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Why cronies don't cry? IMF programs, Chinese lending, and leader survival

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Abstract
Many countries in the Global South have increased their exposure to Chinese debt in recent years. With the COVID-19 pandemic and the US interest rate hike, many countries have struggled to meet their debt repayment obligations. As a result, they have turned to the International Monetary Fund (IMF) for emergency assistance. We argue that the involvement of the Fund wipes out much of the political benefits of China loans for executive leaders of borrowing countries. IMF conditionality requires countries to increase fiscal transparency, which threatens the viability of kickback schemes and increases the likelihood that corrupt leaders will be called out on their misdealing. As a result, we expect corrupt leaders with China debt to leave office earlier when they try to address debt defaults with IMF loans than when they avoid them. Using survival analysis on a dataset of 115 developing countries between 2000 to 2015, we find that leaders indebted to China that go under an IMF program leave office earlier compared to when they do not go under an IMF program. In line with our argument, this effect is strongest in more corrupt regimes. Our argument and analysis contribute to understanding international finance's political economy, specifically how mixing creditors can be politically risky for leaders.

Keywords China loans · China debt · International Monetary Fund · IMF program · Leader survival · Corruption

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1 Introduction

China has emerged as a major creditor to developing countries (Horn et al., 2020; Zeitz, 2021; Gelpern et al., 2021). A growing body of literature has explored the impacts of Chinese loans on various outcomes, including economic growth, democratic governance, and environmental degradation (Dreher et al., 2022; Ping et al., 2022; Baehr et al., 2022). From the perspective of borrowing countries, Chinese lending enables governments to secure popular support, appease elites, and diminish the influence of other international donors (Hernandez, 2017; Zeitz, 2021; Broz et al., 2020; Cormier & Manger, 2021; Watkins, 2021). By allowing borrowing governments to satisfy the demands of key constituents, China loans help prolong the tenure of these governments (Kern et al., 2022).

Following a series of recent shocks—from the COVID-19 pandemic to the hike in US interest rates—many borrowers find themselves on the brink of default. Global financial conditions have tightened, and borrowing countries can no longer meet their debt obligations. Compounded by 'hidden debt' (Gelpern et al., 2022; Cormier, 2020b; Brown, 2022), creditors are unwilling to restructure debt, leaving countries no other choice but to turn to the International Monetary Fund (IMF)—as the global 'lender of last resort'—to seek financial relief (Kern & Reinsberg, 2022).

Despite an extensive body of research on sovereign borrowing and Chinese lending, the consequences of mixing multiple sources of credit are poorly understood.[1] We argue that IMF involvement in borrowing countries with high exposure to China loans ultimately shortens leader tenure. We derive this expectation from the unique characteristics of China loans and the pervasive lack of creditor coordination in global financial governance. Specifically, the confidential nature of China loans makes them susceptible to corruption (Bluhm et al., 2018; Gelpern et al., 2021; Dreher et al., 2022). The preference of Chinese creditors to lend to governments—coupled with the principle of non-interference in domestic politics—makes China loans a unique tool of statecraft for leaders with malevolent intentions. These unique political benefits of China loans are threatened when leaders need an IMF bailout. While IMF loans provide leaders with short-term access to resources, in the long run, the policy conditions of IMF programs will politically hurt leaders in debt to China. Increased fiscal transparency requirements of IMF programs curtail misuse of Chinese loans.

To test our argument, we use survival analysis on a dataset of 115 developing countries between 2000 to 2015. Specifically, we examine leaders' political survival as a function of China loans and IMF program participation. We demonstrate that once leaders with China loans need to turn to the IMF, the political benefits of these loans disappear. While IMF bailouts provide leaders a short-term boost to political survival, they increase the hazard of ouster in the long term. These findings remain consistent across an array of robustness tests and are supported by an instrumental variable model designed to mitigate the endogeneity associated with IMF programs. Our interpretation of these outcomes underscores the idea that the transparency mandates inherent in IMF programs gradually hinder leaders from employing China loans for political objectives.

Our argument and analysis contribute to the understanding of the political economy of international finance in several ways. First, we focus on the conditions under which

[1] We note that China loans and IMF programs are not direct substitutes, as they serve different purposes. While China loans often finance infrastructure projects, IMF loans provide short-term relief on the balance of payments not tied to specific development projects. This is why we take a two-step approach in that we examine the political effects of IMF involvement, taking borrowers' exposure to China loans as given.

Chinese loans help leaders prolong their tenure in office. Previous research has shown the importance of international financial resources to leaders' political survival (Yuichi Kono & Montinola, 2009; DiGiuseppe & Shea, 2016; Kern et al., 2022). In this context, we contribute to the growing literature that analyzes the political and economic consequences of increased financial interdependence of emerging markets and developing economies with respect to China (Petry, 2021; Kaplan, 2021; Jenkins, 2022).

While the political benefits of China loans to leaders, especially corrupt ones, are well documented in the literature (e.g., Kaplan, 2021), our study highlights the dissolution of these benefits once leaders participate in an IMF program. The extensive IMF conditionality—particularly the transparency requirements—limits leaders' ability to misuse China's lending for political purposes (Sharman, 2017).

We also advance the literature on leader survival, especially in the context of IMF programs (Smith & Vreeland, 2004; Williams, 2012; Dreher & Gassebner, 2012; Casper, 2017). We examine how mixing creditors can shorten leader tenure, making domestic political conditions more difficult for leaders. From this perspective, our findings also contribute to the politics of adjustment research in the context of IMF programs (Bienen & Gersovitz, 1985; Nelson & Wallace, 2017; Haggard & Kaufman, 2018; Reinsberg et al., 2019).

Finally, we contribute to ongoing policy debates on debt restructuring involving China loans.,[2] Although there are legitimate debates about the technical aspects of resolving debt distress involving China (Hurley et al., 2019; Singh, 2020; Usman, 2021), there is less discussion on the politico-economic consequences of these bailouts. Our findings support the notion that the IMF's programs, in addition to providing a financial lifeline to countries in dire financial straits, have the potential to shorten corrupt governments' tenure in office when these are borrowers of Chinese loans.

2 Literature and hypotheses

2.1 The political economy of international finance

A vast literature on sovereign finance and leader survival has established that external finance boosts the political survival of leaders (Wright, 2009; Bader & Faust, 2014; DiGiuseppe & Shea, 2015; Yuichi Kono & Montinola, 2009). This survival-enhancing effect exists because leaders need fiscal resources to stay in power. Among the possible financing options, which among others include tax revenue, natural resource rents, and grants and loans from external actors, external finance is the most attractive. Taxation decreases the utility for taxpayers and will increase their demands for leader accountability (Levi, 1988; Fjeldstad, 2004; Besley & Persson, 2011). Natural resources provide leaders with more discretion that they can invest in extending their tenure (Morrison, 2009), but these resources may also generate perverse economic effects, such as the over-valuation of exchange rates (Bermeo, 2016). Foreign aid tends to shift accountability to donors while generally reinforcing the recipient regime (Bueno De Mesquita & Smith, 2010; Ahmed, 2012; Licht, 2010). Sovereign credit helps leaders prolong their tenure by easing short-term financing constraints (Tomz & Wright, 2013; DiGiuseppe & Shea, 2016, 2018). In general, access

[2] Our analysis also relates to research on strategic debt management (Roubini & Setser, 2004) moral hazard (Aklin & Kern, 2019), and international bailouts (Schneider & Tobin, 2020).

to non-tax revenues increases the political survival of leaders, though the effects may vary across regime type (Yuichi Kono & Montinola, 2009; Licht, 2010; DiGiuseppe & Shea, 2015).

