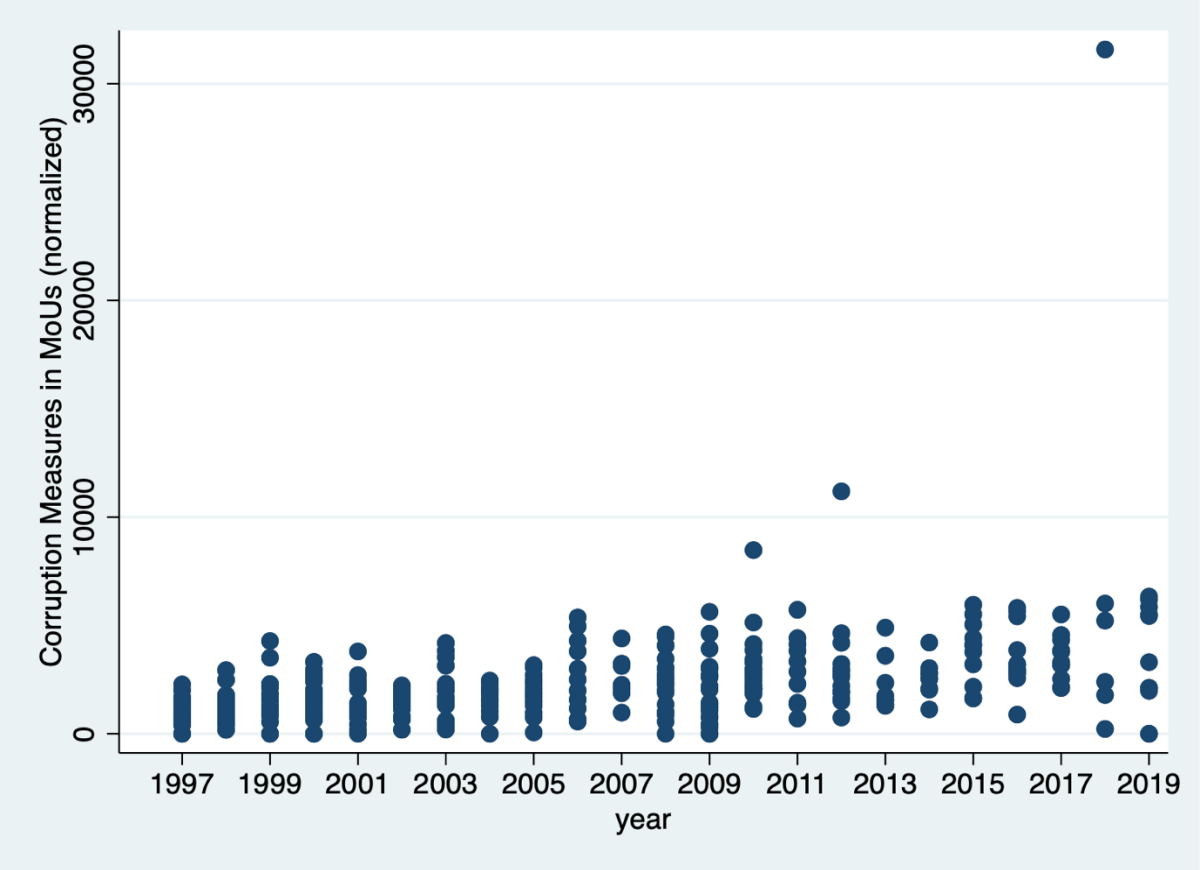
Since the IMF's anti-corruption conditionality is not yet comprehensively documented in the literature, we conduct a comprehensive text analysis based on the memoranda of understanding (MoUs) published on the IMF's website and in its archives. Given the political sensitivity of the issue, the IMF will not often directly refer to corruption or anti-corruption measures in the MoUs. Instead, it may indirectly discuss corruption by referring to accountability and transparency issues

in the country. Hence, analyzing IMF conditionality does not necessarily give us the best measure of the IMF's approach on this issue. In this regard, we have analyzed the MoUs based on a list of keywords that are related to corruption, which are listed in Appendix A, in forming our database.

Our dataset covers 345 number of MoUs from 1997-2009.[11] Figure 3 below shows the progression of the IMF's anti-corruption emphasis captured in the MoUs. As the figure shows, we observe a substantially larger volume of anti-corruption related measures since 1997, which is the year the IMF identified a comprehensive strategy for its approach to governance, including corruption. The maximum number of corruption-related mentions in any year is 74 (non-normalized), with Greece and Sao Tome & Principe each receiving this much in 2012. As Figure 3 shows, while we see some individual cases receiving a greater level of corruption-related measures, we do not see much year-to-year volatility in the institution's emphasis on corruption in its loan programs.

[11] Precisely, we found 398 loan programs between 1997 and 2019, but six of these did not have MoUs accessible neither online nor through direct contact with the IMF. We excluded another 15 MoUs given they were flexible loans, providing credit lines to countries with already good macroeconomic conditions, thereby not belonging in the same category of ex post (i.e., coming with the loan) conditionality. For countries that received more than one loan in a single year, we included the first MoU, which reduced our total count of MoUs from 377 to 345. The quality of the digitized files from earlier periods, especially 1980-1996, tend to be poorer; in some cases, parts of the documents were simply missing, either not scanned or removed by mistake. Given this period covers barely any corruption-related measures, we exclude it from the analysis.

Figure 3: IMF Corruption Emphasis in MoUs (1997-2019)



Notes: n=395, based on the authors' original dataset. Y-axis shows normalized count of corruption measures, i.e., mention of corruption in each MOU/total word count MoU, summarized over the year.

In order to identify the keywords underlying this analysis, we have first qualitatively analyzed the IMF's documents on corruption with the goal to ascertain some of the common phrases it uses. This helped us identify the institution's discourse on corruption, i.e., the manner in which it discusses corruption. These documents primarily include the 1997 framework on addressing corruption, its updated version in 2018, and the extensive chapter on corruption in the IMF's fiscal monitor (IMF 2014; 2017; 2018b; 2019). Additionally, we analyzed select country

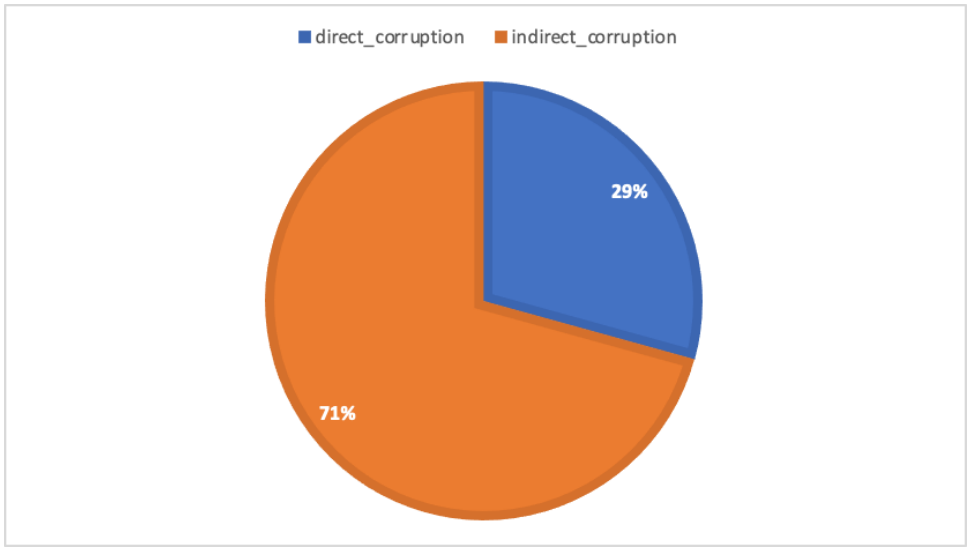
loan programs to ensure that the language we found in IMF documentation was mirrored in the programs and, subsequently, appropriately modified our language.

The IMF, expectedly, uses both direct and indirect anti-corruption related words in the given period. In the case of Ukraine's 2016 program, for instance, the IMF asked the Ukrainian government to "broaden the tax base and reduce opportunities for tax evasion and corruption."[12] However, such direct mentions of anti-corruption reforms are less frequent than the indirect mentions in the MoUs. For instance, the IMF links regulatory and data transparency to combat against corruption. It underlines 'e-government' and 'digitalization' as a way of keeping the government accounts transparent and accountable (IMF 2019). In the Greek program in 2010, as one example, "tax compliance" and "tax evasion" were program priorities in order to address notoriously non-transparent Greek public administration system and to prevent corruption, although the word "corruption" was rarely mentioned in the memoranda itself (IMF 2010).

Hence, as Appendix A shows, we differentiate between keywords that capture direct mentions of corruption or anti-corruption versus indirect mentions of it. Although we distinguish between those two measures, they are indeed correlated (r=0.54). To give the reader a flavor, Figure 4 differentiates between these direct and indirect measures and shows the preponderance of indirect measures, which is heavily tilted toward accountability and transparency because these are precisely the ways in which the IMF tries to reduce corruption (IMF 2018b, 2019). These discussions also suggest that text analysis offers a unique advantage in measuring corruption, which is difficult to pin down in the explicitly delineated conditionality.

