

## CHAPTER 2 : THE PERILS OF CHINESE FOREIGN AID

Ding-Yi Lai

Wen-Cheng Lin

Wen-Chin Wu

National Chung Cheng University

National Chengchi University

Academia Sinica

*As China has become a major donor of foreign aid to developing and underdeveloped countries, concerns have been raised about the political and economic consequences for recipient countries. Traditionally, OECD countries offer aid to other countries in the form of official development assistance (ODA), which is usually concessional and conditional. Recipient countries are required to adopt policy reforms or adjustments to ensure continued aid. However, China advocates the principle of “non-interference” and often gives aid without hard conditionalities on political or economic reforms. Sometimes China also uses its aid to fulfill its political goal of isolating Taiwan, by demanding that recipient countries sever formal diplomatic relations with Taiwan. In this chapter, we argue that non-conditional Chinese aid leads to detrimental political and social consequences in recipient countries. These include the deterioration of democratic development, and an erosion of the rule of law, freedom of expression and gender equality. Poorer quality education can also result and corruption increase. Our arguments are supported by empirical data collected in 117 countries between 2000 and 2017 and by robust to alternative models addressing the issue of reversed causality. This chapter contributes to the literature on the perils of Chinese foreign aid.*

### 2.1 Introduction

The economic growth of China in the 21st century has made it a rising global power and inspired a burgeoning literature on how China is reshaping the landscape of international relations (Beckley, 2012; Brooks & Wohlforth, 2016). For instance, China launched the Belt and Road Initiative (BRI) and the Asian Infrastructure Investment Bank (AIIB) in the mid-2010s to expand and deepen its economic engagement with other countries (Yu, 2017). The participants in these initiatives include countries that are unsatisfied with the US-led international economic order (Broz et al., 2020). As of the end of 2021 China was the leading trade partner of more than 120 countries and an important aid provider for over 93 emerging-market countries. China also increasingly asserts itself on the international stage (Chang-Liao, 2016; Johnston, 2013), a process that accelerated after the outbreak of the COVID-19 pandemic in 2020 (Martin, 2021).

China’s tremendous economic growth since the 1980s has transformed it from an aid recipient to a major donor. Dreher et al. (2021, p. 139) report that China had officially “committed, implemented, or completed” foreign development projects worth US\$354 billion between 2000 and 2014. The US provided \$394 billion of official financing to foreign countries during the same period. As a result, scholars have paid special attention

to the motives behind China's foreign aid programs and their consequences (Bräutigam, 2011b; Dreher et al., 2021; Strange et al., 2017).

China allocates its aid strategically to fulfill various political goals (Dreher et al., 2018), one of which is the luring of Taiwan's diplomatic partners to switch diplomatic recognition to Beijing. (Rich, 2009). It has a policy of not offering foreign aid to countries that maintain formal diplomatic relations with Taiwan, and it uses foreign aid to convince countries, especially less developed ones, to sever official diplomatic ties with Taiwan (Rich, 2009). Recent examples include the break-off of formal diplomatic relations between Taiwan and seven countries between December 2016 and September 2019, including São Tomé and Príncipe (2016), Panama (2017), the Dominican Republic (2018), Burkina Faso (2018), El Salvador (2018), the Solomon Islands (2019), and Panama (2019). ANNEX 2.1 illustrates that many former diplomatic partners of Taiwan began to receive aid from China after they made the switch.

