

Borrowing Behavior:

How Governments Take Advantage of Lender Competition in Africa

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Abstract

Despite the growth of scholarly work documenting alleged competition between China and the World Bank in offering development assistance to Africa and various implications for the subsequent well-being of African countries, there is almost no work studying how African countries manage the options available to them. I argue that African governments borrow from China to induce fewer loan conditions from the World Bank while continuing to borrow from the World Bank to offset potential downsides associated with Chinese debt. I test three implications of this theory using observational data on all 54 African countries from 2004 to 2017. No evidence is found for the implications but future opportunities are discussed for this line of research.

1 What Needs Explaining and Why

In the global finance literature, there is a nascent focus on spending by the People's Republic of China (China) (e.g., Dreher et al. 2022) reflecting a general trend in political science to understand the impact of a now-preeminent China (e.g., Bergh and Kärnä 2021; Weiss and Wallace 2021).¹ This work generally studies the effects of a rising supply of Chinese finance on the behavior of other, more traditional lenders like the World Bank (e.g., Humphrey and Michaelowa 2019) and on various outcomes in countries receiving that finance (e.g., Bader 2015; Wang, Pearson, and McCauley 2022). There is an emerging, tentative consensus that Chinese and Western lenders are engaged in some degree of competition over providing finance to Africa (e.g., Kilama 2016; Hernandez 2017; Dreher et al. 2018, p. 190; cf. Humphrey and Michaelowa 2019) with diverse repercussions for African states (e.g., Blair, Marty, and

¹All code and data are available in the [GitHub repository](#) with the same title.

Roessler 2022; Martorano, Metzger, and Sanfilippo 2020) and Western lenders (e.g., Li 2017; cf. Dreher et al. 2022).

Yet, there has been little scholarly consideration of how African governments navigate this competitive loan environment despite the literature implying that there are numerous consequences of borrowing from specific actors. For example, choosing to receive finance from China instead of Western competitors has been associated with increased conflict (Dreher et al. 2022), worsening perceptions of the economy and political incumbents (Wang, Pearson, and McCauley 2022), heightened commitment to liberal, democratic values from citizens (Blair, Marty, and Roessler 2022), and improved economic development (Dreher et al. 2021). Given the implied importance of borrowing from certain lenders in this competitive lending environment, how do African governments choose who to borrow from?

While the answer appears politically and economically important for Africa itself, it also has implications for the rest of the world if African government behavior contributes to larger geopolitical competition between China and the West. Indeed, if recipient behavior matters at all for explaining development assistance it will be an important finding for the global finance literature, which has almost exclusively focused on donor and lender motivations for understanding aid and loan flows and their repercussions. Furthermore, understanding recipient behavior's influence on lending outcomes can help inform policy for reducing African debt, which has increased dramatically over the last two decades (Bayar, Yu To, and Bale 2023).

So how are African countries observed to choose between borrowing from China and their alleged Western competitors? In [Figure 1](#), I graph the amounts of loans borrowed from both the World Bank and China for every African country between 2000 and 2017. I chose to focus on the World Bank and Africa as they have been the main subjects of much of the work suggesting consequential financial competition with China (e.g., Gehring, Kaplan, and Wong 2022), while the specified period delimits the data available for Chinese finance. The figures reveal a curious empirical regularity between countries. Most African governments

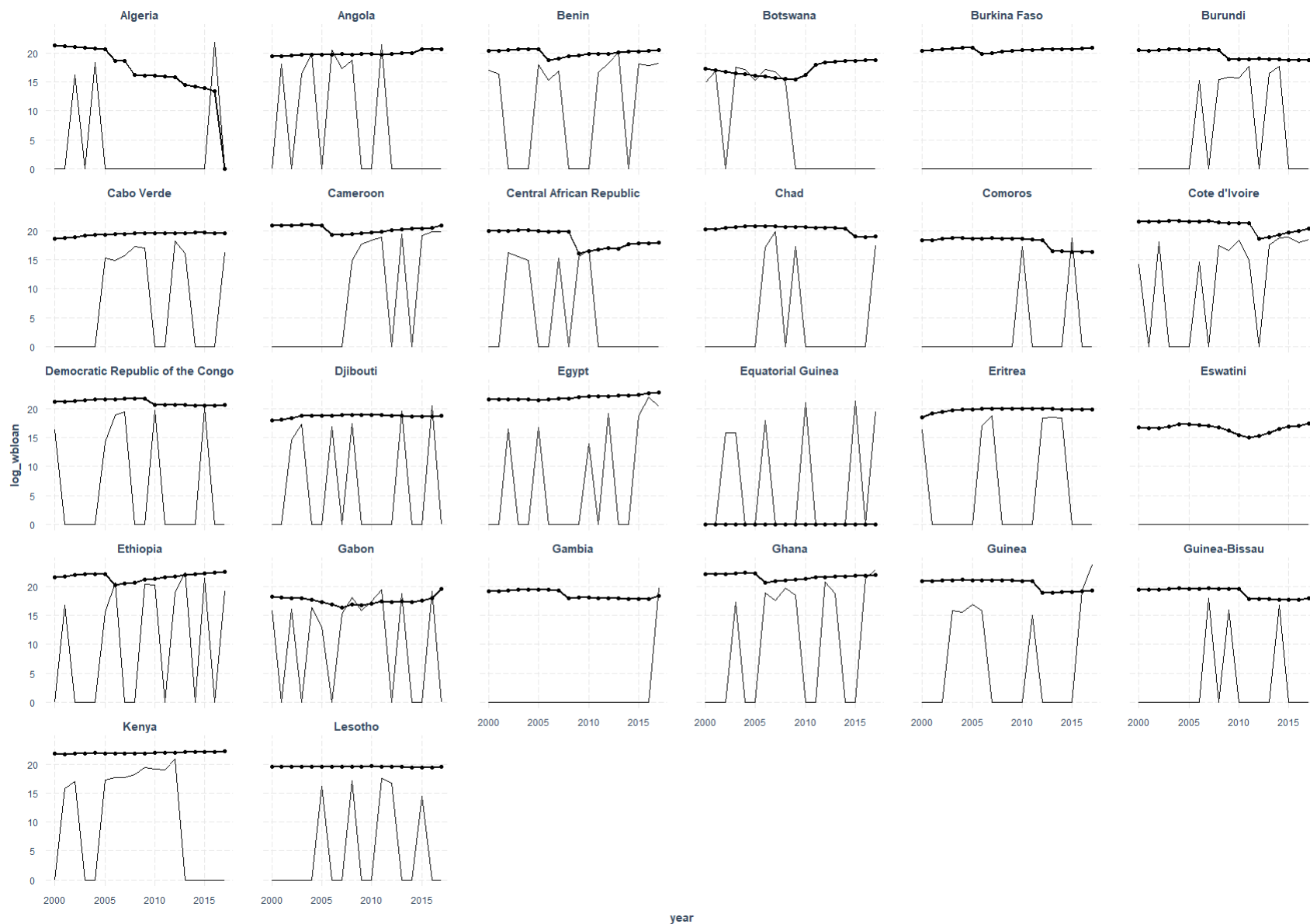
show similar borrowing trends, consistently borrowing large amounts from the World Bank (bold dotted line) while periodically borrowing similar amounts from China (plain line). That is, most countries choose to borrow relatively equally between China and the World Bank in many of the observed years while cumulatively still borrowing more from the World Bank. Given the implied importance of borrowing money from certain lenders, could this observed borrowing behavior be just coincidental? Why do most recipient countries follow this borrowing pattern?