Focusing on sovereign credit, what happens when borrowers use multiple creditors with competing demands? Governments may access diverse sources of financing, from international banks, bond markets, multilateral development banks, and bilateral donors (Hernandez, 2017; Bunte, 2019; Cormier, 2020b; Greenhill et al., 2016). Many developing countries are also using Chinese creditors, including Chinese central government agencies, the China Export-Import Bank, the China Development Bank, and state-owned commercial banks (Custer et al., 2021). Together, Chinese creditors have been lending more to developing countries than any other creditor group for over 10 years, including prominent financiers like the World Bank, the Paris Club governments, and the International Monetary Fund (IMF) (Horn et al., 2020).

A burgeoning literature has examined the effects of China loans for various outcomes in borrowing countries, including economic growth, democratic governance, and environmental degradation (Dreher et al., 2022; Ping et al., 2022; Baehr et al., 2022). There is also evidence that China loans help leaders stay in power (Kern et al., 2022). Similarly, scholars examined how IMF program participation affects leader survival. Theoretically, IMF loans provide liquidity in dire financial situations but involve conditions that might force governments to enact unpopular austerity and structural adjustment measures. Empirically, IMF programs tend to stabilize leaders, although program design and domestic institutions moderate this relationship (Smith & Vreeland, 2004; Williams, 2012; Casper, 2017).

Only a few studies have considered how creditors adjust their lending policies due to competition for influence in developing countries (Hernandez, 2017; Zeitz, 2020; Ferry & Zeitz, 2022; Kern & Reinsberg, 2022). For example, in response to Chinese finance, the World Bank has increased its infrastructure finance (Zeitz, 2020). Concerning development policy lending, China borrowers face fewer conditions from the World Bank (Hernandez, 2017). In contrast, the IMF imposes a higher-than-usual number of conditions when facing a borrower heavily exposed to China debt (Kern & Reinsberg, 2022). Overall, China and non-Chinese creditors struggle to cooperate on debt-related issues (Buchheit & Gulati, 2021; Setser, 2022; Chabert et al., 2022). For instance, the current Zambian debt restructuring clearly illustrates that "*the architecture for getting creditors to agree [...] is currently unsettled*" (Setser, 2022), showcasing the challenges of establishing even a basic bargaining framework. While research does consider creditor interactions, they focus only on the supply side. A remaining puzzle is how the presence of multiple creditors affects the politics of borrowing governments.

In the next section, we begin to address this puzzle. First, we examine the political benefits of China loans in the absence of IMF program participation. Second, we study the survival implications for a leader with China debt obligations who must participate in an IMF program. To our knowledge, ours is the first study to assess how non-Western finance and Western finance interact to affect leader survival.

2.2 China lending and leader survival

We assume that leaders are survival-motivated. Therefore, they will use external resources such as China loans to satisfy the demands of their constituents. These constituents are different for leaders under different regimes (Bueno de Mesquita et al., 2003). In particular, democratic leaders may use China loans to finance public goods, such as infrastructure

projects that unlock economic development opportunities. In many places, China finance fills a critical gap left by traditional financiers, with likely positive electoral consequences for leaders who channel Chinese loans to woo key constituents (Braeutigam, 2011; Herrera-Vinelli & Bonilla, 2019; Dreher et al., 2022). Conversely, autocratic leaders may use China loans to provide private goods to a narrow elite. Like other external resources, Chinese financing enables governments to build patronage schemes for elites (Bluhm et al., 2018; Gelpern et al., 2021; Dreher et al., 2021). This is because China loans are often hidden from public purview (Horn et al., 2021; Gelpern et al., 2022; Brown, 2022; Cormier, 2020a).

Given these theoretical expectations, China loans should boost the survival of all leaders, particularly corrupt leaders, whose survival strategies rest on patronage schemes with allied elites. Recent research confirms these expectations (Kern et al., 2022). This research establishes that China loans increase the survival of all leaders. In addition, more corrupt leaders benefit most from China loans concerning their survival in office. The research further establishes a significant increase in offshore financial deposits, providing suggestive evidence of the type of kickback schemes underlying China loans.

In the next section, we explore how IMF program participation of leaders who borrowed from China affects their survival. We focus on how IMF program participation affects leaders' ability to sustain the political benefits of China loans.

2.3 China loans and IMF programs

What happens if a Chinese borrower must turn to the IMF? While China lends to increase influence and expand trade, repayment is a priority (Dreher et al., 2022). To ensure repayment, China sets up collateralized payment systems that take payment processes largely out of the hands of leaders and prioritize repayment of China loans over other creditors (Gelpern et al., 2021). Resource-rich countries such as Ecuador, Zambia, and Angola put their state's resource endowment as collateral for accessing Chinese loans, while resource-poor states allocate the expected revenue from their investment projects (Horn et al., 2020). As a result, states should theoretically be able to repay China loans, and thus higher Chinese debt burden should not negatively affect leaders in isolation.

States borrowing from China, however, will not be insulated from debt crises. For example, since the outbreak of the COVID-19 pandemic, a record number of countries have submitted applications for bailout funding to the IMF. In addition, given that China debt is often kept off of states' official budgets (Horn et al., 2020), it may be the case that China loans increase distress to other creditors.

Once Chinese project revenues fall short of loan payments, governments need to find alternative funding sources (Kern & Reinsberg, 2022). China does offer restructuring options on some loans, but these are not always sufficient to lift governments out of debt distress (Kratz et al., 2019; Acker et al., 2020; Bon & Cheng, 2020; Kern & Reinsberg, 2022).

What happens when states indebted to China need additional fiscal resources? Like other indebted states, we expect China's debtors to turn to the IMF. In the short term, IMF programs provide liquidity, which should help leaders avoid ouster. In the long run, IMF-imposed conditionalities require fiscal adjustment, which would limit the political benefits of fiscal policy. Recent evidence suggests that countries with more China debt face a higher-than-usual number of binding IMF conditions (Kern & Reinsberg, 2022). From an

IMF perspective, more numerous conditions help countries avoid further financial instability (Bird & Willett, 2004; Dreher, 2009; Kaplan & Shim, 2021). At the same time, these conditions limit governments' autonomy to use fiscal resources as they see fit.

IMF conditions that impose enhanced fiscal austerity and transparency will particularly hurt countries in debt to China. The opaque nature of China loans allows governments to misuse China loan funding for political purposes (Gelpern et al., 2021; Bennon & Fukuyama, 2022; Kern & Reinsberg, 2022). IMF transparency requirements will limit how much a leader could misuse China loans (Hillman, 2004; Reinsberg et al., 2020). From this follows our hypothesis:

Hypothesis 1: IMF programs decrease leader tenure for leaders indebted to China.

We expect that the more stringent an IMF program, the less likely that leaders can use government resources for political gains, thus hurting leader survival. We expect an IMF program's shortening effect on leader survival to be most pronounced among corrupt leaders. This does not necessarily mean that the effects vary by regime type. While there is substantial literature analyzing the linkages between external financing conditions, regime type, and leader survival (Yuichi Kono & Montinola, 2009; Licht, 2010; DiGiuseppe & Shea, 2015), we expect that the effects of China loans and IMF programs to hold on both democracies and non-democracies.

3 An illustrative case: Zambia

To illustrate the underlying dynamics of our theory, we draw on the recent case of Zambia. This case demonstrates how China loans can be misused for political purposes and the consequences of mixing IMF programs with China debt.

China was the largest bilateral creditor to Zambia, although the extent of this debt burden did not become clear until after the default. Although China offered debt relief and delayed payments in public to Zambia, these efforts could not prevent the Zambian government from defaulting on its Eurobond debt obligations. In a last effort to avoid default, Zambia initiated talks with the IMF in late 2020. Declining international commodity prices, sluggish economic recovery from the pandemic, and mounting "*fiscal and external imbalances resulting from years of economic mismanagement*" left President Lungu with few options other than approaching the IMF (IMF, 2022, 1). With an approaching election, however, Lungu and the IMF could not reach an agreement, and negotiations were postponed until after the election. In November 2020, Zambia became the first country to default as a result of financial pressures from COVID-19.