[12] See the MoU of Ukraine's 2016 program (see: https://www.imf.org/external/np/loi/2016/ukr/090116.pdf).

Figure 4: Direct and Indirect Corruption-Related Measures in IMF Loan Programs



Notes: n=345; based on authors' dataset. Direct corruption measures direct mentions of corruption and anti-corruption measures, and the bulk of indirect corruption captures the institution's emphasis on accountability and transparency measures (see keywords in Appendix A).

After creating our keywords summarized in Appendix A, we used Python to pursue an automated approach to measure the mentions related to corruption in all aforementioned MoUs. We prefer the automated approach as it is fast, objective, and easy to replicate. We implemented a script in Python language using a widely used package called Natural Language Toolkit (NLTK) and performed the following common tasks in the text mining literature. Initially, we converted the texts in the MoUs to lowercase and removed punctuations, dates, and numbers. Then, we removed the stop words (e.g. a/an, the), which do not have special meanings. Next, we split each words in the documents to their roots (lemmatization) by removing the suffixes to identify the words that have the same root. For example, the words "increase", "increases", and "increasing" have the same root "increas". After these steps, the script searches for the occurrences of each of our keywords within MoUs. For each document, it measures the corruption by summing the frequencies of each keyword, as we further detail below.

We run our text analysis on the MoUs because these memoranda specify the final version of the agreement between the borrowing government and the Fund. Letters of Intent, in contrast, can include the government's own policy and approach to anti-corruption policies and institutional reform as well as other international organizations', such as World Bank's, policy recommendations and conditionality (Caraway et al. 2012). We can, thus, more reliably gauge the IMF's approach to corruption based on the Memoranda. We picked the first memorandum for each country in each year following the earlier practice in the literature (Caraway et al. 2012). Including all memoranda for each year would artificially inflate our results, and some countries would get a disproportionate representation in the sample. If more than one arrangement, such as an Extended Fund Facility and an Extended Credit Facility, were signed in the same year, we included the bigger loan package in the analysis.

Overall, our dataset intends to provide a source for scholars of this field in need of a more nuanced approach to conditionality. To our knowledge, apart from a few earlier studies on the IMF (Kaya and Reay 2019, Gehring and Lang 2020; Mihalyi and Mate 2019) scholars have not utilized text analysis to explain IMF behavior. Before we move on to the core question—what explains the IMF's approach to anti-corruption measures in its loan programs?—we address two potential issues.

First, the reader might be concerned that our textual analysis picking up positive mentions of corruption. The Fund might, for example, acknowledge the progress a country has made with regards to combating corruption. To be sure, our close reading of the MoUs suggests that this is unlikely to be the case – the IMF rarely utilizes the MoUs in this manner to celebrate achievements, since these documents are a critical part of the program contract and not broad assessments of country economies, such as Article IV reports. Nonetheless, in order to address the issue that our

text analysis might be picking up positive, congratulatory measures of corruption-related measures as well (such as a country reducing corruption), we conduct a sentiment analysis looking at positive and negative, as well as neutral, sentiments expressed when corruption is mentioned in IMF documents.[13] This analysis shows that what the automated sentiment analysis picks up as positive and neutral mentions are in fact expression of the IMF's concern with corruption. This gives us further confidence that our measurements of IMF's corruption measures are indeed discussions of concerns (results available upon request).

Finally, a question may arise as to how our measurement may compare to the IMF's MONA counts. We provide a comparison of our text-based analysis (Figure 3) to MONA measures in Figure 5.1 and 5.2 in two ways: one, we rely on the IMF's own reporting of corruption-related conditionality in MONA; two, we examine an augmented version of this conditionality based on the addition of 4 MONA categories (revenue administration including customs (1.2), Expenditure auditing, accounting, and financial controls (1.6), Fiscal transparency (publication, parliamentary oversight) (1.7), central bank auditing, transparency, and financial controls (2.2)), which are most likely to contain anti-corruption related measures. This said, it is not clear what IMF counts under the anti-corruption category. More generally, the deficiencies of the MONA dataset are well-known (e.g., Kentikelenis et al. 2016). Further, as the aforementioned analysis emphasized, the IMF finds its own approach lacking and inconsistent especially on corruption. The upshot, therefore, is that while we can rely on MONA for robustness checks, we need a separate dataset, i.e. the one we compiled, both for consistency across IMF programs and to be able to assess more comprehensively (i.e. in a way that is not captured in strict sense of the IMF conditionality).

[13] Details of the analysis are not shared here because of space concerns; they are available from the authors upon request.

Figures 5.1 and 5.2: Comparison of the Dataset to MONA

Figure 5.1

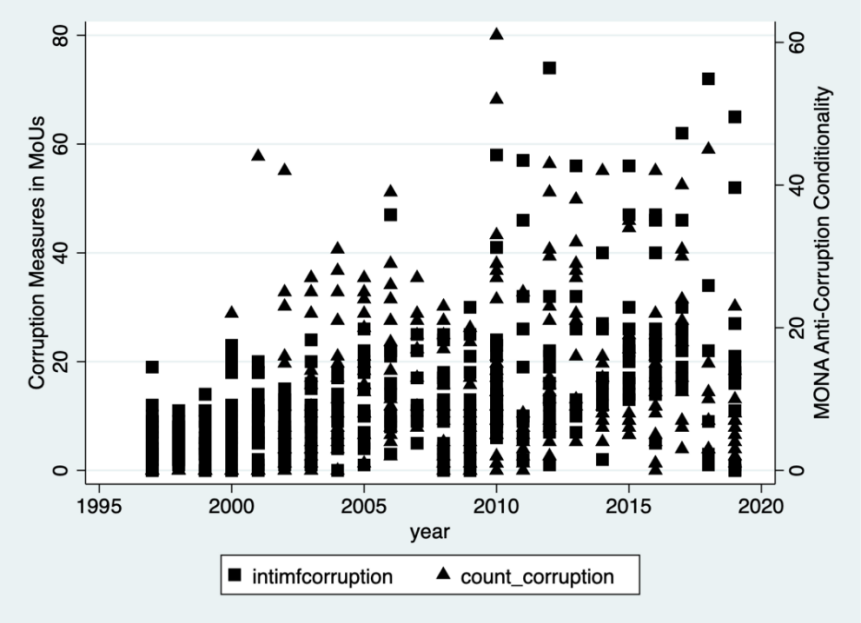
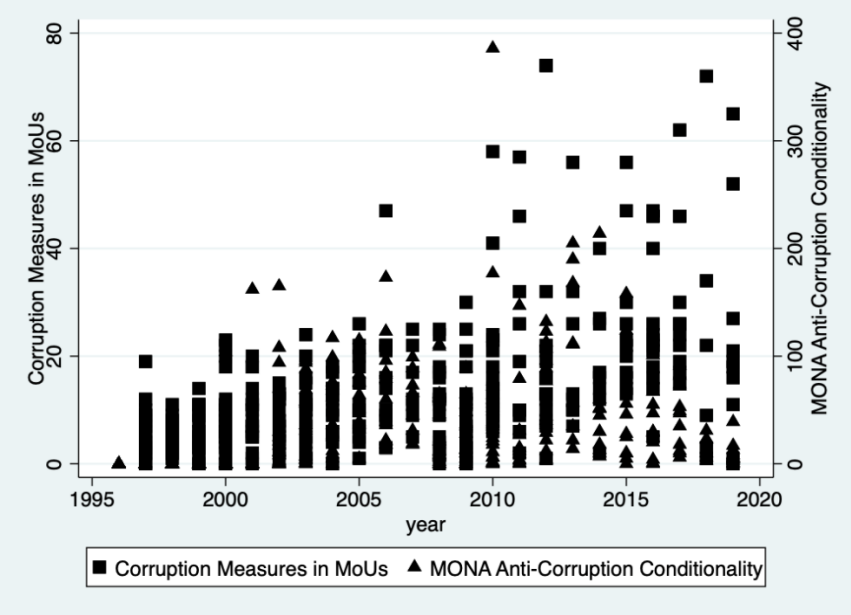


Figure 5.2



Notes: Figure 5.1 shows the IMF's own accounting of conditionality on corruption through MONA; Figure 5.2 augments this conditionality count through four additional categories in the MONA dataset for more expansive analysis (see text). The main y-axis shows the IMF corruption measures based on our dataset. The secondary y-axes (right) shows the MONA-related corruption conditionality based on the categories mentioned in-text.

IV. Corruption and Political Costs

Based on the literature on the IMF, our conceptualization of the IMF is one where the institution has autonomy from its "principals" (in a principal-agent framework),[14] as long as the issues are not of critical importance to its largest shareholders (Stone 2011).