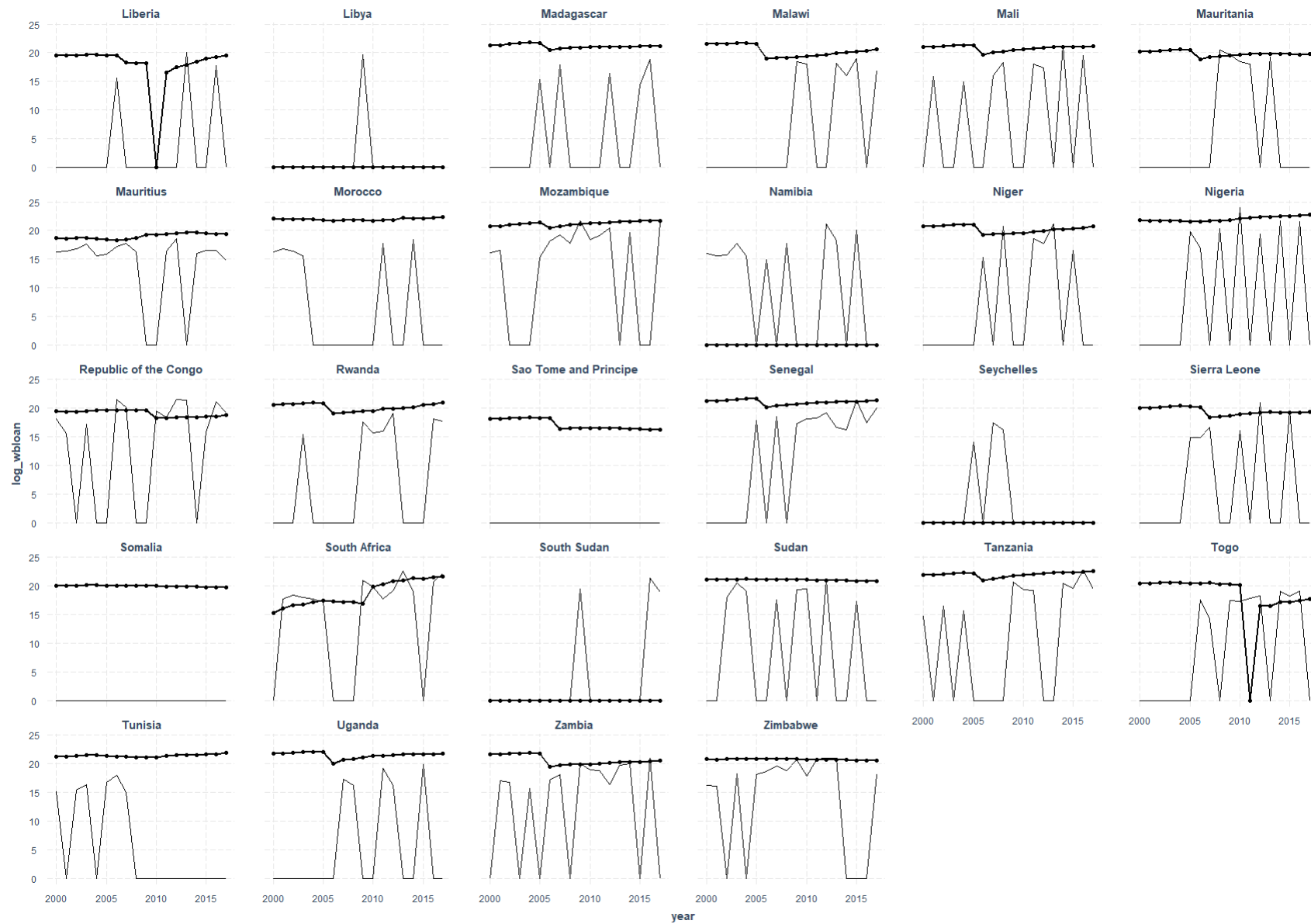
I argue that this observed pattern is the outcome of a rational decision by African governments to maximize the expected benefits of lender or supply-side competition. By borrowing relatively equally between China and the World bank in some periods, countries may induce fewer loan conditions from the World Bank (Hernandez 2017) while preventing the implied ills of relying too heavily on Chinese finance (e.g., Wang, Pearson, and McCauley 2022) by borrowing cumulatively more from the World Bank. In other words, the observed borrowing behavior of most African governments is rational because they are striking a balance between taking enough Chinese money to induce competitive Western loans without taking too much to generate costs associated with ample Chinese finance.

The rest of the paper is structured as follows. In the next section, I describe the nature of lender competition before continuing to explain the observed borrowing regularities highlighted above. After producing testable implications, I detail my research design and empirical models. Then, results are presented and followed by a discussion.

Figure 1: Loans received from the World Bank (The World Bank Group [2022](#)) represented by the thick, dotted line and China (Custer et al. [2021](#); Dreher et al. [2022](#)), represented by the thin plain line. Continued on next page.

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2 The Nature of Contemporary International Lender Competition in Africa

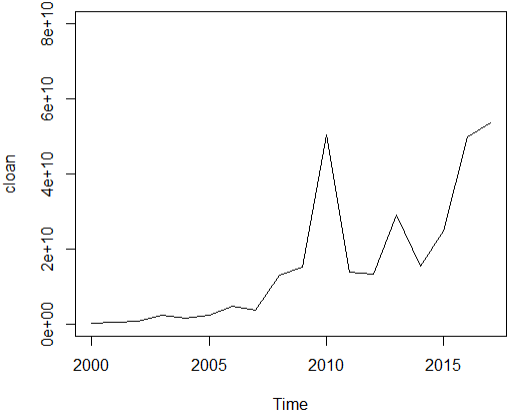
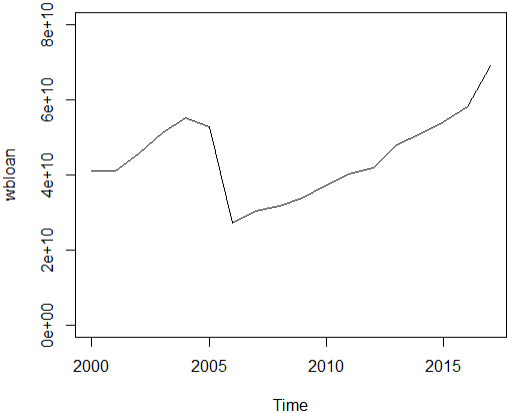
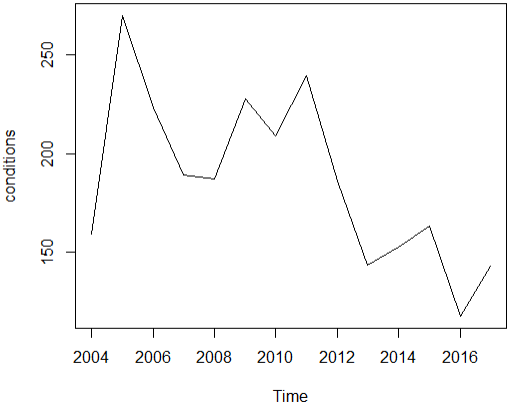
Global finance scholars have made claims of “competition” between suppliers of international aid and loans based on various indicators. With regards to foreign aid, or money without explicitly attached conditions for recipients, Blair et al. (2022) observe that China and the United States (U.S.) have opposing “rhetorical and programmatic emphasis” on the desired political outcomes of their aid, including democracy and corruption (p. 1356). It is implied that these countries’ foreign aid regimes are thus in competition for affecting these outcomes.