Prior to its sovereign default, Zambia borrowed extensively from an array of Chinese creditors, along with private investors (Mwamba et al., 2023; Brautigam, 2021). Reflecting on the situation, Brautigam (2021, 9) concludes that "*rampant rent-seeking, giving favors to politicians who throw aside prudent debt limits, and approve over-priced contracts obtained without competitive bidding*," formed the basis for skyrocketing public indebtedness.

In addition, the money borrowed helped President Lungu and his supporters accumulate wealth and consolidate paper. An IMF investigation after the default detected substantial capital outflows into offshore financial accounts, which could not be attributed to multinationals' profit offshore profit repatriations (IMF, 2022). A leading Zambian economist,

Chibamba Kanyama, estimated in 2017 that approximately "9000 Zambians held offshore accounts [...] the majority are serving in government."[3]

Without the ability to secure additional funds at the beginning of the COVID-19 crisis, President Lungu lost office in the 2021 presidential election (Braeutigam & Wang, 2021). The incoming Hichilema administration was caught off-guard when it realized that the actual Chinese debt burden was standing at $6.6 billion instead of the reported $3.4 billion in the Lungu administration's annual budget. The new Hichilema administration did not want to risk the same political fate as its predecessor and quickly agreed to a new IMF program only two months after the election.[4] To date, neither Chinese lenders can agree among themselves nor can they find common ground with other lenders on the debt restructuring terms, even under the auspices of the IMF. A key stumbling stone for the IMF and the major creditors is that Zambia has yet to disclose all debts owed to China (Setser, 2022).

The case of Zambia underscores that, for certain leaders, seeking assistance from the IMF can be perceived as a less risky course of action, particularly in the short term. While the IMF can provide leaders with immediate support, this advantage comes at the cost of constraining their fiscal flexibility over the long run. Lungu risked not agreeing to the IMF's terms before the election and subsequently lost when many observers assumed he would win.

4 Empirical analysis

In order to test our hypotheses, we created a dataset consisting of 539 leaders from 115 developing nations between 2000 and 2015. We used the leader-year as our unit of analysis. Our focus on developing countries is driven by several factors. Firstly, developed nations possess more fiscal resources to tackle debt crises, making it less necessary for them to rely on China for infrastructure financing or turn to the IMF during financial turmoil. As a result, high-income nations are not eligible for IMF structural adjustment loans. Furthermore, China's BRI projects are rarely found in developed nations. There is one notable exception: Italy signed a memorandum of understanding with China's BRI in 2019, but it did not result in any loans or investments (Ghiretti, 2021).

Secondly, developed countries have better credit access in international capital markets (Bunte, 2019; Brooks et al., 2022; Cormier, 2020a). Higher incomes, established credit histories, and representative institutions attract bond investors, allowing developed countries to increase debt without relying on international financial institutions or other countries. This lowers the likelihood that these richer countries need China loans or IMF intervention.

Lastly, even when global constraints on liquidity restrict sovereign borrowing, developed nations have other options to tackle debt crises. Notably, during the 2007–2009 financial crisis and the initial months of COVID-19, liquidity swap lines provided by the U.S. Federal Reserve aided in preserving global economic stability (Tooze, 2017; McDowell, 2019). These funds were predominantly directed towards developed countries, with only Singapore and Brazil, who were not OECD members, receiving them (Tooze, 2017). As a result, we constrain our sample to countries that are not members of the OECD.

[3] "Over 9,000 Zambians Have Offshore Accounts-Chibamba Kanyama." Lusaka Times, November 14, 2017.

[4] https://www.imf.org/en/News/Articles/2021/12/06/pr21359-zambia-imf-staff-reaches-staff-level-agreement-on-ecf.

4.1 Data and variables

Our primary dependent variable is dichotomous, indicating whether a leader left their position in a given year. We concentrate on politically motivated departures, omitting exits that occur due to sickness, death, or voluntary retirement. In line with standard survival analysis procedures, we incorporate leader tenures as long as they remain in office and, if they depart, until the year they leave. We extracted this information from the Archigos dataset (Goemans et al., 2009).[5] The dataset comprises 375 leader departures, including 137 instances of China's lending and 56 instances of both China and IMF lending.

Our main independent variable is China's loans. We evaluate the amount of debt owed to the Chinese government as a percentage of the borrower's GDP (Horn et al., 2020). Although there are variations in the estimates of Chinese loans due to their opacity, we believe Horn et al. (2020) study provides the most extensive description. This is because they rely on multiple sources of existing data, such as AidData (Tierney et al., 2011; Malik et al., 2021), and employ a 'consensus' approach to reconcile conflicting accounts of the same transactions in different data sources. We expect marginal declining effects across the range of China loans, so we take the natural log of the measure.

Our second independent variable is a binary measure capturing IMF program participation. We hand-coded IMF program participation based on information about the start date and end date of IMF agreements from the IMF Monitor Database (Kentikelenis et al., 2016). This coding allows us to match IMF programs to specific leaders.

Another important moderating variable is the level of corruption of a leader. On the one hand, corrupt leaders are better able to use state resources for personal gain, allowing these leaders to stay in power. On the other hand, IMF programs curtail the political misuse of China loans by corrupt leaders. Corrupt leaders indebted to Chinese creditors are most sensitive to IMF program participation. We control for a leader's corruption and test whether mixing China loans and an IMF program has heterogeneous effects across corrupt administrations. Corruption data are taken from V-Dem (Coppedge et al., 2016).

To address potential confounders, we include control variables that may explain why countries receive China loans, enter an IMF program, and why leaders survive in office. To identify these confounders, we rely on previous political economy research focused on leader survival (Licht, 2010; DiGiuseppe & Shea, 2015; Dreher et al., 2022). We also consult literature on the relationship between IMF program participation and leader survival (Smith & Vreeland, 2004; Williams, 2012; Dreher & Gassebner, 2012).

To control for economic conditions that explain states' creditworthiness and the economic competence of leaders, we begin with growth. Higher growth rates decrease demand for external finance, while leaders associated with higher growth are politically rewarded (Treisman, 2015). We also control for wealth, as measured by the log of GDP per capita, because Chinese lending and IMF programs are more concentrated among low-income countries (Bunte, 2019; Reinsberg et al., 2019; Gelpern et al., 2021). Constituents should favor leaders when wealth increases (Williams, 2012; DiGiuseppe & Shea, 2015; Casper, 2017). These economic data are from the World Development Indicators (WDI, 2020).

We next account for a state's debt obligations. Higher debt levels may be seen as a default risk by private investors, leading debt-burdened states to seek financing from the IMF or China. Debt problems can pose a threat to a leader's ability to survive (DiGiuseppe

[5] We relied on the latest version of Archigos (4.1), which covers data until 2015.

& Shea, 2015). Debt data are drawn from the IMF Global Debt database (Mbaye et al., 2018). To account for skewness and diminishing marginal effects, we again use the natural log.

We also control for natural resource rents. Leaders with natural resource wealth can better reward constituents (Morrison, 2009). In addition, these states are more attractive to private investors, decreasing the need to turn to the IMF or China. Since China's lending is predicated on natural resource extraction, it may provide more attractive lending terms to these states (Gelpern et al., 2021). Natural resource rent data is from the World Bank (WDI, 2020).

Finally, the political characteristics of the state are taken into account, including the regime type and civil conflict, which have varying impacts on survival in democracies versus autocracies (Williams, 2012; DiGiuseppe & Shea, 2015, 2016). To measure the degree to which a country is an electoral democracy, we rely on the V-Dem polyarchy index (Coppedge et al., 2016). Additionally, we include a measure of civil conflict from PRIO's Armed Conflict Dataset (Gleditsch et al., 2002), where an observation is coded as one if a state experiences an intrastate conflict with at least 25 battle deaths between a government and an organized rebel organization, and zero otherwise. Conflict may deter external financing and pose a threat to the survival of leaders.