China's use of foreign aid to fulfill its strategic and political goals has raised a number of questions for scholars and policymakers. OECD countries offer official development assistance (ODA) with the stated aim of promoting the economic development and welfare of developing or underdeveloped countries. Donor countries usually set conditionalities that require recipient countries to implement economic or political reforms. These often address macroeconomic mismanagement, human rights violations and corruption (Molenaers et al., 2015; Svensson, 2000). If the recipient countries fail to meet the requirements, they risk cuts in aid. However, Chinese foreign aid is usually unconditional. (Li, 2017). Some scholars claim that this gives more flexibility to recipient countries to use the aid in more efficient ways (Lagerkvist, 2009). Furthermore, Chinese aid may benefit recipient countries in certain respects, such as short-term economic growth and the reduction of economic inequality (Bluhm et al., 2020; Dreher et al., 2021). Nevertheless, there is evidence that Chinese aid worsens social and political outcomes because it does not meet the real needs of recipients and is designed to serve only China's strategic goals (Naim, 2007). More importantly, the lack of conditions means no accountability (Ping et al., 2022), so political leaders in recipient countries have inadequate incentives to use the aid effectively. It is against this backdrop that we aim to investigate the political consequences of China's foreign aid with the latest "time-series-cross-national" datasets developed by several international teams.

Before proceeding, we would like to note that China has also become a major lender as well as donor. A growing share of Chinese financing comes in the form of commercially oriented debt-based financing rather than foreign aid. There is no substantive evidence that the China-led AIIB, an international financial institution that follows international standards, issues loans with conditions attached (Chen, 2020). However, it is less clear whether projects under the Belt and Road Initiative (BRI), whose loan packages are not

transparent, are offered without conditions. Hurley et al. (2019) have reported that some BRI projects may include conditionalities that can result in “debt traps” or “debt for equity” swaps when borrowers face insolvency. To comprehensively evaluate how China’s financial outflows influence foreign countries we focus on China’s overall development finance portfolio, including aid projects, export credits and debt (Dreher et al., 2022).

In the next section, we discuss the political and social perils of Chinese aid in recipient countries and consider related hypotheses. In the empirical section, we describe our research design and test our hypotheses with empirical data. The final section discusses the implications of our findings and offers concluding remarks.

## **2.2 Arguments**

In this chapter, we argue that China’s aid, due to its frequent lack of transparency and conditionality, tends to have negative consequences in recipient countries. Although many other donors also take account of strategic considerations when allocating aid (Dreher & Fuchs, 2015; Woods, 2008), Beijing’s approach has caused more alarm. As pointed out by Bräutigam (2011a), China’s foreign aid programs are less transparent than ODA from OECD countries and so less accountable (Ping et al., 2022). Some researchers have even labeled its aid as “rogue” for its focus on political considerations (Naim, 2007) even if it can sometimes boost short-term growth (Bluhm et al., 2020; Dreher et al., 2021).

Based on previous studies, we argue that the lack of conditionality attached to Chinese aid leads to decreases in institutional quality in recipient countries, including their democratic development and other institutional sub-components such as rule of law, freedom of expression and gender equality. Such aid can also have negative social consequences on public health, education, and employment. We elaborate our argument below.

### ***2.2.1 Level of Democracy***

In the literature of foreign aid, it is well documented that foreign aid with conditionalities can promote democracy in recipient countries. The key mechanism underlying this aid-democracy nexus is that donors allocate aid with conditionalities that reward democratization and recipient countries respond to this incentive for democratic reform. Without the conditionalities, recipient countries can view foreign aid as a form of lucrative rent and this retards the improvement of government institutions. Using data from 122 countries between 1972 and 2011, Kersting and Bilby (2014) find that aid improves democracy in both the short and long run. Wright further demonstrates that the conditionalities of foreign aid are effective in facilitating democratization in autocracies

when leaders expect to remain in power during a process of political liberalization. Specifically, they need to distribute resources to larger coalitions in exchange for political support. This distribution to a larger coalition increases the prospect of election victories during the process of democratization. As a result, autocrats with larger coalitions have a stronger incentive to democratize their countries in response to aid than those that rely on smaller support groups.

We argue that Chinese aid, due to its lack of conditions for the promotion of democracy, does not facilitate democratization in recipient countries. Furthermore, it can be detrimental to their democratic development because the inflow of Chinese aid as an alternative financial source reduces the incentive of political leaders to implement reforms that improve governance. As reported by Ping et al. (2022), receiving aid from China reduces horizontal accountability between judicial and legislative institutions in recipient countries. Similarly, Li (2017) demonstrates that after China became a major donor to African countries, the inflows of Chinese aid to Sub-Saharan Africa reduced the effects of OECD development aid on democratization. Meanwhile, African countries have not developed higher levels of political freedom after receiving Chinese aid. Based on these insights, we propose the first hypothesis of this chapter:

H1: Countries receiving more aid from China have lower levels of democratic development.