A number of different theoretical approaches in International Relations support the notion of IOs as, at least partially, autonomous institutions. According to Barnett and Finnemore (1999), IOs are "Weberian bureaucracies," which make them behave in ways not sanctioned by their members and unanticipated by their founders. Similarly, in constructivist accounts, the IMF staff have non-negligible independence from the main shareholders in the organization's day-to-day tasks, such as their significant and observable influence over conditionality (Chwieroth 2012).

By the same token, some public choice approaches also view the IMF staff as a partially independent actor. For instance, IMF conditionality exists, to some extent, to protect the institution's resources and to ensure that its borrowers are "bribed" to adopt policies in accordance with the institution's preferences and norms (Dreher 2009). These approaches, however, are also compatible with explanations that emphasize the role of major shareholder's interests in significantly influencing specific outcomes in the IMF, such as the size of loans or the level of conditionality attached to them (Stone 2008).

In sum, different perspectives in the literature recognize both the autonomy of the IMF at specific points in time, as well as the constraints on its autonomy imposed by the primary shareholder, i.e., the main principals. We take this as a departure point.

[14] For application of P-A theory to IOs, see Hawkins et al. (2006), and for a two-level principal-agent model of IMF program design, see Angin (2016).

IMF and Anti-Corruption Conditions

Advancing upon these fundamentals, our overall theoretical framework rests on the following: when the political costs of including corruption-related conditions are low, the IMF will want to attach them to its programs. Political costs, here, are understood simply as drawbacks or impediments that the institution would have to incur in pursuing its policy course due to reactions from both its major shareholders and borrowers. In some cases, these costs may be economic in the sense of a major shareholder withdrawing funding from the institution or delaying it. We call them political costs nonetheless, since they arise from the institution's management of its own (autonomous) agenda and simultaneously its principals' demands.

Assumptions

We make several assumptions in setting up our theoretical framework. We assume that the IMF staff are interested in both the success of the program, as well as maintaining a good relationship with country officials, so as not to stigmatize IMF borrowing, as in the 1997 Asian financial crisis and its aftermath (Beeson & Broome 2008). On the one hand, since the IMF is in the business of acting as a lender of last resort, the IMF staff have an incentive to not discourage (at least permanently) borrowing from the Fund and leading to a build-up of foreign reserves, which displaces multilateral insurance through the institution with self-insurance. IMF documentation explicitly refers to such costs in discussing corruption by stating that direct discussions on corruption "could have an adverse effect on Fund engagement with its members" (IMF 2017: 4).

On the other hand, the IMF staff also seek to protect the institution's use of resources and are interested in the program's success (IMF 2018a).[15] By the success of the program, we refer to restoring the country's ability to borrow from financial markets, alleviate its balance of payments problems, or survive a crisis (banking or sovereign debt), all of which might be interrelated. Therefore, conditionality intends to also ensure that the institution is repaid. If corruption, for example, diverts the Fund's resources to lining up the pockets of corrupt officials or in maintaining economic activity that is prone to corruption, such as red tape around import licenses, then the IMF resources may be at risk. IMF discussions on corruption highlight that with respect to use of Fund resources, measures to address governance and corruption weaknesses will be established as conditions under a Fund-supported program if they are "of critical importance for achieving the goals of the member's program" (IMF 2018b: 8). IMF documentation interprets this necessity to address corruption not only because of the risks corruption pose to the institution's resources, but also given its potentially damaging effect on the institution's "reputation" (IMF 2018b: 8).

Indeed, the IMF has an interest in spreading a good norm, or at least seeming to spread one (Barnett and Finnemore 1999).[16] The legitimacy of the institution may come under increasing criticism, for instance, if it does not address egregious instances of poor governance. Therefore, we can assume that the IMF staff will be interested in imposing corruption-related conditionality for the sake of the institution's reputation and spreading a desirable norm, in addition to the protection of its resources.

These discussions also imply that we do not assume the IMF will intervene simply because the country has a high level of corruption. Indeed, in updating its governance note in 2017, the

[15] "Use of Fund resources" (UFR) is frequently emphasized in relevant IMF documents.

[16] Barnett and Finnemore (1999) also suggest that once adopted as policy, positions such as the importance of good governance, get ritualistically followed.

Fund itself notes that countries such as Somalia, Equatorial Guinea, Libya, and Syria that rank high on corruption according to the WGI measure, which we used in Figure 1 above, score low in terms of frequency of Fund references to corruption, primarily due to the scarce Fund interaction/engagement with these countries (IMF 2017: 56). Conversely, in Georgia, Indonesia, Kenya, and Ukraine the references to corruption in Fund documents were more frequent than expected based on their ranking on third party indicators of corruption, which the Fund justifies as deeper engagement on governance/corruption issues with these countries (ibid).

Given there are benefits to the IMF from imposing conditionality (such as protecting Fund resources, making programs more successful, and reputational considerations), our next question becomes: holding these benefits constant, when does the IMF impose corruption-related measures in its programs?

Varying Political Costs

We assert that, even though the IMF staff will wish to impose anti-corruption conditionality, doing so will come with political costs for the institution. And, when these costs are attenuated, the IMF staff will take the opportunity to impose anti-corruption conditionality. By suggesting that despite their desire to do so, the IMF staff will withhold the imposition of conditionality due to political costs, we are suggesting that the political costs will tend to outweigh the constant political benefits (to imposing this kind of conditionality). In this light, we also consider the situation, where the benefits might be greater than expected costs. This subsection elaborates upon these varied costs and benefits with a view to formulating hypotheses.

To begin with, the IMF staff face lower political costs when the country is a returning client, namely a "recidivist" borrower (Bird et al. 2004). While a typical IMF program lasts for

three years, some recidivists sign an additional agreement even before the ongoing one expires.[17] In recidivists, the domestic political barriers to borrowing from the IMF have been overcome (Vreeland 2007). Particularly, these are countries where domestic veto players that may object to an IMF program have been placated (or successfully bypassed), and these are also contexts where the marginal sovereignty cost of borrowing from the institution are lower, given the country has already borrowed from the IMF (ibid). By the same token, as the number of years a country spends under an IMF program increases, the fear that the country not borrowing again due to stigma decreases. For these reasons, the political costs of inserting IMF conditionality are lower in these instances. As a result, in the recurrent programs, the Fund might assign more conditions to tackle corruption.[18] We therefore surmise that:

The number of anti-corruption conditions will increase as the number of years a country spends under an IMF program increases (H1).

Secondly, domestic authorities in democracies that enter an IMF program with anti-corruption conditionality may wish to push anti-corruption measures, which effectively lowers the political costs for the IMF in inserting anti-corruption conditionality. In forging anti-corruption reform, these authorities may choose to use the IMF both as a leverage over domestic opponents (of reform), or to tie their hands against backsliding (Mansfield and Pevehouse 2006; Vreeland 2007). In this case, as Vreeland elucidates, the IMF can both increase the reputational costs of backsliding - whether it is by officials charged with implementing the program or veto players

[17] Armenia, for instance, had an IMF program continuously running between the years 2001 and 2017, and it signed six different programs such as a Stand-by Arrangement, an Extended Fund Facility and an Extended Credit Facility.
[18] It is also possible that the IMF is more familiar with the domestic economy in these circumstances, but we do not think, however, this is the most plausible link. The Fund often has access to various macro-economic indicators in a country through its local offices and surveillance mechanisms. It is hence likely to be able to adequately assess economic conditions prior to a loan.

wanting to overturn it - thereby providing a commitment device. Additionally, should the reform fail, the IMF can be scapegoated, so as to shield domestic officials from all of the blame (Vreeland 2003). In sum, one scenario is that a government will want to press domestic reform, therefore welcoming IMF conditionality on corruption. In this case, the IMF staff would not face the kind of political costs that it would if it were facing an unwilling domestic authority.

We specifically differentiate between democracies and non-democracies because in non-democracies, the presence of a "selectorate" as opposed to an electorate could affect the proceeds from corruption, an important instrument for rewarding or appeasing the selectorate. In the context of the IMF, examining the issue of IMF scapegoating, Smith and Vreeland (2006) argue that when the governors face a "selectorate" as opposed to an "electorate", then inheriting a program can be detrimental to political survival, since conditionality comes with only downsides and not with any program perks that can be distributed to supporters. However, when governors face an electorate, then inheriting a program can aid survival because blame can be shifted to those that signed it.

While our context is different, their work provides an important insight to the current analysis: in the case of a selectorate, IMF programs' negative distributional repercussions can be alleviated with gains from corruption, which are distributed to the selectorate. This leads us to our second hypothesis:

In less democratic regimes, we expect to see lower IMF measures related to corruption; whereas, in newly-elected democracies we expect higher conditions related to corruption (H2).[19]

Up until now, we have held the benefits the institution drives from anti-corruption measures constant, assuming that the IMF will have an interest in protecting its resources and

[19] In democracies in election years, we do not expect to see much conditionality, as election years are sensitive times for governments (Rickard and Caraway 2014). But, we are interested in assessing when the IMF actually imposes more anti-corruption conditionality (and not when it refrains from doing so).

reputation as well as spreading a norm, but that it has political costs in imposing anti-corruption measures and that its imposition of conditionality-related measures will vary with these costs. We have also suggested that it will impose However, it is also plausible that under certain circumstances, the benefits may be worth the costs. We now turn to addressing this point.