4.2 Empirical strategy

Our main focus is on the time until a leader exits office, which we denote as t, making survival analysis the appropriate method for our study. Specifically, we employ Cox proportional hazard models to examine the factors that contribute to the hazard rate of leader failure, denoted as $h(t)$. In our analysis, "failure" refers to a leader's political removal from office. We include leaders in our sample as long as they are at risk of being ousted from office. However, we exclude leaders from the sample if they depart from their position due to any cause other than political removal, such as death by natural causes. Unlike other survival models, the Cox model does not make any assumptions about the shape of the baseline hazard rate of leadership failure (h_{0t}) while assuming proportional hazards (Box-Steffensmeier et al., 2004).

The model for our first hypothesis can be written such that:

$$h(t) = h_{0t} \exp(\beta_1 \text{China Loans} + \beta_2 \text{IMF program} + \beta_3 \text{China Loans*IMF program} + \beta_X \text{X}) \quad (1)$$

whereby $h(t)$ is the hazard of a leader leaving office as a function of some baseline hazard rate (h_{0t}), China loans, IMF program participation, and a set of control variables (X) designed to block confounding pathways.

One of the advantages of using the Cox survival model is that we do not need to make any additional assumptions about the baseline rate, unlike other survival estimators (i.e., Weibull) (e.g., Box-Steffensmeier et al., 2004). In our robustness checks, we conducted diagnostic tests to ensure that the proportional hazard assumption was valid. We found that regime type was the only variable that violated this assumption, but various solutions to address this violation did not affect our conclusions (see Section A6). It is important to note that the Cox estimators, like other parametric estimators, can be sensitive to confounders. If there are observable or unobservable factors that affect China's lending, IMF program participation, and leader survival, the estimator could be biased. Leaders are motivated to survive politically and are strategic, so any loan or program agreement will be evaluated in terms of how it benefits the leader.

In addition, more experienced leaders may know how to navigate the credit markets better than novice leaders (Shea & Solis, 2018). To address this endogeneity problem, we use an instrumental-variable model. However, there are two issues with this approach.

The first issue with using an instrumental-variable model is that Cox survival models are not suitable for instrumental-variable analysis. Instead, we can treat our data as panel data with discrete durations, where the dependent variable is a binary outcome indicating whether a leader left office in a given year or not rather than the duration until the leader's departure. We can then analyze this data using standard regression techniques or instrumental-variable estimation. To account for any temporal dependencies in the data, we include time trends by incorporating linear, squared, and cubic trends of time since a leader left office in a given country. In our study, we estimate a probit model:

$$\begin{aligned}\Pr(\text{Fail} = 1) = \Phi(&\beta_0 + \beta_1(\text{China Loans}) + \beta_2(\text{IMF program}) \\ &+ \beta_3(\text{China Loans*IMF program}) \\ &+ \beta_X(X) + \beta_t(\text{Splines}) + \upsilon)\end{aligned}$$

To ensure that our data can be transformed into discrete-duration panel data, we estimate a probit model and compare them to the Cox estimations.[6] We find similar results. With this estimator, we can utilize standard IV approaches.

A key concern is that our baseline estimations might be spurious. For instance, it might be the case that a third unobservable variable drives selection into IMF programs and China loans. Thus, when performing a standard estimation strategy, our results would be biased, threatening the statistical viability of our results. To mitigate such concerns, we opt for an instrumental variables approach. For this strategy to be effective, the two assumptions of a valid instrumental variable have to be met. First, the variable has to display a strong association with the endogenous regressor. Second, the instrument must be uncorrelated with the outcome model error term. The first assumption can be tested directly, while the second cannot.

To instrument for IMF program participation, we use a shift-share, or Bartik, estimation strategy (Nunn & Qian, 2014; Goldsmith-Pinkham et al., 2020; Stubbs et al., 2020; Lang, 2021). This design has two parts. First, we identify a "shift" variable that explains the supply of IMF programs but is plausibly exogenous to leader survival: the IMF's (logged) liquidity ratio. The IMF's liquidity ratio proxies the IMF's general financial liquidity, where we expect that higher liquid reserves should increase the likelihood that the IMF provides a loan to a given country. Leaders in borrowing countries should have no impact on IMF liquidity, as it is adjusted in an ad-hoc manner. However, the IMF's liquidity may be associated with other global factors that change over time—such as global economic growth or financial market volatility—and that may subsequently affect a potential borrower's economic conditions. If that were the case, the IMF liquidity ratio would not meet the exclusion restriction assumption. One solution to confounding temporal variables would be to use time-fixed effects. Since IMF liquidity does not vary across countries in a given year, however, this is not an option for our design.

Thus, the second part of the estimation strategy is to interact the "shift" variable with the "share" component, which is the leader's propensity to receive an IMF loan. To capture a leader's propensity to receive an IMF loan, we use the percentage of previous leader-years that involved an IMF program in a given country. The interaction between the IMF's liquidity ratio and a leader's likelihood of receiving an IMF loan provides two design advantages.

[6] See Beck et al. (1998); Box-Steffensmeier and Jones (2004), and Carter and Signorino (2010) for a discussion on the relationship between binary time-series cross-sectional data and duration data.

First, the interaction models the heterogeneous effects of the IMF's liquidity on lending. For example, some countries that are either geopolitically or economically important to the U.S. are probably less affected by changes in the IMF's liquidity than a country that may provide marginal benefits. We expect that more liquidity will prompt the IMF to increase its lending portfolio, conditional on the baseline level, to borrow from the IMF in the first place.

Second, the interaction creates variation within countries over time, allowing us to include both country and year-fixed effects in the models, resulting in the following first-stage model:

$$\begin{aligned}\text{IMF Program} = {} & \gamma_0 + \gamma_1(\text{LQR}) + \gamma_2(\text{Pr(IMF)}) \\ & + \gamma_3(\text{LQR*Pr(IMF)}) + \gamma_X(X) + \alpha_i + \nu_t + \varepsilon_{i,t}\end{aligned}$$

where α_i represents country-specific intercepts and ν_t represents year effects. The resulting estimator for the interaction term (γ_3) is akin to a difference-in-difference design with a continuous estimator. We assume that the IMF's liquidity ratio only affects a leader's political survival through IMF programs, conditional on a country's likelihood of receiving an IMF loan and other model components.

The IMF's liquidity ratio may have a connection to other factors that could impact a country's economic conditions, but this possibility is unlikely based on our model for several reasons. Firstly, the year-fixed effects account for any general changes in economic conditions that could be related to IMF liquidity and leadership transitions. Secondly, the instrumental variable model's first stage controls for economic and political conditions typically associated with leadership survival and global economic effects. Therefore, for the IMF's liquidity to affect political survival through a different path, there would need to be heterogeneous effects across countries that are also correlated with the likelihood of a country receiving an IMF loan, which is not apparent. As a result, we believe that the interaction plausibly satisfies the exclusion restriction. While this assumption cannot be verified, we perform a series of falsification tests in the appendix to defend our assumptions empirically and theoretically. For instance, we show that the values of the interaction terms are not linked to the control variables, which are the most obvious potential confounders. If the instrumental variable is not linked to these variables, it is less probable that it has a strong association with another observable or unobservable factor that could undermine our primary conclusions. Further details can be found in the appendix.

4.3 Main results

Leaders seek out China loans because these loans offer both economic and political benefits. One of these political benefits is expected to manifest itself in longer tenures for leaders. To test this expectation, we model leader survival as a function of China loans in model 1. We find that more China loans decrease the risk of ouster for political leaders, consistent with Kern et al. (2022).[7]

What happens when leaders indebted to China turn to the IMF? We expect that the IMF will make it more difficult for leaders to misuse China debt for political purposes. To test this expectation, model 1 in Table 1 examines the interaction between these two

[7] Model 1 shows a negative effect for IMF programs as well, though it is not statistically significant. The appendix explores the conditions under which IMF programs help and hurt leaders, independent of China loans.

major creditors. We find that IMF programs reduce leaders' survival hazards by 39 percent in the absence of China loans. A one-logged unit change in China's debt decreases the hazard by 47 percent when a country is not under an IMF program. When a country has both China loans and an IMF program, a leader's hazard of failure increases. To ease the interpretation of this conditional effect, we plot the interaction in Fig. 1. IMF programs increase leaders' likelihood of being removed from office as China debt increases. The combination of these two types of lending mechanisms is risky for leaders.