Rather than inferring donor competition from their competing preferences, other scholars have concluded the existence of competition from observed behavioral changes in either China or the West. For instance, while studying Chinese financial behavior, Dreher et al. (2018) noted that both Chinese aid and loans increase as countries receive more Western finance. Since the authors claim to have accounted for all relevant covariates of Western finance, they interpret this correlation as “... evidence of competition between China and the West” (p. 190). Hernández (2017), focusing primarily on loans and the World Bank, finds that the World Bank offers loans with fewer conditions to countries as Chinese finance increases and subsequently argues that “The World Bank has lessened its conditionality in response to the increasing competition from China ...” (p. 545).

For the purposes of this paper, I focus on loans rather than aid while building on Dreher et al. (2018) and Hernández (2017) to explicitly define “competition” as the reduction of loan conditions and/or the enlarging of loan sums by lenders in an effort to make finance more attractive to potential borrowing countries. From [Figure 2](#), it seems that competition as defined here is indeed present during most of the period from 2000 to 2017 since World Bank conditionality is decreasing while both Chinese and World Bank loan sums are increasing.

As to the purpose behind this increased competition, various reasons have been put forth by these authors. Regarding China, the least controversial motive given for their

Figure 2: The average World Bank loan conditions per project across Africa in a given year (The World Bank Group 2023a); The sum of World Bank loans across Africa in a given year (The World Bank Group 2022); The sum Chinese loans across Africa in a given year (Custer et al. 2021; Dreher et al. 2022)



international financial behavior is purely economic in nature, such as the effort to maintain the immense economic growth experienced by China over the past few decades. In the opening pages of an important book on Chinese finance, Dreher et al. (2022) point to China’s “Going Out” strategy introduced in 1999, where state-owned banks and enterprises were to begin expanding to overseas markets (p. 3). Meanwhile, it is claimed by some Western observers that China is also attempting to shape geopolitics in its favor by influencing or even corrupting countries receiving their finance (e.g., see Dreher et al. 2022, pp. 1-2).

Similarly, the World Bank has suspected economic and political reasons for exhibiting competitive behavior. Economically, it has been argued that the World Bank is under market pressure to lend the money it has available to it (Dreher 2004, p. 447), possibly making it financially threatened by the rising supply from China and incentivized to lower loan conditions and compete. Politically, it has been suggested that stakeholders in the World Bank, like the U.S., may exert pressure on the World Bank to act in ways favorable to these stakeholders (e.g., Clark and Dolan 2021). If this is true, perhaps there is a political aspect to this financial competition as implied above by Blair et al. (2022).

While I am agnostic about why lenders may be competing in Africa, I do argue that this competition is nonetheless politically and economically impactful for borrowing countries. I limit this paper to loans instead of aid because it theoretically seems less likely that recipients are as circumspect about the source of free aid relative to costly loans and debt, although both could be subject to the competitive motives discussed here (e.g., Kilama 2016).

3 Explanation

Returning to the observations presented in Figure 1, I aim to explain why it makes sense for African countries, being in a competitive and consequential financial climate, to frequently juxtapose World Bank and Chinese loans (i.e., the solid line often jumps to match World Bank lending) while consistently borrowing more from the World Bank (i.e., the dotted

line remains elevated). Summarily, I argue that African loan recipients take advantage of lender competition by borrowing from China to induce the World Bank to weaken loan conditionality and increase the size of World Bank loans. Having made World Bank loans more favorable, borrowers then choose to prioritize World Bank loans to mitigate the political and economic drawbacks associated with Chinese debt. I first detail the connection between Chinese finance and World Bank conditions and why African governments may prefer reduced loan conditions from the World Bank before discussing the detriments of Chinese debt, which may lead borrowers to ultimately prefer World Bank finance.

As discussed, there is evidence that the World Bank has reduced its loan conditionality in countries receiving Chinese finance (Hernandez 2017) due to incentives to compete with China. I argue that borrowers should benefit from this supply-side competition that primarily lessens the conditionality of Western finance. Assuming that borrowing countries hold utility over both the amount of money borrowed and the conditions or prior actions required to receive said money, lender competition that increases supply or makes it less costly to borrow (via reduced loan conditions) should increase the utility of borrowing countries. Further, access to other financial supplies (Bearce and Tirone 2010) or fewer loan conditions may compromise a lender's ability to affect change through those conditions (Li 2017; cf. Dreher et al. 2022). If Western lenders stipulate austerity or reforms that liberalize politics or the economy in a borrowing country, as the World Bank or International Monetary Fund (IMF) often do (e.g., see Birchler, Limpach, and Michaelowa 2016), borrowing countries may have a strong incentive to reduce these conditions where possible. And borrowing from a newly introduced lender with deep pockets and orthogonal interests to these Western lenders, such as China around the 2000's, could be an effective outside borrowing option that leads Western lenders to loosen their loan conditions and wallets.

More specifically, the World Bank has numerous lending goals that could be theoretically undermined by Chinese lending. For example, the World Bank has incorporated the United Nation's "2030 Agenda" with its sustainable development goals to lend with a focus on

improving human rights, climate change, and reducing poverty, for example (The World Bank Group 2023b; United Nations 2023). China's lending, while not being necessarily contradictory to these goals, typically prioritizes infrastructure projects that are in some cases orthogonal to such interests (Dreher et al. 2022, p. 198) but beneficial for economic well-being nonetheless (Martorano, Metzger, and Sanfilippo 2020; Dreher et al. 2022). If the goals of the World Bank are implemented through conditions or prior actions on loans, a reduction of these conditions from competition with China may reduce the ability of the World Bank to influence these outcomes in African countries. Borrowing countries, while not being necessarily opposed to these goals, may find it politically costly to implement them if they require austerity or unpopular changes.

To the extent that borrowers prefer greater autonomy over loan money received (i.e., fewer conditions) and that Chinese finance truly reduces the conditionality and subsequently the effectiveness of World Bank finance, it is rational for African governments to borrow from China if they are able. However, there is also evidence that borrowing from China is potentially problematic for loan recipients. For example, it has been demonstrated that Chinese projects are associated with a loss of approval of political incumbents, possibly through citizens being underwhelmed by the impact of Chinese finance and having unmet expectations (Wang, Pearson, and McCauley 2022). Similarly, Chinese finance has been associated with an increase in both more liberal (Blair, Marty, and Roessler 2022) and illiberal (Gehring, Kaplan, and Wong 2022) political values and opinions among citizens, constituting potential public opinion swings that African governments may wish to avoid. There is also evidence that Chinese finance exacerbates corruption (Isaksson and Kotsadam 2018) and increase the probability of conflict (Dreher et al. 2022). While it is unclear if these effects are associated with all levels of borrowing from China, it is reasonable to expect that these adverse effects increase with the amount of Chinese financing incurred. Therefore, if borrowing countries still seek capital and have already borrowed enough from China to weaken World Bank loan conditionality or increase World Bank loan sums, then they may

choose to borrow mainly from the World Bank to capitalize on these reduced conditions and avoid the potentially adverse effects of increasingly borrowing from China.

Thus, I theorize that African countries borrow according to the following equation:

$$Borrowing = WB + ChinaI[c > c_L] + \varepsilon, \quad (1)$$

where the amount of loans (*Borrowing*) that an African country borrows from both the World Bank and China in a given year is a function of some constant amount of borrowing from the World Bank (*WB*)- due to the previous paragraph's discussion of continued borrowing from the World Bank-, some random variation (ε), and borrowing from China (*China*) when World Bank loan conditions (*c*) are above a preferred level of loan conditionality (c_L). While a borrowing country's preferred level of World Bank loan conditionality is unobserved, at a minimum countries may prefer that World Bank loan conditionality be as low as possible conditional on the World Bank still being willing to loan to them. Accordingly, in the remainder of the paper I assume that fewer World Bank loan conditions are better for borrowing countries. Thus, I claim that the theoretical relationship proposed in [equation \(1\)](#) accounts for the observed borrowing behavior observed in [Figure 1](#) and is rational given the benefits loan recipients can incur from lender competition.