Based on a seminal economic model on corruption by Shleifer and Vishny (1993), we suggest that:

The benefits of imposing anti-corruption conditionality will be relatively higher, when corruption is centralized, i.e. when there is one, identifiable group of governors that the IMF can target and persuade (*H3*).

In the case of centralized corruption, there is a clear target for IMF conditionality on anti-corruption; whereas, when the corruption is decentralized, there is no clear point person/group at which the conditionality could be targeted. In these latter cases, imposing anti-corruption conditionality would provide little benefit. In any case, in the case of decentralized corruption, the measures would have to be very extensive and penetrate through different levels of governance to be effective, which is highly implausible given the costs of imposing this kind of conditionality. In contrast, in the case of centralized corruption, the presence of one clear target increases the probability of these reforms succeeding.

Shleifer and Vishny (1993) differentiate between three "types" of corruption: Type I corruption denotes one of a "monopoly" under which a group of officials, a tightly-knit group such as in the case of the Philippines under Ferdinand Marcos for over two decades, control the sources of corruption. The officials, in other words, have a monopoly over corruption. Consider, for instance, import licenses under Type I corruption. Corrupt officials with monopoly over these licenses can reduce the quantity of the licenses produced and mark up the price of the license

(above the usual, "market" price).[20] The difference between the non-corrupt, market price of the license and the price under corruption, then, are the rents the officials make.[21] Crucially, in this type of corruption, economic activity is unlikely to be stifled completely, as the monopolist corrupt officials act as a centralized agency that organizes the corruption and sort out "complementary bribes", such as bribes on the construction permit, the permit to hook up electricity, and the permit for a building being constructed. In this respect, they organize the price paid for corruption (by the buyer, such as the price paid for the license), such that the price is reasonably high to line up to the pockets of corrupt officials, but not so high as to dry up the demand for the good (such as the license). These discussions suggest the presence of a single group of governors that can be targeted with a view to making the anti-corruption conditionality effective.

Type II corruption, however, does not conceptualize the corrupt officials as monopolists; rather, there are different officials acting corrupt in an uncoordinated fashion. As an example, the aforementioned complementary bribes are not sorted, but one needs to pay off different officials to obtain different permits for the same building. For example, one corrupt official wants bribes for the license for construction, another corrupt official needs to be bribed to run electricity to the building, yet another needs the bribe for a different aspect of the construction. This kind of corruption stifles economic activity, as the level of the bribe paid may be lower than in Type I, but it is repeatedly doled out. This said, it would be very difficult for the IMF to feasibly devise anti-conditionality measures in this case.

Type III corruption has fewer damaging effects on economic activity, in the sense that corrupt officials - providing one single good, such as a license— are competing with one another

[20] This is the basic monopoly model in microeconomics, where the monopolist reduces quantity thereby jacking up the price.
[21] Shleifer and Vishny differentiate two further types within the monopolist model, which is not relevant for our study.

to provide it. For instance, there are different offices from which to obtain a passport, therefore one can still obtain a passport and perhaps with a lower level of a bribe (since different agencies would be competing to provide the passport, albeit all being corrupt). The IMF is unlikely to interfere in Type III corruption, given its less obvious impact on the economy.

Type I-like corruption presents itself as the most likely case where IMF staff stand to benefit the most from pressing anti-corruption conditionality. In this case, reforms could be targeted against an identifiable, clear group of corrupt monopolists, so to speak. Thus, we expect (H3) greater conditionality on corruption in countries where centralization is higher.

Other Considerations

In addition to domestic conditions discussed above, the literature establishes that the major shareholders of the IMF wield considerable influence over some of the decisions of the institution. For instance, countries that are close to the US, in particular, receive larger loans with fewer conditions (Oatley & Yackee 2004, Barro & Lee 2005, Dreher & Jensen 2007, Stone 2008, Copelovitch 2010, Dreher et al. 2015). However, the literature also points to great power interventions into institutional functions as costly, therefore reserved for specific circumstances. For instance, Stone (2011) suggests that given the costs to the institution's legitimacy, the US will choose to intervene when delegation to the staff is higher because this will provide a greater opportunity for obfuscation.

In this context, we expect that the US officials at the IMF would be unlikely to intervene to adjust the number of corruption measures, since -- for all the reasons we discussed -- the IMF staff would already be sensitive to the issue. Put differently, it would seem unlikely for US officials to use their political capital to push on this issue, as opposed to other issues, such as

whether or not the country receives a loan or the size of the loan. Therefore, we do not expect a significant association between the country's political proximity to the US and its receipt of IMF conditionality on corruption. This said, we nonetheless test this as an alternative hypothesis.[22]

V. Data Analysis

Key Variables

In order to construct our main dependent variable (DV), we firstly summed all keywords, both direct and indirect, related to corruption in each document in each year that we obtained through our text analysis (see Section III). Next, we construct a relative frequency measure (normalize the count emerging from the text analysis by dividing the number of corruption-related keywords in a memorandum for country *i* at time *t* by the total word count of the memorandum for country *i* at time *t*).[23] Although the IMF's memoranda largely follow the same format, there are some notable exceptions in length and formatting, such as some documents being unusually short. We normalize the count in order to ensure comparability across documents.

This main dependent variable, labelled as *imfcorruption*, ranges from 0 to approximately 74, with a mean of about 13.6. Precisely, 13 countries in the sample have programs with no anti-corruption related measure. The normalized version of this DV is labelled as *imfcorruptionnorm*. Our second dependent variable, DV2, simply measures whether or not the program had any corruption measures at all in it, labelled as *dummyimfcorruption*. Additionally, we ran estimations

[22] In any case, the literature on great power influence does not suggest absolute control by any means.
[23] We multiple the resultant number by 1000 for ease of interpretation.

separately on the direct and indirect measures of corruption, as summarized in Appendix A. All variable descriptions, their sources, and summary statistics are provided in Appendix B.

Our main control variable is the *control of corruption* estimate from the WGI. Control of corruption is one of the six broad dimensions of governance as indicated by World Bank and is defined as "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests" (World Bank, n.d.). Perhaps more importantly for us, the IMF repeatedly instructs its staff members to take WGI anti-corruption indicators into account when assigning anti-corruption measures in a borrowing country (IMF 2017). This measure is also preferable because it contains both direct and indirect measures of corruption. While the former type of measure relies on experience with direct acts of corruption, such as engaging in bribery, indirect measures rely on public perceptions of corruption. Although the literature agrees that these two measures are highly correlated, it also advises the use of both types, which the WGI's control of corruption does. A final advantage of using this WGI measure is that it was consistently collected over the years of analysis in this study.

The choice of primary explanatory variables are guided by our hypotheses. In order to measure *recidivism*, we have collected our own data based on MONA, measuring the cumulative number of years a country spent under an IMF program between the years 1997 and 2019. Our measurement of democracy (*Freedom House Index*) is one of the most commonly used measures in the political economy literature due to its wide data coverage and clear cut-off points for the presence of elections. It takes three values: 3 if a country is free, 2 if partly free, and 1 if not free. Our measure of elections, *election*, is based on the Database of Political Institutions (DPI) and

captures the presence of either a legislative or executive election in the preceding year (in line with *H2*).

Finding a suitable proxy to assess whether or not corruption is centralized is not straightforward. To this end, we have examined multiple measures, eventually decided to use a well-known measure: whether or not the country's political regime is federal (based on the DPI). If a government is a federal state rather than a unitary one, similar to local autonomy, decentralized corruption is more likely. The higher the local autonomy, the greater the local spending levels and regulatory capacity, for instance. Here, '1' indicates a federal government, whereas '0' stand for a unitary regime. Obviously, being a federal government does not necessarily mean there would be pervasive corruption in that country. We interact this variable with our control of corruption variable to gain a sense of the centralized nature of corruption.[24] We additionally control for several variables that might affect both the selection into an IMF program, and once a program is concluded, receiving anti-corruption measures (Bird and Rowlands 2016). These macro-economic indicators include: GDP per capita income (logged), GDP growth, the country's level of foreign currency reserves, and its extent of external debt service. Not only are poorer countries more likely to conclude an IMF agreement compared to richer ones, but they are also more likely to suffer from high levels of corruption (Svensson 2003). Furthermore, indicators of a macro-economic crisis such as shrinking GDP growth, depleting foreign currency reserves, and increasing external debt often prompt countries to go to the IMF. Finally, we control for the loan size of the program (logged). When loan size is larger, the IMF is likely to be more eager to guard its resources in the borrowing country through anti-corruption conditionality.[25]

[24] For instance, tax and revenue decentralization measures coming from the IMF's fiscal decentralization data set had many missing variables, so it is not suited for our central analysis, but we use it for robustness checks in Appendix D and explain how it proxies centralization.
[25] As commonly done, we log some variables to handle outliers.

