

GLOBAL CHINA INITIATIVE

Bailouts From Beijing

How China Functions as an Alternative to the IMF

**JAMES SUNDQUIST****ABSTRACT**

Does Chinese finance in the form of loans and currency swaps substitute for assistance from the International Monetary Fund (IMF), reducing that institution's influence and opening more "policy space" for developing countries? Although popular, this hypothesis has never been rigorously tested and exaggerates China's willingness to risk its own capital. Using a novel identification strategy based on changes to China's total lending budget, I provide evidence that Chinese lending has enabled some countries to avoid turning to the IMF, but only those that are able to compensate China in means other than cash. In practice, this takes two forms: repayment-in-kind with natural resource exports and geopolitical concessions. Although the limited number of instances frustrates the precise estimation of effects, case studies suggest that countries in position to meet these desires are able to substitute Chinese finance for IMF assistance. The paper clarifies the scope of China's challenge to the existing emergency lending regime and influence over indebted countries.

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Introduction

Since China began lending large quantities of money to the developing world in the mid-2000s, suspicions have swirled that these loans compete with the International Monetary Fund (IMF), offering comparable amounts of money in exchange for very different promises. Whereas the IMF conditions its loans on commitments to economic reform, China typically lends for specific infrastructure projects, built by Chinese companies. Those who believe that the IMF's prescriptions for economic reform represent the surest route to stability and prosperity express alarm that China might doom these countries to another cycle of debt and default (Horn, Reinhart, and Trebesch 2019), while critics of the IMF might cheer China's lending as a source of "policy space" for governments to choose their own development strategy (Kentikelenis, Stubbs, and King 2016). Whatever their normative interpretation, most observers agree on the basic logic at play: Chinese loans present a new option for countries that would rather not go to the IMF.

In addition to affecting the fate of developing economies, these loans have the potential to transform China's relationship with the IMF. Political influence at the Fund is hotly contested because it offers opportunities to shape emergency lending decisions, influential macroeconomic standards, and the Fund's monitoring of its own members. As political scientists have extensively documented, both voting shares and informal influence have historically been concentrated among the United States and its allies. China has had limited success in pushing for a greater voice within the institution, but its role as lender and potential rescuer may, in specific cases, greatly enhance its bargaining power.

Yet despite these important stakes, there has been no rigorous test of the hypothesis that Chinese lending has any effect on borrowers' participation in an IMF program. Most research has rightly focused on the World Bank (Hernandez 2017, Zeitz 2019)—after all, the main vehicles for China's loans are the China Development Bank and the China Export-Import Bank, which focus on infrastructure projects typical of the World Bank, rather than lender-of-last-resort activities. Nevertheless, journalistic accounts of governments facing balance of payments problems continue to emphasize the importance of Chinese loans.¹ Currency swap arrangements have also attracted attention as an alternative channel by which China may act as a lender of last resort (McDowell 2019).

I make two points that clarify the scope of Chinese competition with the IMF. First, I emphasize that the simple depiction of China as always willing to provide a bailout exaggerates China's willingness to lend.² Financially, undercutting the IMF in negotiations with governments that are unable to raise money on private capital markets is a losing proposition. Ideologically, China opposes the IMF's practice of prescribing reforms to its clients, but providing all troubled countries with a financial exit option would require colossal sums of money. The upshot is that in the absence of other factors, Chinese bailouts are likely to be rare.

Second, I argue that China *will* offer bailouts that compete with the IMF when the borrowing country can provide some alternative form of compensation. The IMF is limited by its inability to accept repayment in any form other than hard currency, whereas the Chinese

¹ Marwaan Macan-Markar, "Sri Lanka seeks regional bailout as balance of payments crisis looms," *Nikkei Asian Review*, January 21, 2019.

² By "bailout," I mean a loan to a financially troubled government that enables it to avoid borrowing from the IMF.



government has broader interests. Practically speaking, this can take the form of repayment in-kind with natural resource exports, or geopolitical favors. Thus, some states, but not all, are endowed with the ability to attract a Chinese bailout.

I support this argument with multiple types of evidence. The core analysis makes use of the fact that swings in Chinese lending are driven by factors internal to China to derive an estimate of the effect of these loans on the probability that a country begins a new IMF program. I find that a one percent of GDP loan from China decreases the absolute probability of a borrower turning to the IMF by six percentage points, which is both statistically and substantively significant. Drawing on macroeconomic indicators of borrowers, I also show that China and the IMF have different lending profiles, albeit with significant overlap, and that countries receiving Chinese loans tend to be on worse economic trajectories than their peers. Several case studies ground-truth the statistical analysis, finding that natural resources and diplomatic considerations explain much of China's bailout behavior.

Overall, China appears to operate as a real but limited alternative to the IMF. The effects of its emergency lending are substantial in certain countries desperate to avoid another IMF program, but probably not enough to pressure the Fund to reform. In fact, China's behavior merely follows in the footsteps of the United States and France, who have offered similar assistance to favored governments (Stasavage 2003, Momani 2004). Overall, China's approach to bailouts represents continuity rather than a break from the West: concerns about repayment generally dominate, but can be waived in pursuit of geopolitical gain.

Argument

The claim that Chinese loans compete with the IMF implicitly admits a model of interaction between three actors: a borrower, the IMF, and China. I first discuss the motivations of each actor and argue that when negotiation is limited to financial terms, equilibrium behavior is for only the IMF to offer bailouts. I then allow the borrower to compensate borrowers via non-financial means, and argue that in this situation, China will compete with the IMF to offer bailouts.

Actors and their motivations

Countries in need of balance of payments assistance, whether the United Kingdom in 1956 or Iran in 2019, must either acquire foreign exchange or allow their citizens' standard of living to decline as imported goods become more expensive. Their most pressing motivation is thus to secure access to foreign currency, usually US dollars. Yet while crises have a homogenizing effect, borrowers vary in their preference for different lenders. Some countries prefer IMF loans, because leaders desire political cover to enact painful reforms (Vreeland 2003). In other countries, the most powerful interest group may want to avoid such reforms, and prefer Chinese finance (Bunte 2019).

The IMF is most responsive to the interests of the United States, the United Kingdom, France, Germany, and Japan (Thacker 1999, Copelovitch 2010, Stone 2011, Vreeland 2019). Numerous studies have found a difference in IMF policy towards politically "important" and "unimportant" countries, as defined by the US and other major stakeholders. At the same time, the IMF's history with "unimportant" countries reflects a technocratic commitment

to sound macroeconomic policy (although the consensus on what constitutes sound policy can shift over time) (Woods 2014, Gallagher and Tian 2017). International relations scholarship has emphasized the former aspect of IMF preferences, while research on the effects of IMF programs has focused on the latter. Both matter for the IMF's bargaining range with borrowing governments.