### ***2.2.2 Rule of Law***

According to O'Donnell (2004, p. 33), the minimal meaning of rule of law is “that whatever law exists is written down and publicly promulgated by an appropriate authority before the events meant to be regulated by it and is fairly applied by relevant state institutions including the judiciary.” In other words, the essence of rule of law is that the state apparatus and its agents are subject to a set of legally based rules. As the state is constrained, citizens’ political and economic rights are protected. Accordingly, political institutions that uphold the rule of law and constrain political powers will contribute to economic development because individuals are not disincentivized by potential state appropriation of their economic gains (Haggard et al., 2008; Wright, 2008a).

Previous studies have investigated the effect of foreign aid on rule of law in recipient countries. Although donors can always set conditionalities to ask recipient countries to improve the rule of law, foreign aid programs may fail in this goal because political elites in recipient countries have little incentive to completely implement institutional reforms that undermine vested interests (Erbeznik, 2011). Nevertheless, in a recent study, Dawson and Swiss (2020) analyze the data of 154 countries between 1995 and 2013 and find that foreign aid targeting security and judiciary reforms does increase the likelihood of reforms

that enhance the rule of law. In other words, foreign aid, once properly designed with conditionalities, can enhance the rule of law in recipient countries (Holmes, 1999).

In this article, we argue that Chinese aid undermines rule of law in recipient countries due to its non-conditionality. When receiving aid from China, political leaders have no incentive to reform, but instead disburse Chinese aid to their inner circles to sustain their power. For instance, Dreher et al. (2019) finds that the birth regions of African leaders receive more Chinese aid, especially when elections are approaching and when those elections are strongly contested. Such a bias towards leaders' birth-regions is not detected for foreign aid allocated by the World Bank. In other words, inflows of Chinese aid into developing countries enhances political elites' capacity to evade institutional constraints on their power. Accordingly, we propose the following hypothesis on the relationship between Chinese foreign aid and the rule of law in recipient countries:

H2: Countries receiving more aid from China have less adherence to the rule of law.

### ***2.2.3 Freedom of Expression***

In this article, we argue that Chinese foreign aid inhibits freedom of expression in recipient countries. Existing studies find that the influence of foreign aid on freedom of expression in recipient countries varies depending on the recipient's political system. Using data from 106 recipient countries between 1994 and 2010, Dutta and Williamson (2016) find that aid has a significant positive impact on media freedom in democracies but not in autocracies. According to Dutta and Williamson (2016), foreign aid fails to promote media freedom in authoritarian countries due to a lack of oversight, accountability, and transparency. By contrast, in democratic countries where there are checks and balances, foreign aid tends to promote media freedom through financial support and improved infrastructure. We argue that lack of conditionality makes Chinese aid more harmful than traditional ODA to freedom of expression in autocracies, because recipient countries tend also to comply with China's demands for censorship of news reports that could harm China's international image.

The political system of the recipient country and those of its trading partners are also factors when assessing the impact on freedom of expression. Gams0 (2021) investigates whether the rise of China has promoted media censorship in its trading partners and whether this varies according to their political systems. He argues that countries that trade with China have increased levels of censorship because China wants to reduce negative media coverage. Specifically, China exports technology and provides economic incentives for its trading partners to seek control over their media environments. Using 163 countries

between 2002 and 2014, Gamso (2021) finds that media censorship has spread from China to its trading partners, particularly in democracies that trade closely with China.

Based on these insights, we argue that Chinese aid does not promote freedom of expression in recipient countries, a result of Beijing's desire to reduce negative media coverage about China. In other words, Chinese aid is detrimental to the development of freedom of expression because the inflow of Chinese aid increases China's market power over the recipient country and impedes the flow of any information about dissatisfaction with the Chinese government. Based on these discussions, we propose the following hypothesis:

H3: Countries receiving more aid from China have less freedom of expression.