Empirical Analysis

Following earlier best practices in the field, we first estimate a selection equation for IMF program countries. As abundantly discussed and documented in the literature, borrowers of the IMF are systematically different from non-borrowers (Vreeland 2003). They have lower GDP per capita , and often borrow while they are undergoing a severe economic crisis, meaning that they experience slow or negative GDP growth and have lower levels of reserves and a relatively higher external debt (Abouharb and Cingranelli 2009; Stone 2008). Therefore, we model *selection* into an IMF program, before we model the *allocation* of IMF measures on corruption.

Specifically, we pursue a two-part model (Cameron and Trivedi 2005: 544-545). We first model selection, then separately examine conditional dispersion of IMF guidance on corruption. The two-part model has become preferred in analysis like ours over models that require a strong exclusion restriction criterion, given the difficulty of making sound justifications on the exclusion restriction (Kilby 2006; Reinsberg et al. 2020). To be sure, the two-part model's independent estimation of the first and the second stages means that the second stage results (here about the allocation of conditionality on corruption) are *conditional* results, i.e. they are conditional on the country receiving a loan in the first place.

While we prefer the two-part model, we nonetheless also plug the probability of signing an IMF program as an Inverse Mills Ratio (IMR) into the second stage models as a check in order to show the robustness of our results (see Appendix D for the results). Additionally, we model the selection into IMF programs by using a selection instrument robustly defended by Lang (2020) and Stubbs et al. (2018): average IMF program participation of the country between the years 1997 and 2014 multiplied by the log of IMF's liquidity ratio (ratio of IMF's liquid resources to

the loans it granted in any given year). Results for all hypotheses using an instrumental variable for selection into IMF programs is in the Appendix D.

Our selection equation has a binary outcome that captures whether or not the country has a program in that year and have at least one Memorandum of Understanding.[26] Our allocation equation, when examining the number of corruption measures in an IMF MoU, uses OLS. To recall, our primary DV, *imfcorruptionnorm*, captures the relative frequency of corruption-related measures in an IMF program. We use OLS for obtaining more reliable results, and cluster the robust standard errors by country. We also employ negative binomial regression, where we use an integer version of our DV, which captures the absolute number of corruption-related measures. In examining whether or not a country received a corruption measure at all, i.e., when our DV is the presence or not of a corruption measure, we use a probit model.

Results

Even though we examine selection first, given the results are as expected from the vast literature that studies this issue[27], we report them only in Appendix C. Having a lower GDP per capita (i.e. being poorer), having lower reserves, and greater debt service increase the chances of receiving an IMF loan. Also, expectedly, alliance with the US, measured as the ideal point difference from the US at the UNGA, has a positive effect on a country's likelihood of borrowing from the Fund.

[26] We include the country has being under an IMF program (i.e. selection =1) until the country's program is completed.
[27] For a review on selection into IMF programs, see Bird and Rowlands (2016).

In the second part of our model, before we test our hypotheses, in Table 1, we examine a baseline model across our different DVs. Table 1 shows that as the country's level of corruption goes up (i.e. as its control of corruption goes down), the IMF's measures on corruption increase.

Table 1: Baseline Models

VARIABLES	(1) imfcorruptionnorm	(2) dummyimfcorruption	(3) intimfcorruption
Control of corruption	-343.1*	-0.258*	-0.189*
	(186.2)	(0.153)	(0.112)
Logged GDP pc	-139.9	-0.0575	-0.0763
	(115.1)	(0.0932)	(0.0611)
GDP growth	11.59	-0.0109	0.00210
	(21.07)	(0.0175)	(0.0119)
Reserves	4.215	0.00161	0.00155
	(3.107)	(0.00225)	(0.00107)
External debt	9.819	0.00849	0.00561
	(20.75)	(0.0147)	(0.00815)
Logged total IMF loan	50.01	0.0216	0.0173
	(80.58)	(0.0485)	(0.0454)
Constant	2,965***	-0.0238	1.117*
	(1,040)	(0.736)	(0.587)
Observations	337	337	337
Number of countries	110	110	110

Notes: Robust standard errors clustered by country in parentheses; *$p < .1$, ** $p < .05$, *** $p < .01$ for (1) and (3). (1) is OLS, (2) is probit; (3) is negative binomial regression based on the absolute count of mentions of corruption-related issues. In the probit estimation, average marginal effects are reported.

Table 2 focuses on H1, assessing the relationship between *imfcorruptionnormalized* and recidivism. Our results show that recidivism exerts a positive and significant influence on the number of corruption-related discussions in the MoU, controlling for the country's level of corruption and other relevant variables related to economic crisis. Statistically and substantively, it is the most significant predictor within this estimation model and remains robust across different model specifications. This also holds true for addressing the mentions of direct versus indirect

corruption. In fact, an additional year spent under an IMF program leads to an 0.8 increase in the absolute word count on corruption in non-frequency terms.[28]

Table 2: Recidivism and Corruption Measures in IMF Programs (H1)

VARIABLES	(1) imfcorruptionnorm	(2) dummyimfcorruption	(3) intimfcorruption
Recidivism	137.1***	0.102***	0.0726***
	(40.31)	(0.0215)	(0.0145)
Control of corruption	-347.6**	-0.296*	-0.205*
	(175.1)	(0.176)	(0.107)
Logged GDP pc	24.86	0.0725	0.0121
	(134.8)	(0.110)	(0.0648)
GDP growth	-5.142	-0.0223	-0.00769
	(19.90)	(0.0190)	(0.0115)
Reserves	4.208	0.00181	0.00188*
	(3.475)	(0.00249)	(0.00109)
External debt	11.73	0.0160	0.00653
	(21.08)	(0.0160)	(0.0106)
Logged total IMF loan	2.264	-0.0105	-0.0124
	(72.48)	(0.0545)	(0.0397)
Constant	1,520	-1.219	0.349
	(1,290)	(0.855)	(0.631)
Observations	337	337	337
Number of countries	110	110	

Notes: Robust standard errors clustered by country in parentheses; *$p < .1$, ** $p < .05$, *** $p < .01$ for (1) and (3). (1) is OLS, (2) is probit; (3) is negative binomial regression based on the absolute count of mentions of corruption-related issues. In the probit estimation, average marginal effects are reported.

A criticism here might be that repeat borrowers are a specific group of countries: they have weak institutions and fragile economies with a greater likelihood of facing an economic crisis and are less likely to be full-fledged democracies (Bird 2003). It might be argued that the IMF is more likely to address corruption in those countries because of those characteristics. We do control for most of these factors. Nonetheless, given this criticism, below we also estimate a selection model

[28] For ease of interpretation, we report the increase in the absolute mention of anti-corruption measures.

(using Inverse Mills Ratio) on the likelihood of borrowing from the IMF, and our findings stay robust to this alternative model specification (Appendix D). Similarly, the variable recividism in predicting the number of corruption mentions remains substantively and statistically significant when selection into IMF programs is estimated via an instrumental variable analysis (results are in Appendix D).

Our *H2* predicted that the political costs of the IMF's insertion of corruption-related conditionality will be lower, when the country is a newly elected democracy that wants to use IMF conditionality as a way to compel domestic reform. To assess this, we examine the interaction of the regime type and elections in the preceding year. Table 3 reports on these results.

The table is in line with our expectations from *H2*. In newly-elected democracies, we expected to see a "tying hands" mechanism to reduce corruption. Conversely, in non-democracies, we expected to have lower conditionality because the government would want to retain the proceeds from corruption as rents for its selectorate. The signs on our interactions between the Freedom House index and elections in the previous year support these expectations, albeit at a low level of significance.

Table 3: Democracy, Elections, and Corruption Measures in IMF Programs (H2)

VARIABLES	(1) imfcorruptionnorm	(2) dummyimfcorruption	(3) intimfcorruption
Freedom House index (FH)	28.84	0.0323	-0.0134
	(186.9)	(0.179)	(0.102)
Elections	-817.1*	-0.364	-0.600**
	(417.8)	(0.496)	(0.305)
Elections*FH	377.2*	0.308	0.276**
	(226.8)	(0.253)	(0.140)
Control of corruption	-310.7	-0.187	-0.194
	(235.7)	(0.193)	(0.149)
Logged GDP pc	-166.2	-0.0906	-0.0910
	(132.6)	(0.105)	(0.0730)
GDP growth	40.94*	0.00219	0.0211*
	(20.99)	(0.0203)	(0.0120)
Reserves	4.166	0.00104	0.00151
	(3.228)	(0.00236)	(0.00109)
External debt	9.614	0.00749	0.00503
	(20.04)	(0.0153)	(0.00773)
Logged total IMF loan	172.9**	0.0718	0.0897*
	(76.48)	(0.0557)	(0.0466)
Constant	1,506	-0.628	0.324
	(1,112)	(0.952)	(0.598)
Observations	289	289	289
Number of countries	100	100	

Notes: Robust standard errors clustered by country in parentheses; *$p < .1$, ** $p < .05$, *** $p < .01$ for (1) and (3). (1) is OLS, (2) is probit; (3) is negative binomial regression. In the probit estimation, average marginal effects are reported.