As previously mentioned, IMF programs can also be influenced by factors that help leaders maintain their power. For example, leaders in countries with higher growth are less likely to need to turn to the IMF and more likely to stay in power. While we have controlled for observable confounding factors in our models, it is possible that there are other factors that could affect the relationship of interest. In other words, there are concerns that leaders may strategically enter, exit, or avoid IMF programs for political purposes.

To address this issue, we utilize the interaction between a country's likelihood of receiving an IMF loan and IMF liquidity, using the shift-share instrumental strategy described above. To estimate the instrumental variable model, we adopt a conditional-mixed process framework, where we use an OLS regression in the first stage(s) and a probit model for the outcome stage. To establish comparability between the Cox survival models and the instrumental variable models, we replicate the Cox model results from model 2 using a discrete duration probability model in model 3. This particular duration model estimates the likelihood of a leader leaving office within a given year and includes a time trend since the last leader's exit (including its squared and cubic forms). Our findings in model 3 are substantially similar to those observed in model 2, which aligns with established econometric theory (Beck et al., 1998; Box-Steffensmeier & Jones, 2004).

Models 4 and 5 present the outcome stages of the IV models. Model 4 shows that China loans continue to be associated with longer tenures when we instrument for IMF programs. Model 5 again examines the conditional effects of China loans and finds that China loans increase the hazard of a leader being ousted in the presence of the instrumented IMF program. In additional analyses in the appendix, we examine the robustness of these IV models. While we cannot test the exclusion restriction empirically, we can use falsification tests to rule out some potential threats to our assumption. Falsification tests cannot prove that our assumptions hold but can test conditions under which we expect them not to hold. For example, we examine whether the control variables in our main models are associated with the interaction instrument. A lack of empirical association in these tests does not prove our assumptions. However, any empirical association would call those assumptions into doubt (see the appendix for more details). We find no evidence for the viability of these empirical associations.

In addition, diagnostic tests show that the relationship between the instrument and IMF programming is strong. For example, various weak instrument tests show a high correlation between the instrument and endogenous regressor: the Montiel-Pflueger test effective F-stat is 8.717; the Cragg-Donald Wald F-statistic is 8.32; and the Stock-Wright LM weak identification S-statistic critical value is 252.74.

As an alternative to the IV model, we examine the effects of China loans on leader survival, conditional on the selection process of entering an IMF program or not. We follow Licht 's estimation approach, who used a censored probit model to model foreign aid and leader survival. We first estimate the probability of leader failure using the probit discrete duration model from model 3 in Table 1. To account for estimation uncertainty, we adjust these probabilities of failure using Maddala 's standard error prescription. We then

Table 1 China loans, IMF Programs, and leader survival

	Cox models		Probit	IV models		Selection models	
			Model			IMF	No IMF
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
log China Debt	−0.224*	−0.473*	−0.270*	−0.115*	−0.322*	−0.009	−0.297*
	(0.093)	(0.129)	(0.061)	(0.051)	(0.098)	(0.072)	(0.082)
IMF Program	−0.218	−0.397*	−0.205*	0.247	0.063		
	(0.133)	(0.134)	(0.076)	(0.140)	(0.160)		
China Loans × IMF		0.476*	0.279*		0.428*		
		(0.164)	(0.082)		(0.170)		
Democracy	1.487*	1.548*	0.705*	0.607*	0.635*	0.632	0.521
	(0.501)	(0.515)	(0.279)	(0.247)	(0.247)	(0.429)	(0.330)
Executive Corruption	0.436	0.497	0.129	0.068	0.095	0.092	0.027
	(0.451)	(0.463)	(0.243)	(0.184)	(0.186)	(0.293)	(0.245)
Growth	−3.157*	−3.122*	−1.844*	−1.857*	−1.897*	−2.695*	−1.284*
	(0.729)	(0.721)	(0.491)	(0.468)	(0.469)	(0.779)	(0.591)
Log GDP per cap	−0.115	−0.121	−0.046	0.021	0.011	−0.002	−0.110
	(0.079)	(0.078)	(0.042)	(0.046)	(0.047)	(0.085)	(0.069)
Resource Rents	−0.008	−0.009	−0.004	−0.004	−0.005	0.000	−0.005
	(0.009)	(0.009)	(0.005)	(0.003)	(0.003)	(0.005)	(0.005)
Civil Conflict	0.072	0.053	0.027	0.073	0.058	−0.120	0.052
	(0.186)	(0.188)	(0.104)	(0.097)	(0.097)	(0.155)	(0.127)
log Debt/GDP	0.066	0.071	0.060	0.046	0.047	−0.043	0.081
	(0.088)	(0.087)	(0.050)	(0.053)	(0.052)	(0.089)	(0.068)
Time since last fail			−0.019	−0.024	−0.018	−0.016	−0.002
			(0.030)	(0.022)	(0.022)	(0.035)	(0.031)
	First Stage I: IMF Program						
Pr(IMF)*IMF liquidity				−0.134*	−0.136*	0.470*	−0.469
				(0.051)	(0.051)	(0.029)	(0.029)
Pr(Fail)						−0.023	0.022
						(0.016)	(0.016)
	First Stage II: IMF Program × China Loans						
IV * China Loan					0.164*		
					(0.008)		
Pr(IMF)*IMF liquidity					−0.044		
					(0.055)		
LL	−1456.12	−1452.78	−804.63	−1564.70	−2022.90	−1360.84	−1463.61
N	2085	2085	2087	2087	2087	2087	2087

∗ $p < 0.05$; Standard errors clustered on countries reported in parentheses. Models 3 and 4 include country and year-fixed effects in the first stage. Models 5 and 6 separate the analysis into IMF and non-IMF, conditional on selection

use these adjusted probabilities, along with our shift-share instrument to estimate the censored probit. In the selection stage, we include adjusted probabilities of leader failure, our shift-share instrument, and the set of control variables used in previous models to estimate

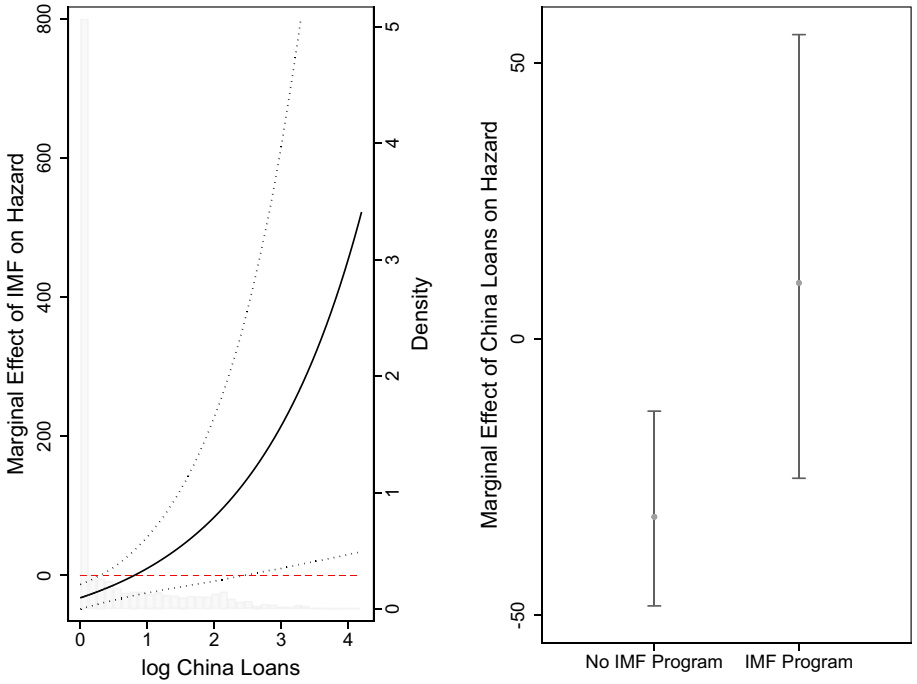


Fig. 1 Marginal effects of IMF programs and china loans on leader survival. Note: Percent change in the hazard of leader failure resulting from a change in IMF program (left panel) or a one-logged unit change in China lending (right panel) conditional on the other regressor. In the left panel, the dotted lines represent the 95% confidence intervals around the simulated estimates (solid line), resulting from 10,000 draws of betas and the variance-covariance matrix. In the right panel, the capped lines represent 95% confidence intervals around the simulated estimates