Yet while the IMF takes a softer stance towards some borrowers than others, it reliably negotiates with any government that honors past debts to the Fund and commits to acting on its policy recommendations. Much of the IMF's influence and prestige derives from its status as lender of last resort to governments, which demands that it engage with all comers. This means that some form of IMF rescue is almost always an option for distressed governments, even if they do not always choose to accept it.

China has the most complicated interests of the three actors. Even when considering the Chinese government as a unitary actor, it pursues multiple objectives. Why does China lend? A complete answer begins with commercial motivations. China's lending to the rest of the world ultimately stems from its large and sustained current account surpluses, which are then invested in foreign assets. The official guardian of China's foreign exchange, the State Administration of Foreign Exchange (SAFE), invests primarily in low-risk financial assets, not infrastructure projects, but abundant foreign exchange provides the Chinese government with resources to make loans via other organs (Chinese loans are variously denominated in dollars, euros, and renminbi). Furthermore, the primary policy banks, China Development Bank and China Export-Import Bank, emphasize their commercial role and operate for a profit. Independent research confirms the importance of these commercial considerations (Gallagher, Irwin, and Koleski 2012).

Research into non-commercial determinants of Chinese lending identifies two principal concerns: natural resources, including oil and minerals, and geopolitical favors, such as shifting diplomatic recognition from Taiwan to the People's Republic of China (Dreher et al. 2018). The pull of natural resources reflects an official interest in securing access to these essential economic inputs, as well as China's willingness to accept payment in-kind. Western banks and the Japanese government also have a history of arranging resource-backed loans, but Western governments and the IMF as a rule do not. The provision of aid or loans in exchange for political cooperation, meanwhile, is typical of governments with the means to do so. Use of temporary membership in the UN Security Council as a quasi-random source of geopolitical influence has provided strong evidence of the widespread existence of this type of bargain (Kuziemko and Werker 2006, Vreeland and Dreher 2014).

Financial equilibrium

I first describe a model of interaction in which the borrower can only compensate lenders with future cash payments. This reflects the situation of a country like Honduras, which lacks significant natural resources or meaningful ways of geopolitically benefiting China. When encountering balance of payments problems, such countries are no more able to reassure China of their ability to repay than they are able to reassure commercial banks.

The interaction begins with the borrowing country seeking a loan of foreign currency. (The reasons for this are left exogenous, since most balance of payments crises are comparable without regard for their precise causes.) The government will attempt to issue



foreign-denominated debt, but its bonds compete with another asset that represents the market-clearing price for its debt. Some governments' reservation price is below this representative asset, and they are able to tap private markets, but others are shut out because of their high credit risk. These governments then simultaneously approach both China and the IMF for a loan. They may prefer one lender or the other, but as explained below, these preferences do not always matter for ultimate outcomes.

When compensation may only take the form of cash, China's interests are no different from those that of private investors. Consequently, it declines to bail out the troubled government, choosing to invest its capital in assets that offer more reward for less risk. In reality, Chinese capital is known for being more patient than commercial lenders, but a struggling government is still an unattractive investment from this perspective. The IMF, on the other hand, offers a bailout in its self-appointed capacity as international lender of last resort. The borrowing government may or may not accept the IMF's offer, but importantly, China is irrelevant to the outcome. Thus, even as its capacity to act as lender of last resort has grown over the past two decades, and even though some governments would prefer a Chinese bailout to an IMF program, China is not willing to compete with the IMF.

Empirical predictions: China does not lend to financially distressed governments, and participation in IMF programs remains unchanged over time.

Resource equilibrium

Now imagine that the borrowing country offers to guarantee its debts with oil exports. In this case, even countries on financially shaky footing can attract lenders. For example, the government of Angola backed out of talks with the IMF in 2004 while accepting an oil-backed loan from China. Yet as Deborah Brautigam (2009) points out in her influential treatment of the case, Western commercial banks were equally happy to arrange oil-backed loans. More recently, Swiss commodity giant Glencore loaned the government of Chad the equivalent of 10 percent of the country's GDP as it pursued access to the country's oil fields, attracting the ire of the IMF.^{3 4}

As these examples suggest, countries endowed with mineral resources or fossil fuels may already have a superior bargaining position when negotiating with the IMF. Yet the incredible expansion of Chinese loans to the developing world, coupled with its aim of securing access to natural resources, has undoubtedly expanded the supply of bailout money to such governments. This setup predicts that China will offer bailouts to certain countries, and that increases in Chinese lending will diminish the rate at which they turn to the IMF.

What about geopolitical favors? These favors can likely be bargained for financial assistance in much the same way that oil can. However, whereas oil is a fungible, well-measured commodity, geopolitical favors tend to be *sui generis*. Thus, my results focus on resources, but case studies reveal that a surprising Chinese bailout (from the perspective of the resource model) was associated with geopolitical favors. A surprising instance of a resource-rich country *not* receiving a Chinese bailout, meanwhile, is largely attributable to a government's decision to distance itself from China.

³ Javier Blas, "Glencore arranges \$1bn oil loan for Chad," *Financial Times* June 16, 2014.

⁴ Julia Payne and Madjiasra Nako, "IMF credit to Chad delayed over Glencore oil debt," *Reuters* November 24, 2017.

Data and Methods

Data

Getting reliable data on Chinese lending has long been a primary obstacle to research into its effects and causes. Until very recently, only two datasets were available, neither of them indisputably authoritative: one maintained by the China-Africa Research Initiative (CARI) at Johns Hopkins University, and the other by the AidData team at the College of William and Mary.

Fortunately, two new datasets are enabling researchers to ask new questions. The first is Sebastian Horn, Carmen Reinhart, and Cristoph Trebesch's dataset (HRT) on countries' stocks of debt from China. This dataset draws on both CARI and AidData, as well as dozens of other sources. Whereas CARI and AidData report new loans made by China, HRT measures countries' net credit position. When a flow measure is constructed from these stock data, negative values are possible. This is probably an improved measure for estimating the effect of Chinese lending: rolling over old debt is more correctly seen as continuing the status quo rather than an expansion of credit.

Second, I was able to procure non-public data on government borrowing from China, via the World Bank's Debtor Reporting System (DRS). These data are provided in confidence by sovereign governments to the World Bank, which shared them with me. Although the World Bank only provided me data from years 2008-2015 and I am unable to share the data in granular form, they are invaluable for validating the other data sources.