#### ***2.2.4 Gender Inequality in Politics***

Foreign aid distributed in the form of ODA is sometimes tied to the condition of narrowing gender inequality. For instance, Donno et al. (2021) demonstrated that foreign aid dependence was associated with advances in women's political representation and legal equality and rights under autocracies. Specifically, autocracies enact gender-related legislation at a higher rate than democracies due to pressure from aid donors. Another way to achieve gender equality is to set gender quotas in legislatures. More female representation leads to more legislation on gender equality. Like other ODA projects, the success of foreign aid in improving gender equality via female legislative quotas depends on the donor's conditions and the recipient's willingness to accept the conditions. Edgell (2017) finds that foreign aid in general does not lead to an increase in recipient countries' gender quotas, but foreign aid from the US does. There are two mechanisms to explain this difference. On the one hand, recipient countries use gender quotas as a signal of their willingness to reform and so secure future aid flows. On the other hand, the adoption of gender quotas results from successful foreign aid interventions specifically designed to narrow gender inequality. As a result, countries are more likely to adopt gender quotas the more they rely on US foreign aid.

In this article, we show that Chinese aid does not address gender inequality in recipient countries. Instead, it widens it because political leaders in recipient countries face less pressure to share power with female political elites in their legislatures. Based on this reasoning, we propose the following hypothesis:

H4: Countries receiving more aid from China have higher levels of gender inequality

### ***2.2.5 Corruption***

It is well-documented in the literature that foreign aid can lead to corruption in recipient countries. The key mechanism underlying this aid-corruption nexus is that politicians in recipient countries engage in rent-seeking activities when they receive foreign aid (Svensson, 2000). Specifically, inflows of foreign aid not only relax government budget constraints but also lead to a decrease in the provision of public goods. Politicians have a stronger incentive to embezzle government revenue if they receive more foreign aid. However, some studies show that foreign aid can reduce corruption in recipient countries if the donors set conditionalities on anti-corruption measures. (Asongu, 2012). China's often condition-free aid can therefore be lucrative but "toxic" (Naim, 2007). Therefore, we formulate the following hypothesis:

H5: Countries receiving more aid from China have more corruption.

### ***2.2.6 Social Aspects***

In this chapter we also evaluate the effects of Chinese aid on other social outcomes. We argue that the unconditional nature of Chinese aid means it makes fewer demands on governments to fund public health, education, and to tackle gender inequality. It effectively reduces incentives to divert funds to the social sector. It is widely accepted that "unearned income," such as natural resources or foreign aid, can encourage political leaders to disburse resources to their private patron-client networks. It is because of such moral hazards that conditions are normally attached to foreign aid. Therefore, we propose the following hypotheses

H6a: Receiving aid from China has no effect on life expectancy in recipient countries.

H6b: Receiving aid from China has no effect on death rates in recipient countries.

H7a: Receiving aid from China has no effect on primary school enrollment rates in recipient countries.

H7b: Receiving aid from China has a negative effect on primary school enrollment rates in recipient countries.

Recent studies have shown that Chinese aid can lead to short-term economic growth in recipient countries (Dreher et al., 2021). China's overseas finance is often channeled into infrastructure, which may enhance employment rates. However, such projects require more male laborers than female ones. Accordingly, we propose the following two hypotheses

regarding the effect of Chinese aid on gender inequality in employment in recipient countries.

H8a: Countries receiving more aid from China have higher male employment rates.

H8b: Countries receiving more aid from China have lower female employment rates.