whether a leader enters an IMF program or not. Interestingly, we find that higher probabilities of leader failure do not necessarily result in a lower likelihood of IMF programs. Models 6 and 7 in Table 1 report the results on the sample within IMF programs (model 6) and those without IMF programs (model 7). The results show that China loans have no political benefits for leaders within the IMF sample, even when we account for the selection process as a function of leader failure probabilities. Model 6 shows that when leaders can avoid the IMF, they are less likely to lose office. Our findings are consistent with the rest of the analysis, indicating that China loans increase leader survival even after considering the endogenous relationship between leader survival and the IMF.

Our argument about the heightened risk of ouster for corrupt leaders under an IMF program has an additional observable implication. When corrupt leaders leave office, they should not only lose power but also face the consequences of their behavior. Many leaders will accept exile in these cases, avoiding prison. The Archigos leader dataset encodes the fate of leaders after they leave office, which allows us to test our post-tenure expectations for corrupt leaders. We find that corrupt leaders who have China loans and request an IMF program go into exile at 17 percent, while no non-corrupt leader has gone into exile under the same conditions. We verify that these differences in leader exiles are different at statistically meaningful levels (Table A5).

Taken together, our results so far indicate that where leaders who are exposed to China debt need to undergo an IMF program will be more likely to lose office. Consistent with these patterns is the theoretical argument that IMF programs make it difficult for leaders to continue (mis)using China loans for political ends.

4.4 Scope conditions: corruption and regime type

Not all leaders will face the same risks from China debt when they implement new IMF programs. If leaders are using China debt for legitimate purposes, then these leaders have little to lose by turning to the IMF aside from the normal fiscal restrictions. If a leader, however, has misappropriated China loans or taken on an unsustainable debt burden to favor curry with key constituents, turning to the IMF poses a risk. While the IMF can provide short-term stability and political cover, it can also prevent leaders from continuing their corrupt practices, or the IMF may shine a light on previous corruption, putting a leader at risk of ouster.

To illustrate these potential heterogeneous effects, we condition our main interaction (China Loan × IMF) by executive corruption in model 1 in Table 2. Given the triple interaction in a non-linear model, interpreting the coefficients in the model is difficult. Therefore, we split the sample above and below the mean value of executive corruption in models 2 and 3. Model 2 in Table 2 shows that more corrupt leaders increase their risk of ouster when borrowing from China and participating in IMF programs. IMF programs—with their transparency requirements—threaten to upend corrupt leaders' ability to funnel monies to elites. Therefore, the leaders most at risk from going to the IMF are those misusing China loans for political purposes. Model 3 shows no such conditional effect for non-corrupt leaders. Leaders who are not misappropriating Chinese loans should face no additional risk from IMF's transparency requirements. The less corrupt leaders have less to hide and less to lose. We graph those conditional effects in Fig. 2.

The results above demonstrate that corruption is a key reason why China loans and IMF programming have disastrous political effects on some leaders. The most corrupt leaders have the most to gain from misusing China loans and then the most to lose by turning to the IMF.

To mitigate concerns that our results are not an artifact of another political process, we examine the role of regime type. Scholars have examined how external financial sources affect leader survival, conditional on regime type (Yuichi Kono & Montinola, 2009; Licht, 2010; DiGiuseppe & Shea, 2015). The benefits of different types of finance vary for democracies and non-democracies depending on their institutional incentives. However, it is important to note that the effects of China's loans do not necessarily conform to this pattern. The unique characteristics of these loans result in varying benefits for corrupt and non-corrupt regimes, and corruption cannot be equated with regime type. Surprisingly, research on political corruption has shown a weak association between democracy and corruption, highlighting a significant theoretical puzzle (Golden & Mahdavi, 2015). Therefore, while the impact of China's loans may differ based on the level of corruption, it is unlikely to result in the same diverse effects across different regime types.

To illustrate this, we condition our main interaction (China Loan × IMF) by democracy. For interpretation purposes, we rely on Boix et al.'s (2013) binary measure of democracy, though the results are similar to the continuous polyarchy measure. Model 4 in Table 2 examines the triple interaction. Again, to ease interpretation, we split the sample into non-democracies and democracies in models 5 and 6, respectively. The interaction between

Table 2 Survival models: heterogenous effects of China loans and leader survival

	Full Sample	More Corrupt	Less Corrupt	Full Sample	Non-Dem	Dem
	(1)	(2)	(3)	(4)	(5)	(6)
log China Debt	0.149	−0.758*	0.149	−0.551*	−0.514*	−0.307
	(0.290)	(0.169)	(0.248)	(0.207)	(0.183)	(0.217)
Leader has IMF Program	0.114	−0.585*	0.114	−0.183	−0.284	−0.316
	(0.278)	(0.164)	(0.209)	(0.236)	(0.216)	(0.195)
Leader has IMF Program × log China Debt	−0.073	0.824*	−0.090	0.486+	0.522*	0.483*
	(0.348)	(0.208)	(0.255)	(0.291)	(0.253)	(0.219)
Leader has IMF Program × Corruption	−0.902*					
	(0.451)					
log China Debt × Corruption	−1.073*					
	(0.439)					
Leader has IMF Program × log China Debt × Corruption	0.992+					
	(0.541)					
Democracy				0.577*		
				(0.242)		
Leader has IMF Program × Democracy				−0.313		
				(0.292)		
log China Debt × Democracy				0.184		
				(0.282)		
Leader has IMF Program × log China Debt × Democracy				−0.080		
				(0.364)		
LL	−1449.84	−757.17	−482.31	−1453.73	−387.65	−870.52
N	2085	1276	809	2084	1051	1033

$+p < 0.1$ $* p < 0.05$; Standard errors clustered on countries reported in parentheses. Cox survival models; coefficients are reported. Controls included but not reported

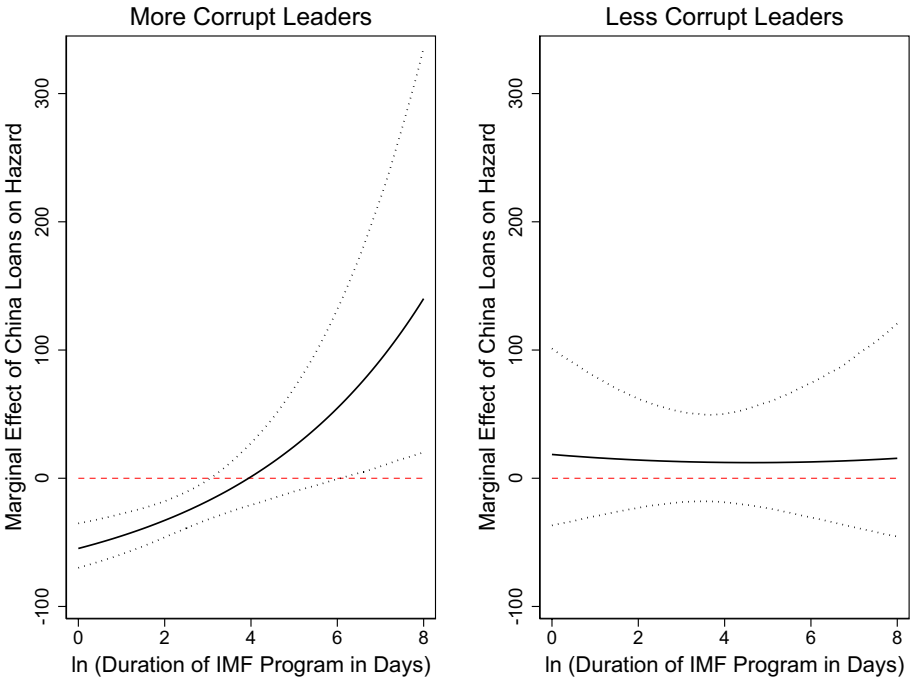


Fig. 2 Marginal effects of China loans on leader survival. Note: Percent change in the hazard of leader failure resulting from a one-logged unit change in China lending conditional on the time under an IMF program. The dotted lines represent the 95% confidence intervals around the simulated estimates (solid line), resulting from 10,000 draws of betas and the variance-covariance matrix. The left panel is above the mean average of corrupt leaders, and the right panel is below the mean average