3.1 Implications

If it is indeed true that African governments borrow from China to reduce World Bank loan conditionality while borrowing more from the World Bank to mitigate the adverse effects of Chinese debt, I argue that there are at least three testable implications of this theory.

Firstly, the total amount borrowed from both the World Bank and China should increase as World Bank loan conditions decrease, since loan recipients theoretically borrow a constant amount from the World Bank while borrowing more from China to lessen World Bank loan conditions.

Secondly, borrowers should experience more civil conflict as World Bank loan conditions decrease since loan recipients theoretically borrow more from China to reduce these conditions and Chinese debt is associated with increased conflict (Dreher et al. 2022).

Thirdly, lending outcomes prioritized by the World Bank should worsen as countries borrow more from China since, theoretically, countries borrow from China to reduce World Bank loan conditionality and effectiveness.

4 Empirics

4.1 Operationalization

I operationalize these implications and empirically test the resulting hypotheses in the following manner.

Beginning with the first **implication**, that increased borrowing should be associated with lower World Bank loan conditionality, I collected observational data on the main variables of interest: World Bank loans (The World Bank Group 2022), Chinese loans (Custer et al. 2021; Dreher et al. 2022), and World Bank loan conditionality (The World Bank Group 2023a). The corresponding model and hypothesis is:

$$total_{it} = \alpha + \beta conditions_{it} + \gamma z_{it} + \lambda_t + \varepsilon_{it}, \quad (2)$$

where

$$H_1 : \beta \text{ is negative.}$$

In **equation (2)**, the variable $total_{it}$ is the sum of World Bank loans and Chinese loans in a country(i)-year(t), α is a common intercept, β is a common slope parameter relating the variable $conditions_{it}$ - the average number of World Bank loan conditions per project in a country year- to the outcome, γz_{it} is a vector of control variables, λ_t are year effects, and ε_{it}

is a random disturbance term assumed to be independent and identically distributed (IID).

The controls included are proxies for lender motivation (Dreher et al. 2018), development (United Nations Statistics Division 2019), and regime type (Marshall 2018). Lender (or donor) motivations are the dominant explanatory factor in the global finance literature, with it being theorized that donors and lenders give money to countries that vote according to their interests in the United Nation’s General Assembly (UNGA) (e.g., Hoeffler and Outram 2011; Alesina and Dollar 2000) or that are key trading partners (e.g., Younas 2008). I focus on votes in the UNGA, which is more widely used, drawing on replication data from Dreher et al. (2022) to include a control for how closely associated the UNGA voting behavior of recipient countries is with China’s interests. Meanwhile, gross domestic product (GDP) per capita is used to measure a country’s development, since less developed countries could be more inclined to borrow more regardless of World Bank loan conditionality. Lastly, I include a measure of regime type from Polity 5 (Marshall 2018) since it is argued by some authors that autocracies are more likely to receive finance from China (cf. Broich 2017).

In terms of modeling dynamics, I include a temporally lagged dependent variable since it is possible that the amount borrowed in the previous period influences the amount borrowed in the current period. While I theoretically specify that a country decides how to borrow in each period based only on World Bank loan conditionality, it is probable that loan conditionality is persistent. However, I have no ex-ante theoretical reason to include spatially lagged variables since I do not claim that the borrowing behavior of one country affects the World Bank loan conditionality of a another country or that there is interdependence in either loan conditionality or lending behavior. Similarly, I do not theoretically expect that there are significant differences between countries that should affect how they borrow besides the included covariate of World Bank loan conditionality, so I do not include unit dummies or demean the variables (i.e., fixed effects). However, year effects have been included since panel unit root tests suggest that the variables are all at least trendstationary, necessitating some form of detrending but not differencing. A Lagrange Multiplier (LM) test where the

null is that there are no significant differences between countries supports this decision (the null could not be rejected). However, due to the presence of heteroskedasticity within units, as signified by a rejection of the null of a Breusch-Pagan test, I use country-clustered standard errors. Ordinary least squares (OLS) is used to estimate the coefficients of interest due to non-spherical disturbances and apparent exogeneity of covariates (Croissant and Millo 2018; Croissant and Millo 2008; Millo 2017).

For the second **implication**, that the number of conflicts should increase as World Bank loan conditions decrease, I additionally collected observational data on conflict (Gleditsch et al. 2002). The corresponding model and hypothesis is:

$$conflicts_{it} = \alpha + \beta conditions_{it} + \gamma z_{it} + \lambda_t + \varepsilon_{it}, \quad (3)$$

where

$$H_2 : \beta \text{ is negative.}$$

Equation (3) states that the variable $conflicts_{it}$ -the number of conflicts a country i is involved in during year t - is a function of a common intercept α , the common effect (β) of $conditions_{it}$, a vector of controls γz_{it} , year effects λ_t , and a random, IID disturbance term ε_{it} .

The controls included in this model are GDP per capita and Polity, since it is theoretically likely that a country's level of development influences the number of civil conflicts it experiences (Fearon and Laitin 2003) while it has been argued that regime type affects the likelihood for conflict (Maoz and Abdolali 1989). There is no ex-ante theoretical reason that lender motivations would affect conflict beyond the already hypothesized relationship of Chinese finance being associated with increased conflict, so the control of voting with China in the UNGA is no longer specified. Again, panel unit root tests have indicated that the specified variables are at least trendstationary, so year effects have been included instead of

differencing. I include a temporally lagged dependent variable since a country experiencing a conflict in the previous period should influence the likelihood that a country experiences conflict in the current period. I also include several spatially lagged variables since I expect that there could be interdependence in the outcome, where conflict in one country may directly affect conflict in a neighboring country, and in the covariates of development and regime type. If a country neighbors poor or authoritarian countries, it is possible that this influences conflict in that country. **Model 2** is estimated via maximum likelihood (ML) (R. Bivand, Millo, and Piras 2021; R. Bivand and Piras 2015; R. Bivand, Hauke, and Kossowski 2013; R. S. Bivand, Pebesma, and Gomez-Rubio 2013), which more accurately accounts for the simultaneity between the outcome and the spatial lagged, contemporaneous outcome used as a predictor.

For the third **implication**, that World Bank loan goals should worsen as countries borrow more from China due to decreased conditions and thus effectiveness, I further collected data on carbon dioxide (CO²) emissions, the reduction of which (and preserving the climate more generally) is one of the World Bank’s sustainable development goals. The corresponding model and hypothesis is:

$$emissions_{it} = \alpha + \beta chinese\ loans_{it} + \gamma z_{it} + \lambda_t + \varepsilon_{it}, \quad (4)$$

where

$$H_3 : \beta \text{ is positive.}$$

The variable $emissions_{it}$ in **equation (4)** is a function of α , a common intercept, $\beta chinese\ loans_{it}$, the common effect of Chinese loans, γz_{it} , a vector of control variables, year effects λ_t , and ε_{it} , an IID random disturbance.