## 2.3 Empirical Analysis

**Data.** To test our hypotheses, we utilize the latest version of the AidData project's Global Chinese Development Finance Dataset and construct a dataset of several important political and economic variables in addition to data on China's foreign aid and investment in 117 countries during the period from 2000 to 2017. In particular, the AidData team has made a tremendous effort to collect detailed data on China's international development projects, encompassing 13,427 projects worth \$843 billion across 165 countries since 2000 (Strange et al., 2017). We would like to note that there are other authoritative sources of data on Chinese aid, such as the one maintained by the SAIS China Africa Research Initiative (SAIS-CARI) based at Johns Hopkins University. Yet, AidData provides the most comprehensive record in that time period (Dreher et al., 2022), so we have opted to use it in our empirical analysis.

**Key Explanatory Variable.** The key independent variable in this article is the total amount of Chinese foreign aid sent to other countries (in constant US dollars). We would also like to note that China's aid refers to the Chinese government's official finance to foreign countries, including aid and debt-financed projects, because China's allocation of foreign aid does not follow the standards of the OECD Development Assistance Committee (DAC).

**Dependent Variables.** In this article, we focus on the political and social consequences of Chinese aid. The data on these variables are taken from the V-Dem project (Coppedge et al., 2021) and other international organizations, such as the World Bank. We describe the operationalization of these variables below.

### 2.3.1 *Level of Democracy*

We use the index of electoral democracy created by the V-Dem project as a measure of democracy. The index interrogates the extent to which the ideal of electoral democracy in its fullest sense is achieved. (Coppedge et al., 2021, p. 43). Specifically, this is a composite measure that investigates how responsive rulers are to citizens in the holding of elections, how freely political and civil society organizations are able to operate, whether or not elections are clean, and whether freedom of expression and media freedom allow the presentation of alternative political views between elections. Based on our discussion in the



previous section, we expect that countries receiving more Chinese aid would have lower levels of democratic development.

### ***2.3.2 Rule of Law***

Our second dependent variable is the rule of law in countries receiving Chinese aid. Again, we adopt the index of rule of law constructed by the V-Dem project. In particular, this measure investigates “to what extent are laws transparently, independently, predictably, impartially, and equally enforced, and to what extent do the actions of government officials comply with the law” (Coppedge et al., 2021, p. 299). As we have set out in the previous section, we expect countries receiving more Chinese aid to have lower adherence to the rule of law.

### ***2.3.3 Freedom of Expression.***

Recent studies have paid special attention to China’s export of authoritarianism to other countries. We hypothesize that China’s foreign aid plays a similar role in endangering freedom of expression in recipient countries. We rely on the V-Dem project’s freedom of expression index to test this hypothesis. This index measures the level of a government’s “respect towards the press and media freedom, the freedom of ordinary people to discuss political matters at home and in the public sphere, as well as freedom of academic and cultural expression” (Coppedge et al., 2021, p. 307).

### ***2.3.4 Gender Inequality in Politics***

To measure gender inequality, we use the V-Dem project’s index on gender quotas in legislatures. It measures whether there is “a national-level gender quota for the lower (or unicameral) chamber of the legislature” (Coppedge et al., 2021, p. 157). There are four levels of gender equality recorded by this variable: (1) No national level gender quota; (2) a statutory gender quota for all parties without sanctions for noncompliance; (3) statutory gender quotas for all parties with weak sanctions for noncompliance; (4) statutory gender quotas for all parties with strong sanctions for noncompliance; (5) reserved seats in the legislature for women. We rescale this 1-5 ordinal variable into a 0-1 scale, with higher values indicative of more female political representation in a country’s lower chamber.

### ***2.3.5 Corruption***

We also investigate whether countries receiving more Chinese aid engage in more corruption. We rely on the V-Dem project's data to measure the extent to which political actors use their position for private or political gain. As discussed in the previous section, politicians are more likely to abuse their power for private gain when foreign aid is allocated without conditionality. As most Chinese foreign aid projects are non-conditional, we expect countries receiving more Chinese to have higher levels of corruption.

### ***2.3.6 Life Expectancy***

We use the index on life expectancy at birth (total years), included in the World Development Indicators (WDI), which indicates "the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life."

### ***2.3.7 Death Rate.***

To measure death rates, we use the WDI index on crude death rates (per 1,000 people), which indicates "the number of deaths occurring during the year per 1,000 population estimated at midyear."