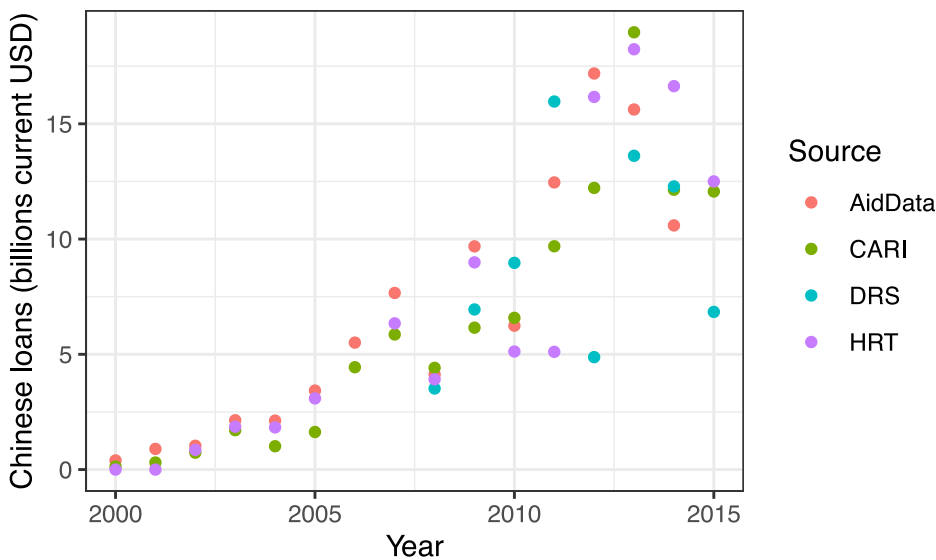
To enable visual inspection, I aggregated the data from each source by year across the countries they shared in common. Looking at total Chinese lending over time, the datasets agree in most years, but not in 2011 or 2012. No dataset consistently offers the highest or lowest estimate. The World Bank's data usually returns a lower total than HRT, but an IMF report sheds light on the reasons why: the Debtor Reporting System captures loans only as they are disbursed, and does not count loans made to borrowing-country state-owned enterprises.⁵ For the purposes of evaluating Chinese loans' ability to compete with IMF lending, it makes sense to rely on HRT's accounting, because in balance-of-payments crises, the announcement of a rescue package can have effects before money actually starts flowing. Loans to SOEs, even if not guaranteed by the government, are also still useful in substituting for IMF loans due to the fungibility of money. With these factors in mind, HRT seems to track the World Bank's numbers. I used Horn, Reinhart, and Trebesch's data in my main analysis for these reasons, as well as its broad geographic and temporal scope. The data (Figure 1) cover 104 countries that borrowed from China at least once, between 2000 and 2017 (a full list is available in the Appendix.)

Empirical Strategy

The core empirical contribution of the paper is to provide an estimate of the effect of Chinese lending on developing countries' probability of borrowing from the IMF. This effect has remained unclear despite considerable academic and political interest because numerous

⁵ International Monetary Fund, *The Evolution of Public Debt Vulnerabilities in Lower Income Economies*, February 2020.

Figure 1: Comparing Sources by Year, Aggregated Across Countries in Common



factors frustrate attempts at inference: allies of the United States, for example, may be dissuaded from borrowing from China, while simultaneously benefiting from the US’s influence in the IMF. To circumvent this problem, I outline an instrumental variables strategy, which can provide an estimate close to the true value for an important subset of developing countries.

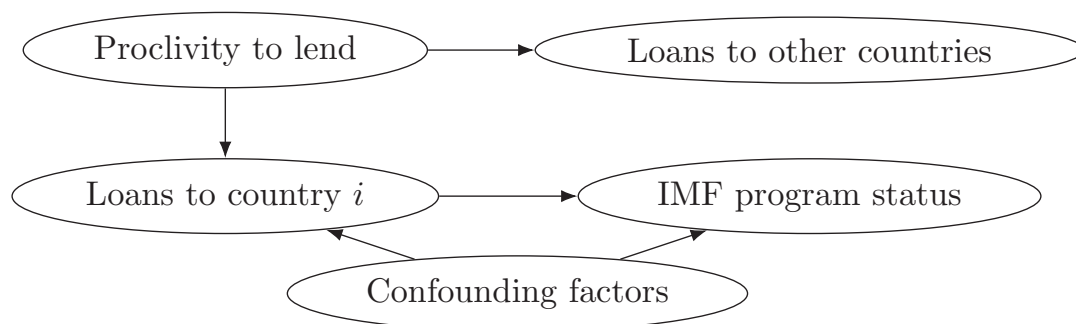
The strategy is motivated by the idea that China’s rise as a lender has been driven by domestic factors, including the growth of its economy, sizeable foreign exchange reserves, and its government’s desire to play a more active role in world politics. Although each individual loan is subject to various forms of confounding, the overall growth in Chinese lending is exogenous. Thus, the loans a country receives each year from China can be broken into two parts: an exogenous portion explained by the overall growth in Chinese lending, and an endogenous portion explained by the country’s idiosyncratic relationship with China.⁶

These two portions can be separated using the tool of ordinary least squares, which breaks the variation in an outcome variable into a fitted value predicted by the regressor, and residual variation between the fitted and measured value. In this case, the exogenous regressor is the sum of Chinese loans to all *other* countries in a given year. The intuition is that loans to other countries $\neg i$ in year t is a good proxy of China’s overall willingness and ability to loan in that year, but otherwise exogenous to loans made to country i . A causal diagram is given in Figure 2.

Simulations and analytic results confirm that this method of using aggregate loans to serve as proxy for an instrument that affects specific loans can succeed (see the appendix for full details). However, unlike a traditional instrumental variable, it requires that errors be mean zero in each time period (though they can still vary by country, and change for each

⁶ This instrument is inspired by Dube and Naidu (2015), who use US military spending in regions other than Latin America as an instrument for US military aid to Colombia, reasoning that swings in the US military’s global budget exogenously affect the amount of money available to give to Colombia.

Figure 2: A Causal Diagram of a Single Time Period



country-year). This is because the proxying strategy requires that year-over-year changes in aggregate lending be attributable to changes in China’s willingness to lend. Obviously, other factors are at play, but they are well-understood and can be controlled for.⁷ To control for the demand for financing, I include each country’s lagged economic growth rate and current account balance. To control for other sources of credit, I include the US federal funds rate, which is the prime interest rate of the entire global financial system: low rates cause capital to flow to the developing world in pursuit of higher returns, and rate increases reverse these flows.