Year effects are again included since panel unit root tests have indicated that all variables are at least trendstationary. The only control I include in this model is development, or

GDP per capita, as it is most theoretically likely that a country's emissions are related to how economically developed it is. A temporally lagged dependent variable is included in this model since it is theoretically likely that a country's emissions in the current period is influenced by the level of emissions in the last period. Chinese finance is now also temporally lagged as it is possible that receiving Chinese loans in the last period affects World Bank loan conditionality and/or the effectiveness of that conditionality (i.e., affecting emissions) with a lag. A spatially lagged dependent variable is included in the model since it is possible that the emissions of one country influences the emissions of another country, since pollution transcend political borders. For similar reasons, a spatial lag of GDP per capita is included since the emissions of neighboring countries is likely affected by their level of development, in turn affecting the emissions of a given country. However, it is not ex-ante theoretically expected that a neighbor receiving Chinese loans affects the loan conditionality of a given country, thus reducing effectiveness and raising emissions, so a spatial lag of Chinese lending is not included. **Model 3** is similarly estimated via ML due to simultaneity issues posed by the spatial lagged dependent variable.

Each of these models- represented by equations (2), (3), and (4), respectively- were estimated using both the original data, which contained ample missing information, and multiply imputed data (Honaker, King, and Blackwell 2011). I opted for multiple imputation because the main explanatory variable in the majority of these models is World Bank loan conditions, which is missing to a large extent but must exist since World Bank loans have continued to flow to all countries in the sample. There is also no obvious reason why some countries are missing loan conditionality data and others are not, and theoretically conditions should be well predicted by at least the amount of Chinese loans a country receives, making it suitable for multiple imputation (King et al. 2001). Summary statistics of the data employed, including both the original and imputed data, can be found in the appendix.

4.2 Results

4.2.1 Model 1

Table 1 displays the regression results for model 1.

While model 1 estimated with the original data evidences a negative relationship between World Bank loan conditionality (conditions) and the sum of loans borrowed from the World Bank and China (total), in line with H_1 , model 1 estimated with the imputed data does not. In fact, the multiply imputed model suggests a relationship between lender motivations-voting for issues in agreement with China in the UNGA, (lag_cvote)- and other determinants of how countries borrow, such as development or GDP per capita (log_gdp) and regime type or Polity scores (polity). Thus, model 1 suggests that borrowing countries do not choose lenders as theoretically specified, if at all.

	Original	Imputed
(Intercept)	26.343 ** (8.613)	14.333 ** (4.622)
lag_total	0.213 ** (0.081)	0.390 *** (0.035)
conditions	-0.326 * (0.148)	-0.045 (0.098)
lag_cvote	0.552 (9.524)	14.416 ** (5.049)
log_gdp	-0.183 (0.875)	-1.549 *** (0.350)
polity	0.238 (0.159)	0.200 ** (0.077)
N	159	756
R2	0.105	0.263

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table 1: DV: Total borrowing between the World Bank and China in a given country-year.

4.2.2 Model 2

Table 2 displays results for model 2.

The results do not suggest support for H_2 . The relationship between World Bank loan conditions (conditions) and the number of conflicts in a given country-year (conflicts) appears to be 0, contrary to the hypothesized negative and significant relationship if countries borrow more from China to induce lower World Bank loan conditions, increasing conflict. Rather, past conflict (lag_conflicts) and neighbor's development or GDP per capita (lag.log_gdp) are better predictors of conflict.

	Original	Imputed
rho	-0.000 (0.471)	-0.146 (0.080)
(Intercept)	0.115 (0.142)	0.041 (0.082)
lag_conflicts	0.914 *** (0.031)	0.899 *** (0.016)
conditions	0.001 (0.004)	0.004 (0.005)
log_gdp	0.004 (0.018)	-0.005 (0.007)
polity	-0.001 (0.003)	-0.002 (0.002)
lag.log_gdp	-0.004 (0.042)	0.010 * (0.005)
lag.polity	0.003 (0.058)	0.001 (0.013)
N	236	
logLik	21.102	104.434
AIC	1.797	-164.869
m		5.000

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table 2: DV: Number of conflicts in a country-year.

4.2.3 Model 3

Table 3 displays the results for model 3.

H_3 , that there is a positive relationship between a country's CO² emissions and the amount of Chinese loans they borrow (log_loan) since lower conditions from increased Chinese finance should theoretically reduce World Bank loan effectiveness, does not find support in the results. Past emissions (lag_emissions) and development or GDP per capita (log_gdp) are statistically significant predictors of emissions instead.

	Original	Imputed
rho	-0.191 (0.164)	-0.250 (0.174)
(Intercept)	-0.157 *** (0.031)	-0.169 *** (0.036)
lag_emissions	0.819 *** (0.020)	0.824 *** (0.019)
log_cloan	0.001 (0.000)	0.001 (0.000)
lag_log_cloan	0.000 (0.000)	0.000 (0.000)
log_gdp	0.031 *** (0.004)	0.032 *** (0.005)
lag_log_gdp	0.005 (0.007)	0.007 (0.007)
N	628	
logLik	541.325	662.557
AIC	-1040.649	-1283.114
m		5.000

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table 3: DV: CO² emissions for a given country-year.

5 Discussion

There are two possibilities to be acknowledged here. Firstly, the empirics employed could be improved in multiple ways which may show different evidence for the implications. I use multiple proxies, such as **emissions** to proxy for the effectiveness of World Bank loans, which may induce substantial measurement error into my models. I also use imprecise measures for World Bank loan conditionality and measure conflict as the number of conflicts in a particular country-year rather than a probability for onset or escalation, which is more widely used in the literature.

Secondly, it is possible that the theory is wrong. However, given the argument exercised here, it would need to be explained why African borrowing countries do not behave in the expected way. It is possible that regime type plays a larger role than originally theorized, conditioning the ability of countries to borrow from Western institutions like the World Bank given the emphasis these lenders traditionally place on democratization and liberalization in general.

Regardless, there is still much to understand about the interaction between China and the West and the future of countries caught in the middle. If China and the World Bank are to work together to help improve select outcomes in recipient countries, as the soon-to-be president of the World Bank, Ajay Banga, has said (Mai and Buchh 2023), recipient countries may have little to worry about in terms of who to borrow from. But if lenders are to be seen as competing sources of funding with differing geopolitical interests in the counties they lend to, African countries may be subject to undesirable implications of borrowing from certain lenders that may hinder their continued development.

References

- Alesina, Alberto and David Dollar (2000). “Who Gives Foreign Aid to Whom and Why?” *Journal of Economic Growth* 5 (1), pp. 33–63. JSTOR: [40216022](#).
- Bader, Julia (2015). “China, Autocratic Patron? An Empirical Investigation of China as a Factor in Autocratic Survival*”. *International Studies Quarterly* 59 (1), pp. 23–33. DOI: [10.1111/isqu.12148](#).
- Bayar, ”Kifaye Didem”, ”Anthony Tin” Yu To, and ”Ogma Dessirama” Bale (2023). *Slowing Debt Accumulation, Growing Risks: Unveiling the Complexities of Sub-Saharan Africa’s Debt Burdens*. URL: <https://blogs.worldbank.org/opendata/slowing-debt-accumulation-growing-risks-unveiling-complexities-sub-saharan-africas-debt>.
- Bearce, David H. and Daniel C. Tirone (2010). “Foreign Aid Effectiveness and the Strategic Goals of Donor Governments”. *The Journal of Politics* 72 (3), pp. 837–851. DOI: [10.1017/S0022381610000204](#).
- Bergh, Andreas and Anders Kärnä (2021). “Globalization and Populism in Europe”. *Public Choice* 189 (1), pp. 51–70. DOI: [10.1007/s11127-020-00857-8](#).
- Birchler, Kassandra, Sophia Limpach, and Katharina Michaelowa (2016). “Aid Modalities Matter: The Impact of Different World Bank and IMF Programs on Democratization in Developing Countries”. *International Studies Quarterly* 60 (3), pp. 427–439. DOI: [10.1093/isq/sqw014](#).
- Bivand, Roger, Jan Hauke, and Tomasz Kossowski (2013). “Computing the Jacobian in Gaussian spatial autoregressive models: An illustrated comparison of available methods”. *Geographical Analysis* 45 (2), pp. 150–179. DOI: [10.1111/gean.12008](#).
- Bivand, Roger, Giovanni Millo, and Gianfranco Piras (2021). “A Review of Software for Spatial Econometrics in R”. *Mathematics* 9 (11). DOI: [10.3390/math911276](#).