### ***2.3.8 School Enrollment***

We use the WDI index on the enrollment of primary education to investigate the influence of Chinese aid on education. This measure indicates "the ratio of total enrollment, regardless of age, to the population of the age group that should be in primary education."

### ***2.3.9 Employment***

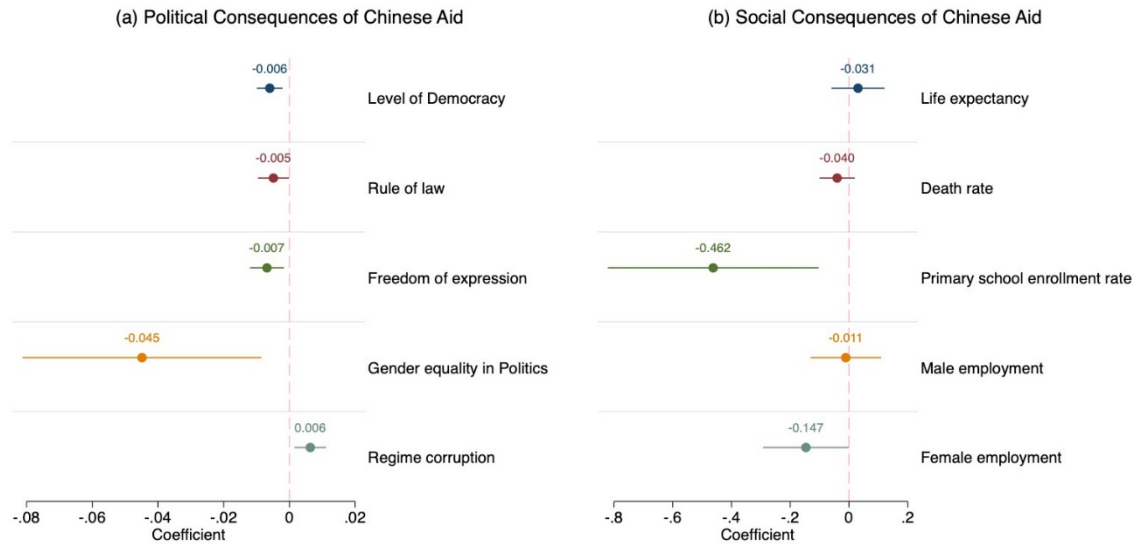
To measure the male employment rate, we use the WDI index on employment to population ratio (15+, male, %), which indicates the proportion of a country's male population that is employed. We also use a similar measure for the female population.

**Estimation Results.** With the variables discussed above, we estimate a series of regression models to investigate the effect of Chinese aid (the key independent variable, IV) on several political and social outcomes (dependent variables, DV) in recipient countries. In these regression models, we estimate coefficients that describe the relationship between Chinese aid and different DVs. A positive coefficient indicates a positive relationship whereas a negative coefficient indicates a negative relationship. We also estimate standard errors of those coefficients, with larger standard errors indicative of larger uncertainty. Allowing that a country's political and social outcomes may not be solely determined by Chinese aid but other factors, such as its political stability and economic development, we include an additional set of IVs in our regression models, such as recipient countries' GDP per capita, economic growth, population size, endowment of natural resources, political stability, and ODA from other countries. We discuss the details of the operationalization of these control variables in ANNEX 2.2.

We report the full results of our estimation in ANNEX 2.3 and ANNEX 2.4. Here we mainly focus on the role of Chinese aid in shaping political and social outcomes in recipient countries. Figure 2.1 summarizes the coefficients of Chinese aid in our regression models in ANNEX 2.3 and ANNEX 2.4 with the different political and social outcomes as the DVs. The solid circles indicate the estimated relationships between Chinese aid and the DVs. A positive coefficient indicates that the relationship between Chinese aid and the DV is positive. The horizontal bar, based on the standard errors of estimated coefficients, indicates the 90% confidence intervals measuring the uncertainty of our estimation. When a horizontal bar of a coefficient overlaps with the dashed vertical line of 0, it means that the relationship between the IV and DV is statistically indistinguishable from 0. If a horizontal bar does not overlap with the dash line, the estimated coefficient can be used to represent the direction and magnitude of the relationship between Chinese aid and the DV.