H3 expected that in the case of centralized corruption, we would expect to see higher levels of corruption-related measures in the IMF's MoUs. Based on extant economic theory, we hypothesized that in these cases, the IMF would have a single set of interlocutors it would have to target and convince to implement the anti-corruption conditionality. Therefore, centralization of corruption would increase the chances of these measures succeeding. Table 4 provides our

results—the key variable is the interaction of our *control of corruption* with our aforementioned federalism variable, which captures *local autonomy.*

Table 4: Centralized Corruption and Corruption Measures in IMF Programs (H3)

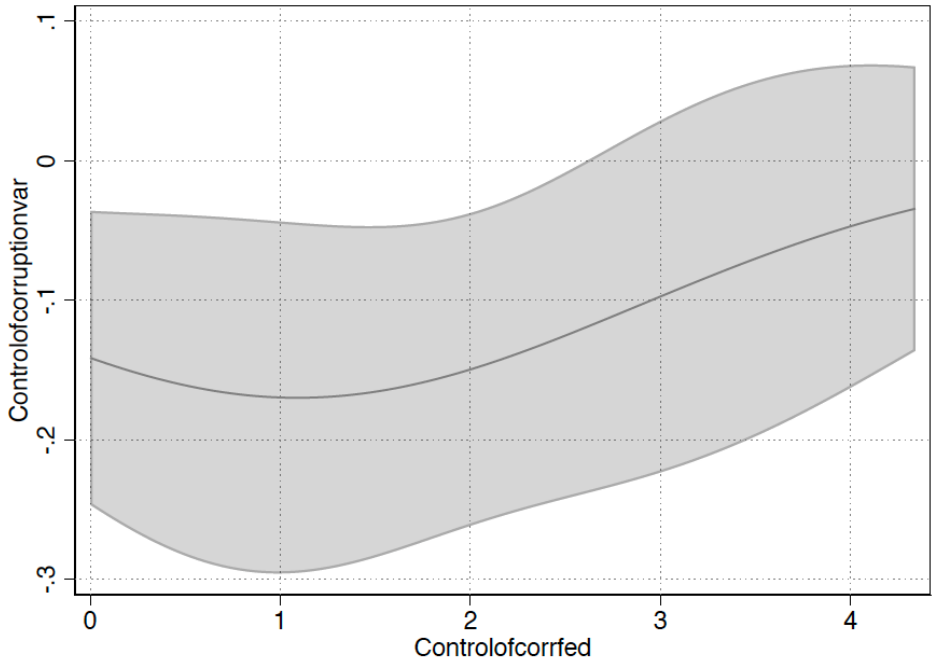
VARIABLES	(1) imfcorruptionnorm	(2) dummyimfcorruption	(3) intimfcorruption
Control of corruption	-342.1**	-0.468**	-0.265**
	(140.2)	(0.187)	(0.108)
Local autonomy	-1,126***	-0.810**	-0.693***
	(224.0)	(0.376)	(0.172)
Controlofcor.*local auto.	738.6***	0.610**	0.454***
	(115.3)	(0.246)	(0.0854)
Logged GDP pc	-223.5*	-0.0809	-0.159**
	(119.3)	(0.0990)	(0.0698)
GDP growth	30.15*	-0.00255	0.0147
	(17.45)	(0.0192)	(0.0113)
reserves	5.836*	0.00180	0.00231**
	(2.987)	(0.00233)	(0.000901)
external debt	3.127	0.00753	-0.000883
	(19.42)	(0.0153)	(0.0108)
Logged total IMF loan	104.4*	0.0516	0.0622*
	(57.97)	(0.0569)	(0.0359)
Constant	2,648***	-0.0588	1.115**
	(725.7)	(0.777)	(0.448)
Observations	295	295	295
Number of countries	102	102	

Notes: Robust standard errors clustered by country in parentheses; *$p < .1$, **$p < .05$, ***$p < .01$ for (1) and (3). (1) is OLS, (2) is probit; (3) is negative binomial regression. In the probit estimation, average marginal effects are reported.

Table 4's results support *H3* at high levels of significance. At a first glance, it might look like in higher corruption countries as local autonomy goes up, corruption-related measures increase (because of the positive interaction term between the control of corruption variable and federalism variable). However, the correct method of assessing the impact of the interaction term on the DV is by adding up the coefficients of local autonomy and the interaction term, which gives us a coefficient of approximately -338. In other words, in higher corruption countries as

decentralization goes up, the number of corruption-related measures decreases. In order to provide an easier interpretation of this interaction term, we provide a margins plot in Figure 5. This plot shows that the negative marginal effect of decentralization on the count of corruption increases as the level of corruption decreases (i.e. as control of corruption increases). Expectedly, as corruption increases, centralization increases the number of anti-corruption conditions.

Figure 5: Centralized Corruption and IMF Measures on Corruption



Notes: *Controloffed* is the interaction of *control of corruption* with local autonomy (federalism). 95% confidence intervals shown.

To further examine H3 we create two sub-samples, differentiating countries with high levels of corruption (i.e., low controls on corruption). High corruption countries are those that score below the mean on our *control of corruption* variable.[29] Our low corruption countries, in contrast, are above this average. One could argue that the determinants of corruption-related

[29] There is no significant difference if we use the median instead.

conditions in countries with low and high levels of corruption might be different. In other words, the IMF might be facing different contexts in these two types of countries. For this reason, we re-test our hypotheses in these sub-samples. Our results, in Table 4.1, intuitively suggest that the IMF pursues these measures in relatively high corruption countries.

Finally, we test the alternative hypothesis that being politically proximate to the US will reduce the borrowing country's likelihood of receiving corruption-related measures. One can argue that prominent shareholders of the Fund, and especially the US, might shield their allies from politically costly anti-corruption measures. Our US alliance measure is the one that the literature has widely relied on: political voting similarity to the US at the UNGA (Voeten et al. 2009; Dreher and Gassebner 2012; Steinwand and Stone 2008). We specifically use the ideal distance point to the US: as the distance increases, the level of alliance with the US decreases. Statistically, political proximity to the US at the UNGA is not significantly related to the IMF's allocation of conditionality on corruption. A battery of different model specifications and alternative measurements confirm this finding.[30] We also theoretically expected this outcome, as the US needs to pick and choose the issues over which to intervene, and it is unlikely to intervene on this matter (Section II).

[30] The results are in Appendix D (robustness checks).

Table 4.1: Centralized Corruption and Corruption Measures (H3): Sub-Sample Analysis

VARIABLES	(1) Low Corruption Countries	(2) High Corruption Countries
Control of corruption	368.818	-691.436***
	(397.541)	(215.544)
Local autonomy	-302.363	-1,030.707***
	(819.952)	(249.496)
Control of cor*Local autonomy	318.745	494.939**
	(475.787)	(199.978)
Logged GDP pc	-179.235	-267.268**
	(326.778)	(132.625)
GDP growth	105.354*	35.276*
	(56.172)	(18.361)
Total reserves	15.529	5.420*
	(12.154)	(2.966)
External debt	224.993*	-2.623
	(116.830)	(20.944)
Logged total IMF loan	55.874	151.412**
	(157.158)	(62.583)
Constant	-604.647	2,841.230***
	(1,997.646)	(730.757)
Observations	36	259
Number of countries	23	91

Notes: Robust standard errors clustered by country in parentheses; *$p < .1$, **$p < .05$, ***$p < .01$; OLS.

Additional robustness checks

By using different estimations, we have already checked the robustness of our results. In this section, we discuss some additional robustness tests, which are reported in Appendix D. First, we look at the alternative explanation that the US allies might receive fewer politically controversial anti-corruption measures. We do not find any significant impact of being a US ally—measured as the distance to the US foreign policy—on IMF's corruption related measures. Second, we report our results for our three hypotheses after accounting for the probability of

getting into an IMF program based on our selection model through calculating an Inverse Mills Ratio (IMR) and by instrumenting participation in IMF programs via IMF's liquidity ratio and average program participation of borrowing countries, which is the standard in recent work on the IMF (Lang 2020; Stubbs et al. 2020). As Appendix D shows, our results stay robust throughout except for limited support for *H2*.[31] We also test our hypotheses using the IMF's MONA database for corruption-related measures. Our findings remain substantively and statistically significant, again except for limited support for *H2.* Finally, we test *H3* by using the alternative measure of tax and revenue shares of local and central governments—a proxy for centralization (decentralization) in the country. We show that as the tax and revenue share of local governments increases (which proxies higher levels of decentralization), the Fund's likelihood of pressing for corruption-related measures decrease. Conversely, as centralization increases and the tax and revenue share of the central government within the general government increase, this provides the Fund more incentive to address corruption in a borrowing country. Detailed results are presented in Appendix D.