- Bivand, Roger and Gianfranco Piras (2015). “Comparing Implementations of Estimation Methods for Spatial Econometrics”. *Journal of Statistical Software* 63(18), pp. 1–36. DOI: [10.18637/jss.v063.i18](https://doi.org/10.18637/jss.v063.i18).
- Bivand, Roger S., Edzer Pebesma, and Virgilio Gomez-Rubio (2013). *Applied spatial data analysis with R, Second edition*. Springer, NY.
- Blair, Robert A., Robert Marty, and Philip Roessler (2022). “Foreign Aid and Soft Power: Great Power Competition in Africa in the Early Twenty-first Century”. *British Journal of Political Science* 52(3), pp. 1355–1376. DOI: [10.1017/S0007123421000193](https://doi.org/10.1017/S0007123421000193).
- Broich, Tobias (2017). “Do Authoritarian Regimes Receive More Chinese Development Finance than Democratic Ones? Empirical Evidence for Africa”. *China Economic Review* 46, pp. 180–207. DOI: [10.1016/j.chieco.2017.09.006](https://doi.org/10.1016/j.chieco.2017.09.006).
- Clark, Richard and Lindsay R. Dolan (2021). “Pleasing the Principal: U.S. Influence in World Bank Policymaking”. *American Journal of Political Science* 65(1), pp. 36–51. DOI: [10.1111/ajps.12531](https://doi.org/10.1111/ajps.12531).
- Croissant, Yves and Giovanni Millo (2008). “Panel Data Econometrics in R: The plm Package”. *Journal of Statistical Software* 27(2), pp. 1–43. DOI: [10.18637/jss.v027.i02](https://doi.org/10.18637/jss.v027.i02).
- (2018). *Panel Data Econometrics with R*. Wiley.
- Custer, S., A. Dreher, T.B. Elston, A. Fuchs, S. Ghose, J. Lin, A. Malik, B.C. Parks, B. Russell, K. Solomon, A. Strange, M.J. Tierney, K. Walsh, L. Zaleski, and S. Zhang (2021). *Tracking Chinese Development Finance: An Application of AidData’s TUFF 2.0 Methodology*. AidData at William and Mary. URL: <https://www.aiddata.org/data/aiddatas-global-chinese-development-finance-dataset-version-2-0>.
- Dreher, Axel (2004). “A Public Choice Perspective of IMF and World Bank Lending and Conditionality”. *Public Choice* 119(3), pp. 445–464. DOI: [10.1023/B:PUCH.0000033326.19804.52](https://doi.org/10.1023/B:PUCH.0000033326.19804.52).
- Dreher, Axel, Andreas Fuchs, Brad Parks, Austin M Strange, and Michael J Tierney (2018). “Apples and Dragon Fruits: The Determinants of Aid and Other Forms of State Financing

- from China to Africa”. *International Studies Quarterly* 62(1), pp. 182–194. DOI: [10.1093/isq/sqx052](https://doi.org/10.1093/isq/sqx052).
- Dreher, Axel, Andreas Fuchs, Bradley Parks, Austin Strange, and Michael J. Tierney (2021). “Aid, China, and Growth: Evidence from a New Global Development Finance Dataset”. *American Economic Journal: Economic Policy* 13(2), pp. 135–174. DOI: [10.1257/pol.20180631](https://doi.org/10.1257/pol.20180631).
- (2022). *Banking on Beijing: The Aims and Impacts of China’s Overseas Development Program*. Cambridge: Cambridge University Press. DOI: [10.1017/9781108564496](https://doi.org/10.1017/9781108564496).
- Fearon, James D. and David D. Laitin (2003). “Ethnicity, Insurgency, and Civil War”. *American Political Science Review* 97(1), pp. 75–90. DOI: [10.1017/S0003055403000534](https://doi.org/10.1017/S0003055403000534).
- Gehring, Kai, Lennart C. Kaplan, and Melvin H. L. Wong (2022). “China and the World Bank—How Contrasting Development Approaches Affect the Stability of African States”. *Journal of Development Economics* 158, p. 102902. DOI: [10.1016/j.jdeveco.2022.102902](https://doi.org/10.1016/j.jdeveco.2022.102902).
- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Havard Strand (2002). “Armed Conflict 1946-2001: A New Dataset”. *Journal of Peace Research* 39(5), pp. 615–637. DOI: [10.1177/0022343302039005007](https://doi.org/10.1177/0022343302039005007).
- Hernandez, Diego (2017). “Are ‘New’ Donors Challenging World Bank Conditionality?” *World Development* 96, pp. 529–549. DOI: [10.1016/j.worlddev.2017.03.035](https://doi.org/10.1016/j.worlddev.2017.03.035).
- Hoeffler, Anke and Verity Outram (2011). “Need, Merit, or Self-Interest—What Determines the Allocation of Aid?” *Review of Development Economics* 15(2), pp. 237–250. DOI: [10.1111/j.1467-9361.2011.00605.x](https://doi.org/10.1111/j.1467-9361.2011.00605.x).
- Honaker, James, Gary King, and Matthew Blackwell (2011). “Amelia II: A Program for Missing Data”. *Journal of Statistical Software* 45(7), pp. 1–47. DOI: [10.18637/jss.v045.i07](https://doi.org/10.18637/jss.v045.i07).

- Humphrey, Chris and Katharina Michaelowa (2019). “China in Africa: Competition for Traditional Development Finance Institutions?” *World Development* 120, pp. 15–28. DOI: [10.1016/j.worlddev.2019.03.014](https://doi.org/10.1016/j.worlddev.2019.03.014).
- Isaksson, Ann-Sofie and Andreas Kotsadam (2018). “Chinese Aid and Local Corruption”. *Journal of Public Economics* 159, pp. 146–159. DOI: [10.1016/j.jpubeco.2018.01.002](https://doi.org/10.1016/j.jpubeco.2018.01.002).
- Kilama, Eric Gabin (2016). “Evidences on Donors Competition in Africa: Traditional Donors versus China”. *Journal of International Development* 28 (4), pp. 528–551. DOI: [10.1002/jid.3198](https://doi.org/10.1002/jid.3198).
- King, Gary, James Honaker, Anne Joseph, and Kenneth Scheve (2001). “Analyzing Incomplete Political Science Data: An Alternative Algorithm for Multiple Imputation”. *American Political Science Review* 95 (1), pp. 49–69. DOI: [10.1017/S0003055401000235](https://doi.org/10.1017/S0003055401000235).
- Li, Xiaojun (2017). “Does Conditionality Still Work? China’s Development Assistance and Democracy in Africa”. *Chinese Political Science Review* 2 (2), pp. 201–220. DOI: [10.1007/s41111-017-0050-6](https://doi.org/10.1007/s41111-017-0050-6).
- Mai, H. J. and Ziad Buchh (2023). “Separating Climate Change and Inequality Won’t Work, Says Biden’s World Bank Nominee”. *NPR. World*.
- Maoz, Zeev and Nasrin Abdolali (1989). “Regime Types and International Conflict, 1816–1976”. *The Journal of Conflict Resolution* 33 (1), pp. 3–35. JSTOR: [174231](https://www.jstor.org/stable/174231).
- Marshall, Monty G. (2018). *Polity5*. Center for Systemic Peace and Societal-Systems Research Inc. URL: <https://www.systemicpeace.org/inscrdata.html>.
- Martorano, Bruno, Laura Metzger, and Marco Sanfilippo (2020). “Chinese Development Assistance and Household Welfare in Sub-Saharan Africa”. *World Development* 129, p. 104909. DOI: [10.1016/j.worlddev.2020.104909](https://doi.org/10.1016/j.worlddev.2020.104909).
- Millo, Giovanni (2017). “Robust Standard Error Estimators for Panel Models: A Unifying Approach”. *Journal of Statistical Software* 82 (3), pp. 1–27. DOI: [10.18637/jss.v082.i03](https://doi.org/10.18637/jss.v082.i03).