Specifically, Figure 2.1(a) suggests that countries receiving more aid from China have lower levels of democracy, rule of law, freedom of expression and gender equality in politics. They also have higher levels of regime corruption. All of these relationships are statistically significant (i.e., different from 0) because their 90% confidence intervals do not overlap with the dashed vertical line. Meanwhile, Figure 2.1(b) shows that Chinese aid is negatively related to the enrollment rate of primary education and female employment in recipient countries. However, Chinese aid has no impact on recipient countries' life expectancy, death rates and male employment ratio because their 90% confidence intervals overlap with 0.

**FIGURE 2.1 ESTIMATES FOR THE POLITICAL AND SOCIAL CONSEQUENCES OF CHINESE AID**

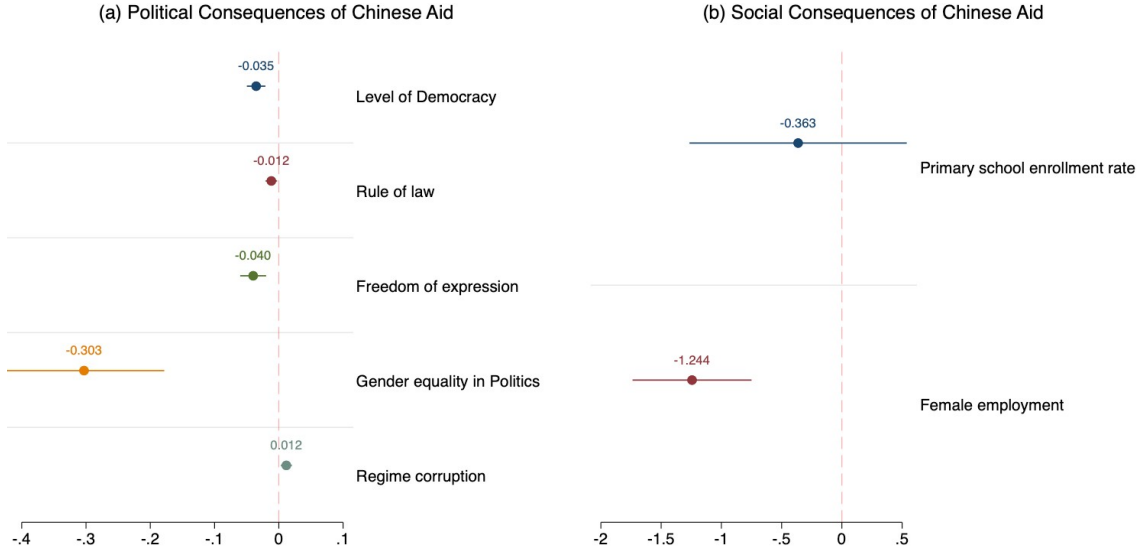


Note: Solid circles indicate the point estimates for the effects of Chinese aid on recipient countries' political and social outcomes in the regression models in ANNEX 2.3 and 2.4. A positive point estimate indicates positive effects of Chinese aid on the corresponding political or social outcome. The horizontal bars indicate the 90% confidence levels measuring the uncertainty of the point estimates. A point estimate with a 90% confidence level overlapping with the dashed vertical line of 0 indicates that the effect of Chinese aid on that political or social outcome is not statistically different from 0.

The model raises the question of cause and effect. How reliably can we say that Chinese aid was the trigger for the outcome found. For instance, it might be the case that countries with a low level of democratic development are more likely to receive Chinese aid. Similarly, corrupt politicians might be more likely to receive aid from China because conditions are less likely to be attached. To guard against this issue of reversed causality in our estimation, we follow previous studies and estimate two-stage instrument-variable (IV) regression models. The estimated results, as fully reported in ANNEX 2.5 and partially illustrated in Figure 2.2, suggest that most of our main findings in Figure 2.1 still hold, except for the model on enrollment rates for primary education.