VI. Conclusion

In this paper, we provided the first comprehensive account of the IMF's — one of the most powerful IOs in the international system— approach to corruption among its borrowers. The IMF formulated an approach to addressing corruption and promoting good governance in 1997 with the release of a policy note. This note was updated in 2018 with the admission that the Fund has

[31] Additional robustness checks include Zero-Inflated negative binomial, Zero-Inflated Poisson and Zero-truncated negative binomial regressions, which are not reported due to space limitation, but can be provided upon request.

not been even-handed among its borrowers. The institution, however, has not yet provided a systematic analysis of its treatment of corruption in its loan programs, nor a thorough understanding of the nature of its uneven treatment. Although the IMF wields an important tool with which to address corruption, namely conditionality in its loan arrangements, the literature on the institution continues to lack an understanding of how the IMF has actually approached this issue that is integral to economic development.

This paper remedies that gap. Particularly, it examines why the IMF would utilize its powerful tool in some cases, inserting corruption-related conditionality in its loan programs, but not in others. Our novel dataset, which is based on a text analysis of nearly all of the IMF's MoUs between 1997-2019, shows that the country's level of corruption does not adequately explain this uneven treatment. We use text analysis because, as we show, the political sensitivity of corruption leads the issue to be not always directly articulated in IMF programs.

Our theoretical framework argues that the IMF will wish to insert anti-corruption conditionality, but it will be discouraged from doing so due to political costs, given the politically contentious nature of anti-corruption measures. We suggest that the IMF will want to address corruption issues in its borrowers because of the benefit of improved protection of its own resources, reputation, and the promotion of a good norm.

However, the IMF will be inclined to insert anti-corruption measures only when the political costs are relatively low. We argue that these costs are lower when the country is a repeat borrower from the institution, and when the country seeks to tie its hands to reform. We also assert that the IMF has a greater incentive in attaching anti-corruption conditionality, when the country has centralized corruption, which can be more easily addressed . In making this specific argument, we borrow from economics and argue that when corruption is centralized, the IMF can identify

and target a specific group of governors for its corruption-related measures. In these cases, the benefits of inserting corruption-related measures may outweigh the extant political costs. Put differently, we conceptualize when the benefits are held constant and the costs decline, providing an opportunity for the IMF to include anti-corruption conditionality, as well as when the benefits are high enough for the IMF to bear the costs.

We analyze both the level of corruption-related measures as well as the likelihood of receiving any measure on corruption. We find that the IMF's recidivist borrowers are more likely to receive corruption-related conditions, and being a recidivist significantly boosts the number of these measures. Based on the existing literature, we explain that this is because recidivists face relatively lower domestic costs in accepting IMF conditionality, since they have already agreed to an IMF program before. And, the IMF, in turn, faces lower political costs in pushing this kind of unpopular programs in these countries, with which it has a well-established relationship.

We also find that political costs will be lower if the domestic regime seeks this kind of reform. Specifically, we find that newly elected governments will sometimes seek to bind themselves to IMF conditionality to induce their preferred domestic reforms. In contrast, in non-democracies, the benefits from corruption will be important in appeasing the "selectorate". Notably, however, our evidence for this argument is not as robust as the other core hypotheses.

Additionally, based on the economics literature on corruption, we also find some evidence that if corruption is centralized in a country, the IMF is more likely to assign anti-corruption conditions. In contrast, in line with our theoretical expectations, we do not find any evidence that the country's proximity to the USA affects its receipt or level of corruption-related measures. We expected this to be the case because the literature suggests that although major shareholders exert

significant influence over the IMF, they are also careful, selective in exercising this kind of influence, given that it can delegitimize the institution (Stone 2011).

The paper simultaneously speaks to a number of different debates. It continues the long-standing trend in the literature to pursue nuanced, disaggregated analysis of IMF conditionality. It advances this debate, through a novel dataset, to a relatively under-examined issue. It also demonstrates, particularly through its discussion on political costs, how the institution manages its semi-autonomous policy agenda, while responding to the demands of borrowing and non-borrowing shareholders. Since good governance and low corruption can also be understood as norms, this study also contributes to the understanding of the institution's spread of ideas and norms. It measures the norm and displays its uneven distribution across different IMF borrowers. Above all, corruption drains the already scarce resources of developing countries, which seek IMF funding because of economic difficulties in the first place. It diverts the use of resources to a top elite away from the general public, harms growth, and exacerbates income inequality. It hampers economic development. Therefore, both addressing it and analyzing it should be central concerns in scholarship and policy on central multilateral economic institutions.

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Appendix

Appendix A: Corruption Key Words

(direct) Corruption: corruption; graft; corrupt; abuse; abuse of public office; public office for private gain; bribe; bribery; abuse by public actors; theft; embezzlement; abuse public office; nepotism; procurement; inflated public procurement costs; distorted procurement costs; inflated procurement costs; procurement costs; malfeasance; fraud; fraudulent; rent-seeking; cronyism; siphoning of public funds; siphoning of funds; misappropriation; misappropriated funds; vested interests; money laundering; political patronage; convicted officials; crime; criminal groups; financial crimes; threat of prosecution; asset declaration for high-level officials; assets of high-ranking officials; power purification; receiving any gifts and advantages; misuse; underreporting of wages; suspicious transaction; kickbacks; distort; discretion; discretionary power; Anti-Bribery Corruption; the financing of terrorism (CFT); AML/CFT; anti-money laundering/combating the financing of terrorism.

(direct) Anti-corruption: anti-corruption measures; anti-corruption strategy; anti¬ corruption law; anti-corruption commission; Anti-Corruption Commission; anti-corruption bureau; anti-corruption office; whistle-blower protection; procurement rules; anti-money laundering; AML; Convention on Combating Bribery of Foreign Public Officials in International Business Transactions; excessive regulation; red tape; red tape; discretionary power; low wages in the civil service; wages in the civil service; civil service wages; public financial management (PFM); Public Investment Management Assessments (PIMAs)

(indirect) Accountability and Transparency: accountability; transparency; disclosure; oversight; public sector accountability; transparency of budgetary law; public budget transparency; transparent budget; fiscal transparency; improve fiscal reporting; independent scrutiny; external scrutiny; off-budget transactions; tax loopholes; disclosure of procurement; audit agency; supreme audit institutions; SAIs/SAI; internal control rules; audit; audited budget; publish statistics; reporting of cash transactions and international funds transfers; report transfers; report transactions; government transactions; government receipts

(indirect) Other corruption: distrust of government; illicit; illegal; public procurement; tax collection; tax administration; tax evasion; tax compliance; customs compliance; the rule of law; digitalization; e-government; customs; licensing; licensing procedures; licensing rules; integrity; inclusive growth; policy distortion; regulatory capture; preferential treatment; data inconsistencies; inconsistencies in data; excessive intervention; excessive public intervention; efficiency of public spending; expenditure framework; fiscal governance; uneven administrative decisions; uneven implementation of the law; partial and discriminatory enforcement of laws; implementation bottlenecks; "pressures" under the tax system; "selective decisions" by officials; predictability of the tax regime; transparency and fairness of privatization; transparency of budgetary process; and connected lending.

Appendix B: Description, Sources, and Summary Statistics for Variables

B1. Description and Sources of Variables for the Selection Model

Variables	Description and sources
Logged GDP per capita income	GDP per capita (constant 2010 US$); sourced from World Bank World Development Indicators (WDI)
GDP growth	Change in GDP per capita (constant 2010 US$); sourced from World Bank World Development Indicators (WDI)
External Debt	Total debt service as % GNI; sourced from World Bank World Development Indicators (WDI)
Reserves	Total reserves as % of external debt from World Bank; sourced from World Bank World Development Indicators (WDI)
US ally (distance to the US)	Ideal point difference between country *i* at time *t* and the US time t; Sourced from Voeten et al. 2009 'United Nations General Assembly Voting Data'

B2. Summary statistics for Selection Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Logged GDP pc	4,494	8.481747	1.488876	5.233868	11.62597
GDP growth	6,243	3.685269	5.289109	-62.07592	149.973
Reserves	6,238	46.41898	147.9802	.0094387	3840.12
External debt	6,237	4.138463	4.51207	0	68.57516
US ally	4,499	2.845781	.8719781	0	4.966125

B3. Description and Sources of Variables for the Allocation of Conditionality (Second Stage)

IMF Corruption (Normalized)	Authors' own calculation (please see Appendix A for key words used in the text analysis) Normalized count=frequency of word/total word count in that MoU; we multiply this number by 1000 for ease interpretation.
IMF Corruption (Count)	Authors' own calculation (please see Appendix A for key words used in the text analysis)
IMF Corruption (Dummy)	'1' if there was a corruption-related condition; '0' otherwise; Authors' own calculation (please see Appendix A for key words used in the text analysis)
Recidivism	Cumulative number of years spent under an IMF program; authors' own calculation based on the MONA database
Elections	'1' if there were either a presidential or a parliamentary election in the previous year, '0' otherwise; sourced from World Governance Index (WGI) executive election (presidential elections) and legislative elections (parliamentary elections) variables.
Freedom House Index	3' if a country is free, '2' if partly free; and '1' if not free; sourced from Freedom House Index
Local Autonomy (federalism)	Proxy for decentralization of governance; '1' if there is an autonomous region, '0' otherwise; Database of Political Institutions (DPI)
Control of Corruption	Control of corruption estimate from the World Governance Indicators (WGI, wgi_cce)
Logged IMF loan size	Total amount of a loan in SDR; sourced from MONA database