The full setup uses a linear probability model for its ease of interpretation and implementation in a two-stage-least-squares approach.⁸ The full model is:

$$Loans_{it} \sim Z_{it} + u_i + Growth_{it} + CurrentAccount_{it} + FedFunds_{it} + \epsilon_{it} \quad (1)$$

$$IMF_{it} \sim \widehat{Loans}_{it} + u_i + Growth_{it} + CurrentAccount_{it} + FedFunds_{it} + \epsilon_{it} \quad (2)$$

Loans denotes loans from China as a percentage of GDP, *Z* is the logged sum of Chinese loans to all other countries in that year, *u* is a country fixed effect, and *IMF* is a binary variable that takes the value 1 if a country begins a new IMF program in that year and 0 otherwise. I use robust standard errors, clustered by country. All data and analysis code will be made available online.

In addition to controlling for time-varying confounders, the model must also satisfy the standard assumptions of an instrumental variables approach. Most prominent is the motivating insight, which alleges that China’s aggregate lending fluctuates for domestic reasons, which are exogenous to developing countries’ relationships with the IMF. This assumption draws strength from the fact that “almost all of China’s overseas lending and investment is official,” guided and conducted by state-affiliated institutions (Horn et al 2019). Trends in China’s financial relations with the outside world, from the wave of SOE-led investment in

⁷ Year fixed effects are out of the question, because the strategy is essentially using the year fixed effect as the instrument. See appendix.

⁸ The presence of a binary dependent variable might suggest the use of probit or logit regression. Yet while 2SLS strategies are compatible with these techniques in the second stage, doing so requires stronger assumptions about functional form and the distribution of errors (Angrist and Pischke 2009, p. 197). An “agnostic” approach to regression by contrast, prefers a first-order approximation of an easily interpretable conditional expectation function over this potentially more precise but more fallible method.



the 2000s, to the sharp restrictions on outward investment by private companies that began in 2016, have always been rooted in central government decisions. Development lending in particular has been most powerfully shaped by three key decisions. The first came in 2006, a time of fractured political power in China, when the transformation of China Development Bank from an almost entirely domestic lender into a peer of the World Bank was set in motion by its chairman, Chen Yuan.⁹ The second was Xi Jinping's Belt and Road Initiative (BRI), which prompted a second blossoming of Chinese lending, lasting until the Chinese government apparently decided to retrench in 2018, due to slowed economic growth within China. Although there is less direct evidence of this third decision, it is notable that outside observers again attributed the reversal to internal factors, rather than demand shocks.¹⁰ Thus, it is likely a safe assumption that these high-level decisions made in Beijing shifted the amount of money available to lend to developing countries.

Another frequent concern is known as the exclusion restriction: if the instrument affects the outcome through multiple channels, it is impossible to know how much influence runs through the channel of interest, which in this case is Chinese loans. Fortunately for the inferential strategy, there are few substitutes for hard currency during a balance of payments crisis. China's global lending activity is unlikely to affect a country's ability to evade the IMF through any channel other than loans themselves.

Three remaining assumptions are less commonly questioned, but no less important. The first is that the instrument actually have a strong effect on treatment status, which I validate by checking that the first-stage F-statistic is greater than 10. Secondly, there must be no "spillover" of loans or their effects across countries. Although some historical crises have given rise to the hypothesis of financial "contagion," this phenomenon is most relevant for countries that play a central coordinating role in the global financial system (Oatley et al 2013). Since no country in the sample plays such a role, spillover concerns are minimal. Put plainly, it seems unlikely that a Chinese loan to Kenya would have much influence on Tanzania's relationship with the IMF. Finally, this approach assumes that no country becomes *less* likely to borrow from China when China becomes *more* willing to lend. This assumption is rarely challenged, but it provides a reminder that instrumental variables return what is known as a Complier Average Causal Effect. The CACE applies to countries whose pattern of borrowing "complies" with the general pattern of lending set out by the instrument, and does not apply to "always takers" who might receive loans from China even in lean times, or "never takers" that do not borrow from China.

Resources and Heterogeneous Effects

The strategy outlined above promises to estimate the average effect of Chinese finance on beginning a new IMF program for all "compliers": countries whose borrowing from China tends to increase when China decides to lend more. However, I argue that Chinese bailouts are concentrated among countries that are able to secure the bailout with natural resources. In other words, I predict a null effect of Chinese loans on IMF-related outcomes for most countries, but a negative effect for countries with resources. Thus, a test of the full theory requires the fitting of two coefficients, one for each group of countries.

⁹ Andrew Yeh, "CDB backs China push to invest overseas," *Financial Times*, December 5, 2006.

¹⁰ Carmen Reinhart, "Does Anyone Even Know How Much China Has Lent to Poorer Countries?," *Barron's*, November 2, 2018.

To separate countries that could plausibly secure a loan with resource exports from those that would struggle to do so, I collected data on annual exports of mineral resources, petroleum, and natural gas. Major resource exporters were identified as averaging \$1.5 billion USD in natural resource exports annually, which would facilitate repayment-in-kind for a large loan. 42 countries fell above this threshold, while 63 fell below. Partitioning the sample in this way has the effect of reducing statistical power, but it enables a transparent comparison of effect sizes across groups.

Results

In the previous section, I argued that the quantity of borrowing from China for some countries is shifted by exogenous booms and busts in Chinese lending. This argument, which was rooted in qualitative observations, is borne out by data: the amount of money a country receives from China (expressed as a share of GDP) is strongly predicted by the (logged) value of Chinese loans going to all other countries in that year, with an F-statistic well above the accepted threshold of 10.

This exogenous variation in lending provides an opportunity to answer the question: does Chinese lending compete with the IMF? Estimated effects unanimously support the hypothesis that Chinese loans *do* enable some countries to avoid turning to the IMF for help. The full specification in column (3) of Table 1 estimates that a one-percent-of-GDP loan from China reduces a country's probability of beginning a new IMF program by ten percentage points. Since only ten percent of all country-years in the dataset include a new program, this is a substantively enormous effect.

Because data on covariates were not available for all country-years, columns (1) and (2) report specifications with fewer controls and additional observations. The estimated effect size is smaller, likely due to omitted variable bias: a healthy current account makes countries less likely to borrow from China or to approach the IMF. Like traditional IV methods, this estimation strategy can safely ignore omitted variable bias on a case-by-case basis, but because of the indirect way it measures China's willingness to lend, it cannot handle bias that affects the entire sample in a given year. Since capital flows into and out of developing

Table 1: Main Results

	Model 1	Model 2	Model 3	Model 4
Chinese loans	-3.79 [-7.99; 0.41]	-6.07* [-11.19; -0.96]	-10.32* [-19.79; -0.85]	
Chinese loans (lagged)				-11.33* [-21.90; -0.76]
Country fixed effects	✓	✓	✓	✓
Lagged growth		✓	✓	✓
US prime rate		✓	✓	✓
Lagged current account			✓	✓
Num. obs.	1780	1661	1190	1192
(Clusters)	(104)	(104)	(79)	(79)
First-stage F-statistic	29.0	33.5	17.4	24.6

* 0 outside the confidence interval



countries are correlated, model (3) is likely more reliable than models (1) and (2). Nevertheless, even the minimalist model (1) returns a negative effect that translates into a one-third reduction in relative risk for a typical country in the sample.¹¹

Model (4) estimates the effect of a similar loan made one year previously. Lagging the explanatory variable in this fashion should help address lingering concerns about reverse causality—i.e. that countries beginning a new IMF program are pressured to avoid borrowing from China. The estimated effect remains large, negative, and statistically significant.