- The World Bank Group (2022). *IBRD Loans and IDA Credits (DOD, Current US\$)* — Data. URL: <https://data.worldbank.org/indicator/DT.DOD.MWBG.CD>.
- (2023a). *Development Policy Financing (DPF)*. URL: <https://www.worldbank.org/en/what-we-do/products-and-services/financing-instruments/development-policy-financing>.
- (2023b). *World Bank Group and The 2030 Agenda*. World Bank. URL: <https://www.worldbank.org/en/programs/sdgs-2030-agenda>.
- United Nations (2023). *Transforming Our World: The 2030 Agenda for Sustainable Development* — Department of Economic and Social Affairs. URL: <https://sdgs.un.org/2030agenda>.
- United Nations Statistics Division (2019). *Per Capita GDP at Current Prices - US Dollars*. data.un.org. URL: <https://data.un.org/Data.aspx?d=SNAAMA&f=grID%3A101%3BcurrID%3AUSD%3BpcFlag%3A1>.
- Wang, Xiaonan, Margaret M. Pearson, and John F. McCauley (2022). “Foreign Direct Investment, Unmet Expectations, and the Prospects of Political Leaders: Evidence from Chinese Investment in Africa”. *The Journal of Politics* 84 (3), pp. 1403–1419. DOI: [10.1086/717849](https://doi.org/10.1086/717849).
- Weiss, Jessica Chen and Jeremy L. Wallace (2021). “Domestic Politics, China’s Rise, and the Future of the Liberal International Order”. *International Organization* 75 (2), pp. 635–664. DOI: [10.1017/S002081832000048X](https://doi.org/10.1017/S002081832000048X).
- Younas, Javed (2008). “Motivation for Bilateral Aid Allocation: Altruism or Trade Benefits”. *European Journal of Political Economy* 24 (3), pp. 661–674. DOI: [10.1016/j.ejpoleco.2008.05.003](https://doi.org/10.1016/j.ejpoleco.2008.05.003).

6 Appendix

	conflicts	polity	emissions	conditions	lag_cvote	log_cloan	log_gdp	total
1	0	0.056	0.114	0.659	0.381	0	0.048	0

Table 4: The fraction of the original data that was missing before multiple imputation, by variable.

	conflicts	polity	emissions	conditions	lag_cvote	log_cloan	log_gdp	total
1	0.3	1.9	0.3	11.1	0.8	7.3	7.2	25.3

Table 5: The average of each variable in the original data across countries. First grouped by country and averaged over years.

	conflicts_imputed	polity_imputed	emissions_imputed	conditions_imputed	lag_cvote_imputed	log_cloan_imputed	log_gdp_imputed	total_imputed
1	0.3	1.9	0.3	10.2	0.8	7.3	7.1	25.3

Table 6: The average of each variable in the imputed data across countries. First grouped by country and averaged over years.

	country	conflicts	polity	emissions	conditions	lag_cvote	log_clean	log_gdp	total
1	Algeria	1.1	2.0	0.8	NA	0.9	2.9	8.4	18.3
2	Angola	0.4	-2.0	0.3	9.0	0.8	7.0	8.1	27.1
3	Benin	0.0	6.9	0.5	12.9	0.9	11.4	6.7	31.4
4	Botswana	0.0	8.0	0.4	NA	0.9	5.8	8.8	23.1
5	Burkina Faso	0.0	1.3	0.2	10.5	0.9	0.0	6.4	20.6
6	Burundi	0.4	4.4	0.1	8.3	0.8	8.2	5.4	27.7
7	Cabo Verde	0.0	10.0	0.3	12.1	0.9	9.4	8.1	28.9
8	Cameroon	0.4	-4.1	0.3	32.0	0.8	10.6	7.2	30.8
9	Central African Republic	0.6	0.2	0.1	11.4	0.8	4.5	6.1	22.7
10	Chad	0.6	-1.9	0.1	16.0	0.6	5.1	6.7	25.4
11	Comoros	0.0	8.6	0.2	7.8	0.9	2.6	7.2	20.5
12	Cote d'Ivoire	0.0	2.0	0.2	9.4	0.8	12.5	7.2	33.2
13	Democratic Republic of the Congo	0.0	3.6	NA	14.0	0.7	6.6	5.9	27.7
14	Djibouti	0.1	2.3	0.2	2.0	0.9	5.3	7.4	24.2
15	Egypt	0.4	-3.5	NA	11.9	0.9	8.0	7.7	30.1
16	Equatorial Guinea	0.0	-6.0	0.7	NA	0.6	5.7	9.6	5.7
17	Eritrea	0.1	-7.0	0.3	NA	0.9	6.5	6.2	26.5
18	Eswatini	0.0	-8.9	0.2	NA	NA	0.0	NA	16.5
19	Ethiopia	1.9	-2.7	0.2	16.0	0.9	11.4	5.9	33.0
20	Gabon	0.0	0.5	0.5	25.0	0.8	11.0	9.0	28.4
21	Gambia	0.0	-4.4	NA	9.3	0.8	1.4	6.6	19.8
22	Ghana	0.0	8.0	0.3	9.0	0.9	11.3	7.4	33.0
23	Guinea	0.0	1.2	0.3	5.5	0.9	7.6	6.5	27.8
24	Guinea-Bissau	0.0	4.8	0.3	8.3	0.8	3.6	6.3	22.4
25	Kenya	0.2	8.1	0.2	NA	0.9	10.7	7.0	32.7
26	Lesotho	0.0	8.0	0.3	7.5	0.9	5.9	6.9	25.5
27	Liberia	0.0	5.7	0.3	7.1	0.8	3.8	5.9	21.1
28	Libya	0.6	-3.5	0.8	NA	0.9	1.4	9.2	1.4
29	Madagascar	0.0	4.9	0.2	9.8	0.8	5.9	6.1	27.0
30	Malawi	0.0	6.0	0.2	10.9	0.8	7.6	6.0	27.5
31	Mali	1.1	5.6	0.3	8.9	0.9	8.9	6.5	29.7
32	Mauritania	0.1	-2.4	0.5	8.0	0.9	6.8	7.3	26.5
33	Mauritius	0.0	10.0	0.4	10.0	0.9	12.9	9.0	32.0
34	Morocco	0.0	-5.0	0.6	10.9	0.9	2.6	7.9	24.5
35	Mozambique	0.2	5.0	0.3	8.0	0.9	13.6	6.2	34.9
36	Namibia	0.0	6.0	0.4	8.5	0.9	7.7	8.5	7.7
37	Niger	0.4	5.0	0.2	10.2	0.9	7.8	6.1	27.9
38	Nigeria	0.9	4.6	0.3	10.7	0.9	10.3	7.6	32.4
39	Republic of the Congo	0.0	-4.0	NA	25.0	0.9	12.8	7.9	31.8
40	Rwanda	0.4	-3.2	0.1	8.9	0.7	7.4	6.3	27.5
41	Sao Tome and Principe	0.0	NA	0.4	8.8	0.7	0.0	7.1	16.8
42	Senegal	0.1	7.2	0.5	12.2	0.9	14.4	7.1	35.4
43	Seychelles	0.0	NA	0.4	7.9	0.6	3.4	9.4	3.4
44	Sierra Leone	0.0	6.6	0.2	9.2	0.8	7.4	6.1	26.7
45	Somalia	0.9	2.3	0.1	NA	0.8	0.0	4.9	20.0
46	South Africa	0.0	9.0	1.3	NA	0.9	14.1	8.7	33.5
47	South Sudan	0.6	0.0	0.1	NA	NA	4.3	6.8	4.3
48	Sudan	1.1	-3.1	0.2	NA	0.9	8.2	7.5	29.2
49	Tanzania	0.0	-0.1	0.2	9.1	0.9	11.3	NA	33.3
50	Togo	0.0	-2.7	0.6	10.0	0.9	11.4	6.4	28.9
51	Tunisia	0.3	1.1	0.7	9.6	0.9	3.5	8.3	25.0
52	Uganda	0.9	-1.2	0.1	11.5	0.8	6.4	6.5	27.7
53	Zambia	0.0	6.3	0.2	11.2	0.9	13.3	7.1	33.6
54	Zimbabwe	0.0	0.3	0.7	NA	0.9	13.9	6.8	34.7