China lending and IMF programming is relatively similar and statistically significant across both samples. These results demonstrate that our findings hold across regimes and that regime type is not proxying for corruption.

4.5 China lending, economic crises, and leader survival

If going to the IMF is such a risk for leaders indebted to China, why do it? To answer this question, we consider two calculations for leaders: (1) short versus long-term consequences and (2) the consequences of economic crises. On the first point, turning to the IMF can provide some short-term relief to a leader. We expect that if a leader can use the IMF to stabilize their country's finances and quickly exit the program, then the leader can politically benefit. The IMF may also initially provide political cover during a crisis or provide a corrupt leader more time to misappropriate funds before transparency standards are enforced. Therefore, we expect that IMF programs may provide short-term benefits to leaders, while the IMF program's continued duration increases the risk of removal. To test this expectation, we interact China loans with the log of the duration of an IMF program in months. We observe that the interaction of China loans and the duration of an IMF program is positive in model 1 in Table 3. The longer a country is under an IMF program, the fewer benefits a leader gains from China loans. We graph this interaction in Fig. 2 to not illustrate the heterogenous effects of China loans but to highlight those differences between

corrupt and less-corrupt regimes. As expected, we observe an interaction between China loans and IMF duration in above-average corrupt regimes and no interaction in less-corrupt regimes. Importantly, we verify that IMF programs can extend leader survival when these start an IMF program (Table A2). This result is important to mitigate concerns that IMF programs trigger political instability, driving observed outcomes.

A second point to consider is if an economic crisis occurs and a leader does not turn to the IMF. For some leaders, doing nothing may be riskier. The example of President Lungu in Zambia illustrates how political support can quickly erode for a leader in the face of debt distress. Lungu risked not agreeing to the IMF's terms before the election and subsequently lost when many observers assumed he would win. To examine this possibility, we analyze the role of underlying financial risk for leader survival. This approach allows us to address concerns that IMF programs are simply a proxy for financial crises. So, it is not that IMF programs are reversing the political benefits of China lending to leaders. Instead, financial crises are forcing leaders out of office. In additional analyses, we rule out the possibility that it is underlying economic conditions—and not the IMF— that are driving our results. Following Shea and Poast (2018), we derive a measure of crisis risk by calculating the predicted probability of experiencing a crisis using a logit model. Crisis data are drawn from Reinhart & Rogoff (2008, updated to 2016). The dependent variable is coded as 1 if a country is experiencing a debt, bank, currency, or systematic crisis in a given year. The covariates include variables that are commonly thought to predict crisis levels: growth, democracy, development levels (GDP per capita), debt-to-GDP levels, natural resource rents, internal conflict, and a time trend from the previous crisis (with squared and cubic components). This model produces probability predictions for each country-year for a crisis, ranging from near zero to 74 percent. A Receiver Operating Characteristic (ROC) produces an area-under-the-curve (AUC) of 0.90, suggesting a highly predictive model (see appendix for the full results).

With the predicted probability, Pr(Crisis), we can condition the effects of China loans by the underlying latent effects of financial crises in model 2 in Table 3. We observe no heterogeneous effects of China loans across crisis probability. This does not mean that crises do not matter to leaders. We argue that this null effect is a byproduct of leaders' decisions to turn to the IMF when in need. To test this expectation, we expand the interaction to include IMF programs in model 3.[8] Again, the triple interaction is difficult to interpret from the table, so we split the sample into non-IMF years and IMF years in models 4 and 5. We observe that China loans *increase* the likelihood of a leader losing power as the risk of crisis increases when a country is not in an IMF program. Once a country enters an IMF program, the risk to leaders is mitigated. We also plot the differential effects in Fig. 3.

In sum, the combination of China loans and IMF programs is risky for leaders. However, if a crisis is likely, it is even riskier for leaders to do nothing. The IMF provides some short-term benefits to leaders, so leaders may turn to the IMF to get out from underneath its restrictions before the political consequences set in. In addition, as the likelihood of a financial crisis increases for a country, the IMF may mitigate some—but not all—of the political risk for leaders.

[8] Given that we are focused on the risk of crises, we focus on leaders where crises are not realized in a given year.

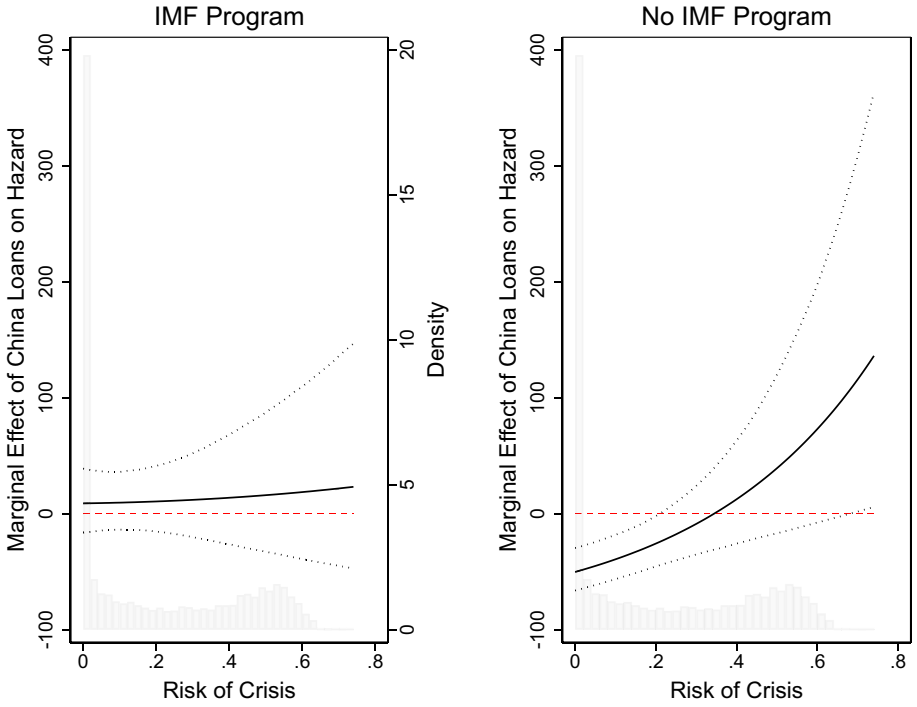


Fig. 3 Marginal effects of IMF programs and China loans on leader survival. Note: Percent change in the hazard of leader failure resulting from a one-logged unit change in China lending conditional on the Pr(Crisis), with and without IMF Programs. In the left panel, the dotted lines represent the 95% confidence intervals around the simulated estimates (solid line), resulting from 10,000 draws of betas and the variance-covariance matrix. In the right panel, the capped lines represent 95% confidence intervals around the simulated estimates

4.6 China lending and non-IMF creditors

Many countries borrow from multiple sources, both official and private, which increases the complexity of creditor coordination in case of a crisis. Our analysis focuses on the key interaction between two of the most important creditors: China and the IMF. Our argument focuses on how IMF programs reduce the political benefits of China loans through increased transparency requirements. To rule out the possibility of another explanation for the *ChinaLoan* × *IMF* conditional effect, we examine how China loans interact with other official creditors. If we observe the same conditional relationship between China loans and other official creditors, it would decrease our confidence that IMF conditionality requirements are able to constrain leaders from misusing China loans.