There are limits to how much can be learned from these data. Estimated effects are imprecise, and only reflect an average across many different countries. Nevertheless, these estimates make a significant contribution to the study of China’s impact on development finance and global governance by providing rigorous evidence that Chinese loans have helped governments avoid beginning new IMF programs.

Results are strongest among major resource exporters

The estimates given in Table 1 represent an average across all 104 countries in the dataset. This average obscures the divergent patterns predicted between resource exporting countries and the rest: resource-rich countries are the most likely candidates for Chinese bailouts, while requests from other countries may be declined.

To test these predictions, I fit two separate models: one for countries coded as major resource exporters, and another for the remaining countries. As expected, estimated effects were much larger for resource exporters. Although they varied considerably depending on the specification, the smaller estimate of -9.6 corresponded to an estimate of less than 2 among resource-poor countries, and the larger estimate of -20 greatly exceeded the estimate of -7 for resource-poor countries under the same specification (Table 2).

Standard errors were extremely large for the group of resource exporters due to the small number of observations (42 clusters) as well as the sparsity of the outcome: only 52 country-years

Table 2: Heterogeneous Effects by Resource Exports

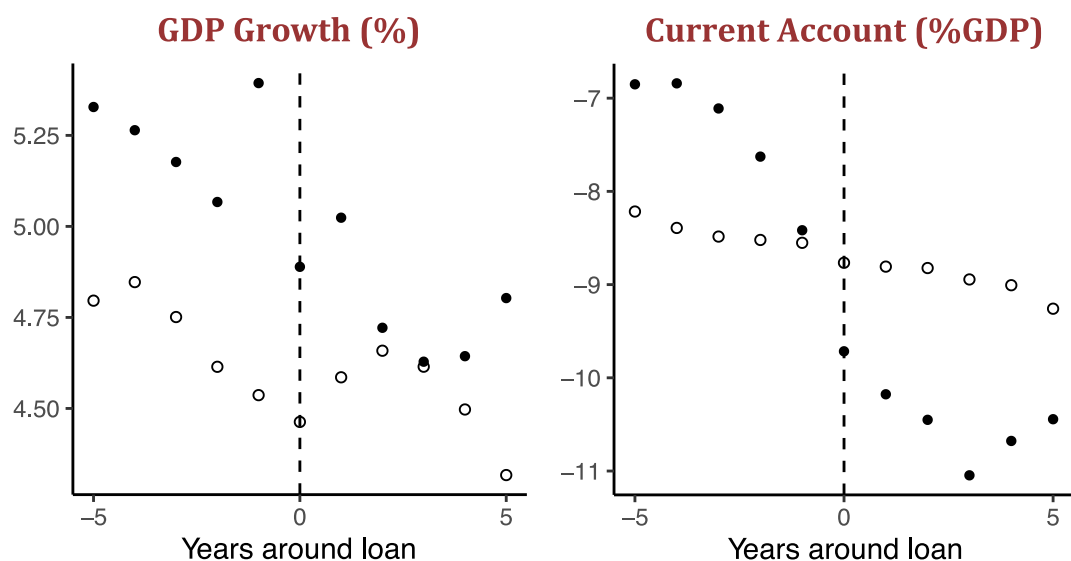
	Others	Resource-Rich	Others	Resource-Rich
Chinese loans	-1.75 [-5.92; 2.42]	-9.62 [-21.09; 1.85]	-7.43 [-15.32; 0.46]	-20.47 [-54.10; 13.16]
Country fixed effects	✓	✓	✓	✓
Lagged growth			✓	✓
US prime rate			✓	✓
Lagged current account			✓	✓
Num. obs.	1073	707	713	477
(Clusters)	(62)	(42)	(47)	(32)
First-stage F-statistic	19.9	10.6	31.0	2.8

* 0 outside the confidence interval

¹¹ Because the sample amalgamates “compliers” with “always-takers” that might be unaffected by the identifying variation, this relative risk statement is not strictly causal, but it should reassure readers that the CACE (which is causal) is substantively large.

(7 percent) included a new IMF program. As a result, the differences are not statistically significant, but they do conform to theoretical expectations. Perhaps the most surprising result is that the estimates for resource-poor countries are still negative, suggesting that they might be able to make some use of Chinese bailouts. Case studies suggest that these exceptions to the rule occur when borrowers are of special geopolitical importance to China.

Figure 3: Countries Borrow From China in Hard Times



Filled circles indicate that a large Chinese loan was made in year 0, while the open circles reflect bootstrap estimates

A second insight from this analysis is that Chinese lending is significantly more “elastic” to resource-poor countries. The large F-statistic for this group of countries reveals that their borrowing from China tends to rise and fall in response to China’s global willingness to lend. By contrast, resource-rich countries are more insulated from budget cycles, underscoring the distinct nature of these loans.

Since budget cycles provide the model’s identifying variation, it is reasonable to be concerned about the estimates for resource-rich countries. Certainly, nothing precise can be said about the size of the effect, only that it is likely larger than for resource-poor countries. However, we can be confident in this limited inference. Weak instrument bias primarily affects situations in which there are more instruments than endogenous variables; just-identified instruments such as this one are median-unbiased (Angrist and Pischke 2009, p. 209). Even more importantly, case studies support the general idea of resources-for-bailouts.

Providing context with observational data

IV methods promise rigorous answers to causal questions, but do not tell the whole story. Here, I draw on descriptive data to supplement my argument that Chinese loans can serve as bailouts, but not every Chinese loan is a bailout.