B4. Summary Statistics for the Allocation of Conditionality (Second Stage)

Variable	Obs	Mean	Std. Dev.	Min	Max
Corruption(normal.)	345	2260.072	2186.488	0	31578.95
Corruption (count)	345	13.62512	12.77693	0	74
Dummy corruption	345	.3188406	.466704	0	1
Recidivism	345	6.02029	4.730793	0	21
Elections	3,572	.2707167	.4443922	0	1
Freedom House Ind.	4,319	1.770086	.8059378	1	3
Local autonomy	3,747	.142514	.3496232	0	1
Control of corrupt.	345	110.744	61.4508	9.250417	299.6745
Log total IMF loan	350	12.12379	1.96529	6.946976	17.52208

Appendix C: Selection into IMF Programs

Table C1: Selection Model

VARIABLES	(1) Selection into IMF programs
Log GDP pc.	-0.0432***
	(0.0047)
GDP growth	-0.0017**
	(0.0008)
Reserves	-0.0004***
	(0.0001)
External debt	0.0016**
	(0.0008)
Distance to USA	-0.0242***
	(0.0071)
Observations	4405

Notes: Probit regression for panel data; standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Selection=1 if the country has borrowed from the IMF in that year, and selection=0 if the country is an emerging and developing country and has not borrowed from the IMF in that year.

Appendix D: Robustness Models

Table D1: Alternative Explanation-US Ally

VARIABLES	(1) imfcorruptionnorm	(2) dummyimfcorruption	(4) intimfcorruption
Distance to USA	-301.0	-0.173	-0.192
	(291.3)	(0.140)	(0.153)
Control of corruption	-362.3*	-0.269*	-0.202*
	(188.8)	(0.153)	(0.117)
Logged GDP pc	-207.4	-0.0935	-0.116*
	(128.3)	(0.0970)	(0.0705)
GDP growth	10.38	-0.0112	0.00141
	(21.37)	(0.0174)	(0.0121)
Reserves	3.528	0.00125	0.00122
	(3.316)	(0.00225)	(0.00119)
External debt	5.948	0.00653	0.00263
	(19.03)	(0.0148)	(0.00760)
Logged total IMF loan	43.15	0.0167	0.0114
	(75.96)	(0.0485)	(0.0423)
Constant	4,513***	0.855	2.092***
	(1,328)	(0.998)	(0.727)
Observations	337	337	337
Number of countries	110	110	

Note: Numbers in parentheses represent standard errors; *p < 0.10, **p < 0.05, ***p < 0.01.

Table D2: Robustness Checks (Inverse Mills Ratio)

VARIABLES	(1) imfcorruptionnorm	(2) imfcorruptionnorm	(3) imfcorruptionnorm
Freedom House (FH)		-74.07	
		(176.2)	
lections	e	-550.4	
		(555.2)	
Election*FH		334.4	
		(329.2)	
Control of corruption	-166.0	-79.32	-324.1**
	(158.7)	(252.0)	(164.8)
Logged GDP pc	-375.3***	-414.2***	-381.0***
	(109.0)	(141.7)	(127.7)
GDP growth	9.911	14.02	30.06**
	(16.55)	(18.14)	(15.23)
Reserves	9.615	13.35**	13.77**
	(6.124)	(6.365)	(5.949)
External debt	8.573	2.829	6.481
	(24.30)	(24.08)	(21.41)
Logged total IMF loan	79.45	113.9**	106.4**
	(49.21)	(53.02)	(53.97)
IMR	-3.294	-7.582	-2.039
	(2.685)	(7.698)	(3.085)
Recidivism	84.79***		
	(31.74)		
Local autonomy			-833.6***
			(291.6)
Control of corr*local auto.			710.2***
			(188.2)
Constant	3,130***	3,344***	3,226***
	(729.9)	(838.4)	(740.6)
Observations	151	138	145
Number of countries	72	68	70

Note: Numbers in parentheses represent standard errors; *p < 0.10, **p < 0.05, ***p < 0.01.

Table D3: Robustness Checks-Selection into IMF programs instrumented via IMF's liquidity ratio

VARIABLES	(1) Hypothesis 1 (recidivism)	(2) Hypothesis 2 (elections*democracy)	(3) Hypothesis 3 (centralized corruption)
IMF program participation	-4,404	-11,779	-15,266
	(3,154)	(10,082)	(16,632)
Recidivism	255.3***		
	(84.88)		
Control of corruption	932.4	188.5	2,658
	(641.5)	(2,002)	(2,935)
Log GDP pc.	-2,521	-1,942	-3,098
	(1,600)	(3,582)	(4,908)
GDP growth	62.97	178.9	163.1
	(45.22)	(180.9)	(208.9)
Reserves	7.396	47.94	48.83
	(13.43)	(43.06)	(56.67)
External debt	62.42	143.6	158.5
	(42.90)	(119.3)	(158.0)
Log total IMF loan	-268.2	-428.2	-529.7
	(215.1)	(550.5)	(775.3)
Elections*freedomhouse		-66.29	
		(449.0)	
Local autonomy			-311.5
			(5,299)
Control of corr*federalism			-185.9
			(3,940)
Constant	24,543*	28,173	37,594
	(13,453)	(34,561)	(49,526)
Observations	278	245	258
Number of countries	109	100	102

Note: Numbers in parentheses represent standard errors; *p < 0.10, **p < 0.05, ***p < 0.01.

Table D4. Robustness Checks- MONA Dataset

VARIABLES	(1) Recidivism	(3) Elections*democracy	(5) Centralized corruption
Recidivism	0.0623***		
	(0.0179)		
Control of corruption	-0.322*	-0.170	-0.458***
	(0.173)	(0.162)	(0.168)
Log GDP pc.	-0.111	-0.186**	-0.176*
	(0.0944)	(0.0924)	(0.0957)
GDP growth	-0.0130	-0.0108	-0.00836
	(0.0211)	(0.0195)	(0.0200)
Reserves	0.00318	0.00289	0.00274
	(0.00232)	(0.00250)	(0.00236)
External debt	0.00137	-0.00407	-0.000335
	(0.0121)	(0.0106)	(0.00963)
Log total IMF loan	0.00430	0.00309	-0.0106
	(0.0492)	(0.0516)	(0.0547)
Elections*FH		0.0755	
		(0.0851)	
Local autonomy			-1.012***
			(0.375)
Control of corr*local autonomy			0.568**
			(0.266)
Constant	4.075***	4.931***	5.380***
	(0.737)	(0.685)	(0.719)
Observations	313	272	279

Note: Numbers in parentheses represent standard errors; *p < 0.10, **p < 0.05, ***p < 0.01.

Table D5. Robustness Checks-Tax and Revenue Share of Central Government versus Local Government

VARIABLES	(1) Local government revenue share	(2) Central government revenue share	(3) Local government tax share	(4) Central government tax share
Loc. gov. rev. share	-9.108**			
	(4.332)			
Log GDP pc.	-0.952**	-1.069***	-0.938**	-0.673*
	(0.386)	(0.396)	(0.394)	(0.354)
GDP growth	0.00405	-0.0709	-0.0454	-0.0166
	(0.0479)	(0.0710)	(0.0433)	(0.0361)
Reserves	-0.000669	0.00771		
	(0.00601)	(0.00637)		
External debt	0.104*	0.0802*		
	(0.0540)	(0.0453)		
Log IMF loan	0.0801	0.181	0.255*	0.162
	(0.157)	(0.169)	(0.140)	(0.120)
Cen. Gov. rev. share		2.915*		
		(1.638)		
Central Gov. tax share			3.998*	
			(2.200)	
Control of corruption			0.317	0.106
			(0.427)	(0.394)
Loc. Gov. tax share				-3.667*
				(2.108)
Constant	6.498**	3.383	0.0134	3.252
	(3.245)	(3.327)	(3.139)	(2.165)
Observations	58	53	73	78
Number of countries	23	22	29	30

Notes: Dependent variable binary IMF corruption variable; probit model for panel data with robust standard errors; Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

The analysis in Table D5 uses the tax and revenue decentralization measures coming from the IMF's fiscal decentralization data set. The data set measures the total revenue collected by the central government and turns this into a ratio of the revenue collected by all branches of the government, i.e. general government (total of revenues of local, central, and state governments).

The same measure is available for local governments. Higher revenue share for central government indicates a greater level of centralization. Conversely, a greater ratio of revenue for the local government shows a greater administrative decentralization in the country. The IMF also collects data on the ratio of tax collected by central governments (or local governments as a separate measure) with respect to the overall tax revenue for the general government. The analysis shows that, as our theory predicts, greater decentralization (in other words, greater revenue and taxes collected by the local governments) reduces the likelihood of the IMF addressing corruption in the borrowing country. Regrettably, there are many missing points on the data set and very few observations are available for analysis. We use this measure for robustness checks in order to provide additional evidence for our hypotheses despite the low number of cases available.