We begin with the World Bank, the other major financial international organization that provides substantial aid to developing countries. The World Bank emphasizes the importance of transparency and non-corrupt practices but focuses its initiatives on project-level

Table 3 Cox models: China loans, crises, and IMF programs

				No IMF Program	IMF Program
	(1)	(2)	(3)	(4)	(5)
log China Debt	−0.455*	−0.240*	−0.691*	−0.756*	0.075
	(0.127)	(0.106)	(0.173)	(0.201)	(0.130)
IMF	−1.497*		−0.583*		
	(0.510)		(0.212)		
Duration of IMF pgrm	0.177*				
	(0.083)				
Pr(Crisis)		−0.539	−1.291	−1.577*	−0.372
		(0.435)	(0.765)	(0.756)	(0.454)
log China Debt × Duration of IMF pgrm	0.067*				
	(0.024)				
log China Debt × Pr(Crisis)		0.834	1.991*	2.339*	0.109
		(0.445)	(0.626)	(0.739)	(0.575)
log China Debt × IMF			0.748*		
			(0.217)		
Pr(Crisis) × IMF			1.361		
			(0.862)		
log China Debt × Pr(Crisis) × IMF			−1.780*		
			(0.715)		
LL	−1450.62	−993.37	−988.40	−448.76	−381.20
N	2085	1454	1454	769	685
Controls	✓	✓	✓	✓	✓
IMF Program				No	Yes

$* p < 0.05$; Standard errors clustered on countries reported in parentheses. Cox survival models; coefficients are reported. Controls included but not reported. Models 2–5 examine non-crisis years

disbursements.[9] As a result, we do not expect World Bank initiatives to impact financial dynamics outside of their projects, and thus World Bank aid should have limited impact on how China loans affect leaders' tenure. The IMF, on the other hand, targets its transparency and anti-corruption efforts at the government level. Thus, we expect IMF initiatives to impact countries' fiscal policy as a whole, including how a leader can use China loans. To demonstrate this, we interact China loans with World Bank projects, taking data from Clark (2022). Model 1 in Table 4 examines whether the benefits of China loans vary on whether a country has a World Bank project or not. We see no heterogeneous effects, evidenced by the lack of significance of the interaction term. We also look at the number of World Bank projects. It may be the case that the World Bank can exert more influence with more projects in a country. Model 2 interacts China loans with the count of World Bank projects. Again, we observe no differential effects for China loans.

[9] For example, see https://www.worldbank.org/en/topic/governance/publication/enhancing-government-effectiveness-and-transparency-the-fight-against-corruption.

Table 4 Survival models: China loans, non-IMF creditors, and leader survival

	(1)	(2)	(3)	(4)	(5)	(6)
log China Debt	−0.315*	−0.369*	−0.211*	−0.331*	−0.212*	−0.259*
	(0.112)	(0.119)	(0.097)	(0.123)	(0.107)	(0.127)
World Bank Project	−0.186					
	(0.194)					
log China Debt × World Bank Project	−0.101					
	(0.196)					
WB Project Count		−0.009				
		(0.007)				
log China Debt × WB Project Count		0.004				
		(0.009)				
U.S. aid			0.144*			
			(0.052)			
log China Debt × U.S. aid			−0.092			
			(0.253)			
EU aid				1.692*		
				(0.703)		
log China Debt × EU aid				0.926		
				(0.727)		
UK aid					0.189	
					(0.810)	
log China Debt × UK aid					0.199	
					(0.887)	
Total aid (% of GDP)						0.001
						(0.016)
log China Debt × Total aid (% of GDP)						0.008
						(0.019)
LL	−890.78	−890.94	−1324.00	−1329.88	−1219.74	−1260.17
N	1424	1424	1882	1870	1740	1835

$* p < 0.05$; Standard errors clustered on countries reported in parentheses. Cox survival models; coefficients are reported. Controls included but not reported

We also explore the interactions with other official lenders. Rich countries, like the United States, often declare non-corruption as a condition of aid. These same countries are concerned that the China loans are buying undue influence in partner countries.[10] For these reasons, aid from developed countries may be designed to limit the political usefulness of China loans. However, if we look beyond the rhetoric, it is not clear how these rich donors can prevent recipients from misusing China loans. While low corruption may be a pre-condition to receiving loans, donor countries do not perform the same level of budgetary forensics that the IMF is willing to undertake to expose budgetary malpractice. In addition, the existing empirical research on bilateral aid and corruption is mixed (Alesina & Weder, 2002). At best, the

[10] "Worldwide Threats"—Hearing before the Committee on Armed Services United States Senate 115th Congress Second Session, March 6, 2018.

effect of rich donors on corruption may be donor-specific (Mohamed et al., 2015; Okada & Samreth, 2012). Given these competing expectations, we treat this as an open empirical question: Can other donors mitigate the political benefits of China's loans?

To examine this question, we first interact China loans with U.S. bilateral aid allotment in model 3 in Table 4. We also interact China loans with EU and UK aid disbursements in models 4 and 5, respectively (official bilateral aid data drawn from WDI (2020)). Model 6 looks at total aid received as a percentage of GDP as a potential moderator. These models show no heterogeneous effects. In sum, the analysis in Table 4 underscores the uniqueness of the interactions between China finance and IMF programs. The positive effects of China loans on leader survival are not mitigated by other official lenders, apart from the specific interaction involving IMF programs. Only the transparency and anti-corruption conditions imposed by the IMF can curtail the misuse of China loans. These results do not mean that the combination of China loans and alongside other bilateral loans do not matter, only that they do not appear to affect leader tenure. Future research should examine how the mixture of different credit sources affects other political outcomes of importance.

5 Conclusion

Our study focuses on the influence of China loans on the political longevity of leaders who need the International Monetary Fund (IMF) for assistance. The findings are increasingly relevant as many developing countries indebted to Chinese creditors have been increasingly challenged to meet their debt obligations in the face of unprecedented shocks, such as the COVID-19 pandemic, higher energy costs, inflation, and tighter global monetary policy. Based on existing studies showing how developing-country leaders have benefited from China loans (Braeutigam, 2011; Kaplan, 2021; Jenkins, 2022; Dreher et al., 2022), we argued that leaders' participation in IMF programs could undermine leaders' political survival.

We note that IMF loans provide short-term financing and calm international investors, relieving leaders from political pressures. However, IMF programs also entail conditions that threaten to upset corrupt practices in Chinese loan dealings. Therefore, we expected leaders exposed to Chinese debt to increase their chances of survival in the short term but face a greater risk of ouster when turning to the IMF. We confirm these expectations using survival analysis on a dataset of 539 leaders from 115 developing countries between 2000 and 2015. Importantly, we can mitigate concerns that our results are a function of political instability arising from IMF-induced austerity measures. We interpret these results as evidence of the pernicious effects of mixing credit from heterogeneous creditors.

These findings provide important avenues for future academic debates. First, we confirm key findings that emphasize the importance of external finance for bolstering leader survival (Yuichi Kono & Montinola, 2009; DiGiuseppe & Shea, 2016; Bader & Faust, 2014). Second, this literature treats different sources of sovereign finance in isolation. Extending this literature, we can verify the existence of a 'reversal of the fortunes' effect. This effect emerges because incentive structures in both sources of credit are incompatible. Whereas leaders can benefit from accumulating China debt in 'good' times, it comes with greater risks of being ousted from office when 'bad' times force them to tap the IMF for bailout funding.

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