Evidence that Chinese loans provide a lifeline to troubled governments comes from tracing the economic health of borrowers around the time of their loan. For 259 large loans

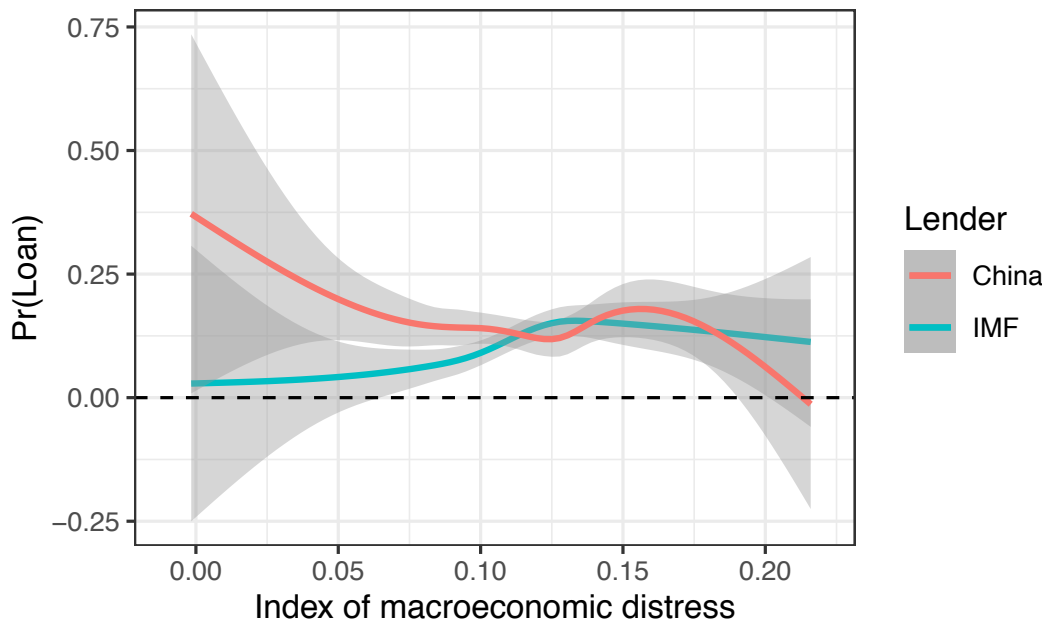


(defined as greater than one percent of borrower's GDP), I calculated the average current account balance and GDP growth rate of borrowers in the five years before and after receiving the loan. 81 countries appear at least once in this list of large loans, while some appear more often because they repeatedly make large loans from China. In the most extreme case, Laos contributes eleven observations, each centered on a year in which it borrowed more than one percent of GDP from China.

Interpreting these patterns is difficult without a counterfactual, so I repeated the procedure with 259 randomly chosen country-years 100 times and averaged them. These bootstrap time series appear as hollow circles; the time series for the borrowers appear as filled dots. Both measures suggest that, compared to their peers, these countries are going through hard times: current account balances are increasingly negative and growth is falling, particularly in the year of the loan. By lending into a downturn, China appears to be acting as a lender of last resort for this group of borrowers.

However, it would be a mistake to conclude from this information that every large Chinese loan is a bailout. In fact, most are motivated by commercial considerations and are made to creditworthy borrowers. To illustrate the differences between Chinese lending and IMF lending, I compared the macroeconomic profile of borrowers from each. A composite profile was created by combining data on countries' current account as a share of GDP and economic growth rate are combined in an index that best predicts participation in an IMF program. Country-years are arranged by their score on this index, and two moving averages track the the likelihood of beginning a new IMF program or receiving a loan from China that was at least one percent of GDP—the same 259 loans that were explored in Figure 2. By construction, the line for IMF borrowing slopes upwards; in contrast, China's mostly commercially-driven loans tend to go to economically healthy borrowers, resulting in a downward-sloping line. This concisely illustrates the point, lost on many critics of Chinese lending, that the bulk of Chinese lending goes to countries that are capable of repaying them.

Figure 4: Chinese Lending Overlaps With, but Does Not Mirror, IMF Lending



However, the likelihood of receiving a Chinese loan does not go down uniformly. In fact, in the domain where observations are most abundant, the moving average of Chinese loans is flat. Many countries that are candidates for IMF assistance are receiving Chinese loans, some of which do enable the borrowers to avoid beginning a new IMF program. These, but not all loans, can be characterized as bailouts.

Case Studies

To confirm these results in greater detail, as well as to explore the reasons behind anomalous cases, I selected four countries for closer examination. Two cases conformed to my predictions: a resource-exporter that received a bailout (Angola) and a resource-poor country that did not (Zimbabwe). Two others flew in the face of these expectations: Mongolia, a major resource exporter that chose the IMF over China, and Sri Lanka, a country that received balance of payments assistance from China without resource guarantees. Taken together, these four cases support the idea that resources play an important role in securing loans from China, while geopolitics constitute a key second dimension.

Angola

Angola is the paradigmatic case of Chinese competition with the IMF. After more than a quarter-century of civil war ended in 2002, the country's infrastructure lay in ruins and the government sought loans of foreign currency to jump-start reconstruction. It had recently begun several borrowing arrangements with the IMF, but repeatedly failed to implement reforms to the satisfaction of the Fund, which stopped future disbursements of money. In 2004, Angola participated in another round of talks with the Fund, and announced that they expected to agree to a new arrangement sometime in the spring.¹² However, the expected program never materialized, and the Angolan government instead negotiated oil-backed loans with China Export-Import Bank and several Western commercial banks (Brautigam 2009).

The money from China Exim Bank's loan never left China: revenue from market-price oil sales to China were deposited in escrow with Exim Bank, before being drawn down by Chinese companies contracted to construct infrastructure in Angola (Corkin 2013). In this respect, Angola does not fit the typical portrait of a balance of payments crisis. The presence of Western commercial banks also proves that China was not acting as a lender of "last resort." This suggests that Chinese bailouts come in many flavors, and are not always as dramatic as the terminology might lead one to believe. As Deborah Brautigam has persuasively argued, this particular loan did not merit some of the sensationalist claims made about it, to the effect that China was undermining the IMF with harmful consequences for Angola's citizens. However, because the need for foreign assistance with reconstruction was the main impetus for approaching the IMF, and because China's loan enabled the government to meet this goal without beginning a new IMF program, this scenario meets my definition of a bailout. As expected, oil played an essential role in unlocking Chinese assistance.

¹² "Angola: Minister Kussumua calls for British support for reconstruction," *ReliefWeb*, March 21, 2004. <https://reliefweb.int/report/angola/angola-minister-kussumua-calls-british-support-reconstruction>

Zimbabwe

Zimbabwe has had a contentious relationship with the IMF and close ties with China since its independence in 1980. Except for its first small Standby Arrangement, Zimbabwe has never successfully completed an IMF program. It began several during the 1990s, but fiscal targets were routinely missed, and unpaid loans made new programs impossible. In contrast to its fraught relationship with the West and Western-led institutions, Zimbabwe prized its connections to China. China was the first country to open a diplomatic mission in Zimbabwe and dignified its leader Robert Mugabe with high-level visits throughout his tenure, which was otherwise marked by diplomatic isolation. It also made numerous loans for infrastructure projects.