Table 7: The average of each variable in the original data by countries. First averaged across years.

	country	conflicts_imputed	polity_imputed	emissions_imputed	conditions_imputed	lag_cvote_imputed	log_clean_imputed	log_gdp_imputed	total_imputed
1	Algeria	1.1	2.0	0.8	11.7	0.9	2.9	8.4	18.3
2	Angola	0.4	-2.0	0.3	10.6	0.8	7.0	8.1	27.1
3	Benin	0.0	6.9	0.5	11.9	0.9	11.4	6.7	31.4
4	Botswana	0.0	8.0	0.4	11.3	0.9	5.8	8.8	23.1
5	Burkina Faso	0.0	1.3	0.2	10.7	0.9	0.0	6.4	20.6
6	Burundi	0.4	4.4	0.1	9.0	0.8	8.2	5.4	27.7
7	Cabo Verde	0.0	10.0	0.3	11.6	0.9	9.4	8.1	28.9
8	Cameroon	0.4	-4.1	0.3	11.9	0.8	10.6	7.2	30.8
9	Central African Republic	0.6	0.2	0.1	10.6	0.8	4.5	6.1	22.7
10	Chad	0.6	-1.9	0.1	11.3	0.7	5.1	6.7	25.4
11	Comoros	0.0	8.6	0.2	8.2	0.9	2.6	7.2	20.5
12	Cote d'Ivoire	0.0	2.0	0.2	10.0	0.8	12.5	7.2	33.2
13	Democratic Republic of the Congo	0.0	3.6	0.2	11.7	0.7	6.6	5.9	27.7
14	Djibouti	0.1	2.3	0.3	10.3	0.9	5.3	7.4	24.2
15	Egypt	0.4	-3.5	0.4	11.2	0.9	8.0	7.7	30.1
16	Equatorial Guinea	0.0	-6.0	0.7	11.2	0.7	5.7	9.6	5.7
17	Eritrea	0.1	-7.0	0.3	11.1	0.9	6.5	6.2	26.5
18	Eswatini	0.0	-8.9	0.2	10.3	0.8	0.0	6.8	16.5
19	Ethiopia	1.9	-2.7	0.2	11.3	0.9	11.4	5.9	33.0
20	Gabon	0.0	0.5	0.5	12.6	0.8	11.0	9.0	28.4
21	Gambia	0.0	-4.4	0.3	11.4	0.8	1.4	6.6	19.8
22	Ghana	0.0	8.0	0.3	9.2	0.9	11.3	7.4	33.0
23	Guinea	0.0	1.2	0.3	9.0	0.9	7.6	6.5	27.8
24	Guinea-Bissau	0.0	4.8	0.3	9.7	0.8	3.6	6.3	22.4
25	Kenya	0.2	8.1	0.2	8.9	0.9	10.7	7.0	32.7
26	Lesotho	0.0	8.0	0.3	9.3	0.9	5.9	6.9	25.5
27	Liberia	0.0	5.7	0.3	8.4	0.8	3.8	5.9	21.1
28	Libya	0.6	-3.5	0.8	8.7	0.9	1.4	9.2	1.4
29	Madagascar	0.0	4.9	0.2	10.4	0.8	5.9	6.1	27.0
30	Malawi	0.0	6.0	0.2	10.4	0.8	7.6	6.0	27.5
31	Mali	1.1	5.6	0.3	9.2	0.9	8.9	6.5	29.7
32	Mauritania	0.1	-2.4	0.5	11.0	0.9	6.8	7.3	26.5
33	Mauritius	0.0	10.0	0.4	10.4	0.9	12.9	9.0	32.0
34	Morocco	0.0	-5.0	0.6	10.7	0.9	2.6	7.9	24.5
35	Mozambique	0.2	5.0	0.3	8.3	0.9	13.6	6.2	34.9
36	Namibia	0.0	6.0	0.4	5.4	0.9	7.7	8.5	7.7
37	Niger	0.4	5.0	0.2	9.8	0.9	7.8	6.1	27.9
38	Nigeria	0.9	4.6	0.3	10.2	0.9	10.3	7.6	32.4
39	Republic of the Congo	0.0	-4.0	0.5	11.1	0.9	12.8	7.9	31.8
40	Rwanda	0.4	-3.2	0.1	9.2	0.7	7.4	6.3	27.5
41	Sao Tome and Principe	0.0	0.9	0.4	10.4	0.8	0.0	7.1	16.8
42	Senegal	0.1	7.2	0.5	12.0	0.9	14.4	7.1	35.4
43	Seychelles	0.0	-1.4	0.4	8.7	0.6	3.4	9.4	3.4
44	Sierra Leone	0.0	6.6	0.2	9.7	0.8	7.4	6.1	26.7
45	Somalia	0.9	2.2	0.1	11.3	0.8	0.0	4.9	20.0
46	South Africa	0.0	9.0	1.3	12.9	0.9	14.1	8.7	33.5
47	South Sudan	0.6	-0.2	0.2	5.6	0.8	4.3	7.4	4.3
48	Sudan	1.1	-1.1	0.2	8.5	0.9	8.2	7.1	29.2
49	Tanzania	0.0	-0.1	0.2	9.0	0.9	11.3	7.1	33.3
50	Togo	0.0	-2.7	0.6	10.4	0.9	11.4	6.4	28.9
51	Tunisia	0.3	1.1	0.7	10.6	0.9	3.5	8.3	25.0
52	Uganda	0.9	-1.2	0.1	10.9	0.8	6.4	6.5	27.7
53	Zambia	0.0	6.3	0.2	9.9	0.9	13.3	7.1	33.6
54	Zimbabwe	0.0	0.3	0.7	11.2	0.9	13.9	6.8	34.7

Table 8: The average of each variable in the imputed data by countries. First averaged across years.