Yet despite these seemingly ideal conditions, China has routinely declined to help Zimbabwe with its many financial problems. In 2014, Robert Mugabe travelled to Beijing to ask for a bailout, but was rebuffed. The next year, Vice President Emmerson Mnangagwa made the same trip for the same reason, with the same results. According to the *Zimbabwe Independent*, Chinese officials expressed skepticism that the country would be able to repay any new loans, and affirmed that China did not provide general budgetary support.¹³

Although Zimbabwe is endowed with rich mineral resources, it has only exported about \$680 million of resources annually since 2000.¹⁴ Large mining companies have not invested in the country due to indigenization laws requiring a 51 percent Zimbabwean stake in any local operations. These comparatively small export earnings are insufficient to cover the country's import bills, limiting the country's ability to guarantee a Chinese bailout with natural resources. This case also illustrates the logic behind the decision to classify countries by resource exports rather than resource endowments: what matters is how readily resources can be converted into hard currency.

Eventually, Zimbabwe began cooperating with IMF advisers in a series of Staff-Monitored Programs, which do not involve a disbursement of Fund resources. However, the country has continued to struggle with reforming the economy and paying off debts. Mnangagwa replaced Mugabe as President in a coup in 2017, and early in 2020 again appealed to China, only to be denied once more.¹⁵

Sri Lanka

Sri Lanka has figured prominently in China's foreign economic strategy. As early as 2004, the American defense establishment recognized that China sought to increase its presence in the Indian Ocean, and used the term "string of pearls" to describe the constellation of ports that would serve this purpose. China has always emphasized the commercial purpose of these ports, and since 2013 has described infrastructure projects in the region as part of the "21st Century Maritime Silk Road." Two major port projects are located in Sri Lanka, in Colombo and Hambantota.

¹³ Elias Mambo, "Zimbabwe: Repay U.S. \$1.5 Billion, China Tells Zim," *Zimbabwe Independent* July 31, 2015.

¹⁴ Author's calculations. Source: UNCTAD.

¹⁵ Tinashe Kairiza, "No bailout: China tells Zim govt," *Zimbabwe Independent*, January 17, 2020.

The Hambantota port in particular has played a large role in crystallizing popular conceptions of China's Belt and Road projects. Usually, the port is described as a debt-financed infrastructure project that did not produce enough revenue to pay for itself, resulting in a debt-equity swap whereby China assumed a 99-year lease of the port in exchange for forgiving the debt. Other observers, however, have argued that the debt servicing costs on the port were trivial compared to Sri Lanka's total debt service bill (mainly to lenders other than China), which was the main problem.¹⁶ In this analysis, the Hambantota Port was leased to generate a windfall of \$1.1 billion to meet short-term debt obligations. Although this account lacks smoking-gun evidence, it is consistent with the country's behavior three years later, when it incontestably did approach China for emergency lending.¹⁷

Future relief is not guaranteed, but between the Hambantota Port deal and a \$500 million loan to assist with the financial repercussions of the global coronavirus pandemic, it appears that China has already provided Sri Lanka with balance of payments assistance, which the present government strongly prefers to an IMF program. Like Zimbabwe, Sri Lanka cannot easily compensate China for this assistance with natural resource exports. It has been more successful though, likely because of its greater attractiveness to China as a strategic partner. By leasing one port and hosting a Chinese submarine in another, Sri Lanka has provided great geopolitical value to China. It has also benefited from playing the desires of China against the fears of India, much as Egypt secured material support from both the Soviet Union and the United States during portions of the Cold War. Unlike natural resource exports, the value of such strategic cooperation defies quantification, but it appears to play an equally important role in bargaining for financial assistance from wealthier states.

Mongolia

In the mid-2000s, Mongolia was poised for rapid growth. Russia had just forgiven 98 percent of the country's Soviet-era debt and a commodity price boom was underway. Unfortunately, like many other resource-powered economies before it, Mongolia borrowed heavily during the boom, leaving it vulnerable to an inevitable bust. By 2015, it was clear that the country would soon face a reckoning, as debt service was projected to rise to 35 percent of government revenues within two years (Batsuuri 2015).

The IMF specializes in assisting governments through exactly such restructurings—much more so than the infrastructure projects that were at the heart of the Angolan case. At the same time, some members of Mongolia's government suggested that the country instead borrow from China, which was offering assistance.¹⁸ Not only was Mongolia perfectly situated to guarantee any loan with its robust mineral exports, but its location made it an obvious candidate for China to cultivate as an ally. However, this course of action contravened Mongolia's "Third Neighbor Policy": sandwiched between Russia and China, Mongolia has sought to avoid domination by either through developing strong relationships with other countries. Ultimately, a fear of undue Chinese influence led Mongolia to choose an IMF Extended Fund Facility (EFF).¹⁹

¹⁶ Umesh Moramudali, "The Hambantota Port Deal: Myths and Realities," *The Diplomat*, January 1, 2020.

¹⁷ Marwaan Macan-Markar, "Sri Lanka turns to China rather than IMF to avoid default," *Nikkei Asia*, October 12, 2020.

¹⁸ Alexander Benard, "Why Chinese Money Is not the Answer to Mongolia's Economic Woes," *The Diplomat*, October 20, 2016.

¹⁹ Lucy Hornby and Mereen Kahn, "Mongolia asks IMF for rescue loan," *Financial Times*, September 30, 2016.



Of all four cases, Mongolia's is the most interesting: an IMF program occurred *despite* China's offer of assistance. If Zimbabwe underscored that not every country gets a Chinese bailout that wants one, Mongolia reminds us that not every country wants one. Geopolitical considerations, which aided Sri Lanka in securing a loan from China, actually pushed Mongolia away. Furthermore, the EFF was in fact accompanied by loans from China, as well as Japan, Korea, the World Bank, and Asian Development Bank as a regional bailout coordinated by the Fund. Although Chinese loans sometimes compete with the IMF, they can also play a cooperative role. This reflects China's two-pronged strategy of de-centering the Fund by investing in regional and bilateral financial safety nets, while still engaging with the institution and pressing for a level of influence that reflects its economic importance.

Discussion

This research provides the strongest evidence to date that Chinese lending serves as an alternative to the IMF and characterizes where the effects are strongest and weakest. Chinese loans have enabled some resource-rich or strategically vital countries to skip the IMF, but they are not available to all borrowers.

What does this mean for developing countries? On one hand, the ability to choose between IMF and Chinese financing packages marks a clear step forward for economic sovereignty. For decades, the IMF has attracted the ire of developing countries for imposing Western policy preferences on unwilling polities. By contrast, Chinese loans are made without policy stipulations. On the other hand, entering into a debtor-creditor relationship with China hands Beijing an important bargaining chip. As the case studies illustrate, different governments come to different conclusions about the appropriateness of this tradeoff. It is also important to remember that China did not invent this method of diplomacy; both the United States and France have provided such emergency loans in exchange for political favors (Stasavage 2003, Momani 2004).

Although Chinese bailouts pose no existential threat to the IMF, evidence of their existence does add another dimension to our understanding of how it intersects with geopolitics. Over the past twenty years, international relations scholars have largely completed a portrait of international organizations—especially the World Bank, IMF, and UN—as places where political bargains are struck between rich and poor countries. This paper advances the literature by demonstrating how China, a state with capacious economic resources but lacking institutional power, can strike bargains outside the institution. Outside options also play a key role in theories of institutional change, and the paper questions the usual depiction of the IMF as insulated from challengers (Lispcy 2015).

Finally, it is important to note that Chinese loans may not continue to play the same role in the future. The period covered by the data, 2001-2017, corresponds to the era in which China emerged as a major lender to the developing world. Since 2017, the pace of new loans has slowed, and China has begun to confront the problem of borrowers unable to meet their debt service obligations. It is entirely possible that as China's position begins to resemble that of traditional Western creditors, it will begin to behave in a more similar manner to them and work more closely with the IMF.

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Appendix 1: List of Countries

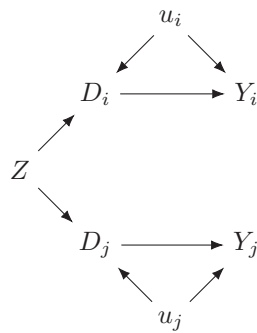
Country Name	Major Resource Exporter	Country Name	Major Resource Exporter	Country Name	Major Resource Exporter
Albania		Fiji		Pakistan	
Algeria	✓	Gabon	✓	Papua New Guinea	
Angola	✓	Guinea		Peru	✓
Argentina	✓	Guyana		Philippines	✓
Armenia		India	✓	Ghana Romania	
Bahamas, The		Indonesia	✓	Russian Federation	✓
Bangladesh		Iran, Islamic Rep.	✓	Rwanda	
Belarus	✓	Jamaica		Samoa	
Benin		Jordan		Senegal	
Bolivia	✓	Kazakhstan	✓	Serbia	
Bosnia and Herzegovina		Kenya		Seychelles	
Botswana		Kyrgyz Republic		Sierra Leone	
Brazil	✓	Lao PDR	✓	South Africa	✓
Bulgaria	✓	Lebanon		South Sudan	✓
Burkina Faso		Lesotho		Sri Lanka	
Burundi		Liberia		Sudan	
Cabo Verde		Macedonia, FYR		Suriname	
Cambodia		Madagascar		Tajikistan	
Cameroon		Malawi		Tanzania	
Central African Republic		Malaysia	✓	Togo	
Chad	✓	Maldives		Tonga	
Chile	✓	Mali		Turkey	✓
Colombia	✓	Mauritania		Turkmenistan	✓
Comoros		Mauritius		Uganda	
Congo, Dem. Rep.	✓	Mexico	✓	Ukraine	✓
Congo, Rep.	✓	Mongolia	✓	Uruguay	
Costa Rica		Montenegro		Uzbekistan	✓
Cote d'Ivoire	✓	Morocco		Vanuatu	
Djibouti		Mozambique		Venezuela	✓
Dominica		Myanmar	✓	Vietnam	✓
Ecuador	✓	Namibia		Yemen	✓
Egypt, Arab Rep.	✓	Nepal		Zambia	
Equatorial Guinea	✓	Niger		Zimbabwe	
Eritrea		Nigeria	✓		
Ethiopia		Oman	✓		



Appendix 2: Consistency of the Instrument

The paper makes use of a somewhat unusual instrumental variables strategy, which assumes that an unobserved instrument affects every unit equally and changes over time. These year-over-year changes provide identifying variation, and can be proxied by changes in treatment for other units. A causal diagram for a single period is given in Figure 5, where Z denotes China's unobserved willingness to lend, D a country's new borrowing from China, Y an indicator for if the country begins a new IMF program, and u unobserved confounding.

Figure 5: A Causal Diagram of a Single Time Period



Because Z is unobserved, this strategy requires that the hidden instrument be the *only* unobserved cause each unit has in common. Other time-varying confounders that affect every unit are manageable, but only if they are observed and controlled for. Period fixed effects cannot be used to address this concern, because the time fixed effect is the spatial instrument—unexplained change over time in average treatment levels is assumed to be driven by Z , and so ΔZ is estimated by these over-time changes. To be sure, situations without unobserved time-varying confounding are rare, but the approach is no different from any other instrumental variables strategy, which always requires selection on observables for the instrument. In the paper, several control variables are included to help justify the assumption that aggregate changes to Chinese lending are overwhelmingly attributable to domestic Chinese decision-making.

Proof that the instrument is consistent

Given the system of equations:

$$D_{it} = \alpha_i + Z_t + u_{it}$$

$$Y_{it} = \beta_i + D_{it} + \epsilon_{it}$$

Define γ_{it} to be the change in the sum of treatment variables for all units $\neg i$ from time $t-1$ to time t :

$$\gamma_{it} = \sum_{\neg i} D_{i,t} - \sum_{\neg i} D_{i,t-1}$$

If, $E[u_{it} | \alpha_i, Z_t] = 0$, then $\frac{\gamma_{it}}{n-1}$ is a consistent estimator for $Z_t - Z_{t-1}$.



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Proof.

$$\gamma_{it} = \sum_{i=1}^{n-1} D_{i,t} - \sum_{i=1}^{n-1} D_{i,t-1}$$

$$\gamma_{it} = \left(\sum_{i=1}^{n-1} \alpha_i - \sum_{i=1}^{n-1} \alpha_i \right) + (n-1)(Z_t - Z_{t-1}) + \left(\sum_{i=1}^{n-1} u_{it} - \sum_{i=1}^{n-1} u_{i,t-1} \right)$$

$$E[\gamma_{it}] = (n-1)E[Z_t - Z_{t-1}] + E\left[\sum_{i=1}^{n-1} u_{it}\right] - E\left[\sum_{i=1}^{n-1} u_{i,t-1}\right]$$

$$\frac{E[\gamma_{it}]}{n-1} = E[Z_t - Z_{t-1}]$$

The final equality follows from the assumption that errors are mean zero within each time period.