Based on these results, we conclude that Chinese aid does result in negative political and social consequences. In addition, Chinese aid does not improve public health outcomes, such as life expectancy and death rates. In other words, most of the hypotheses are supported by empirical evidence, except H7a and H7b on primary education and H8a on male employment.

**FIGURE 2.2 ADDRESSING THE ISSUE OF REVERSED CAUSALITY**



Note: Solid circles indicate the point estimates for the effects of Chinese aid on recipient countries' political and social outcomes in the regression models in ANNEX 2.5. A positive point estimate indicates the positive effects of Chinese aid on corresponding political or social outcomes. The horizontal bars indicate 90% confidence levels measuring the uncertainty of the point estimates. A point estimate with a 90% confidence level that overlaps with the dashed vertical line of 0 indicates that the effect of Chinese aid on that political or social outcome is not statistically different from 0.

## 2.4 Discussion and Conclusions

As China has become a major donor of foreign aid, concern has increased about the political and economic consequences in recipient countries. Traditionally, OECD countries offer ODA with concessional and conditional terms to other countries, while China follows the principle of non-interference and offers much of its aid without conditions. Occasionally China also uses aid to pursue its political goal of isolating Taiwan by demanding recipient countries sever formal diplomatic relations with Taiwan.

We have argued that the non-conditionality of Chinese aid entrenches the power of political leaders without contributing to democratic development or accountability. Specifically, Chinese foreign aid can lift budget constraints that inhibit political leaders in the recipient countries. The unconditional nature of Chinese aid enables political elites to shake off restrictions on their power. Furthermore, without anti-corruption conditionality, political elites in recipient countries have a greater incentive to engage in rent-seeking. Recipient countries also tend to cooperate with Beijing's request that they limit any negative news reports against China, thereby inhibiting freedom of expression. Countries taking aid from Beijing also become less dependent on assistance from democratic

countries and so have fewer incentives to improve gender equality in politics. Moreover, China's aid results in a deterioration in other social outcomes, such as primary education enrollment and female employment. In short, receiving Chinese aid results in detrimental political and social consequences in recipient countries.

To test our argument, we took advantage of internationally renowned datasets, including the World Development Indicators, Worldwide Governance Indicators and the AidData and V-Dem projects to empirically investigate the perils of Chinese aid. We conducted two-way fixed-effects regression models to analyze the data of 117 developing and underdeveloped countries that received Chinese aid between 2000 and 2017. The findings are robust to doubts about cause and effect and suggest that Chinese aid leads to deteriorating political and social outcomes. Nevertheless, we found no empirical evidence to suggest that Chinese aid has a substantive effect on public health, life expectancy or death rates.

Although our findings shed light on the emerging literature on Chinese aid, they have some limitations. First, we could not analyze a more extended period due to data limitations because the AidData project on China's overseas development finance only covers the post-2000 period. Second, this chapter regards all Chinese aid as less (or non-) conditional, but some Chinese aid projects do conform more closely to international norms on ODA. Future studies may fill this gap by differentiating such aid from other official flows (OOF) and investigate its effects in recipient countries. Similarly, we do not analyze the heterogeneous effect of Chinese aid in different recipient countries, where different social and political conditions are in play. For instance, Chinese aid may inhibit democratic development in countries that are already less democratic. It may also increase corruption in countries that are already highly corrupt. Although we have addressed the issue of reversed causality in this chapter, future studies may further explore the impact of specific country circumstances.

It has to be highlighted that our empirical analysis also suggests that the political and social effects of Chinese aid are usually the opposite to those of ODA from other donors (see detailed discussions in ANNEX 2.2). Even when other donor countries' strategic objectives are similar to China's, the effects of their aid on recipient countries still differ from China's. It appears to be the lack of transparency and conditionality that leads to such divergent political and social outcomes. One avenue of investigation is to evaluate the impact of aid on countries that cut formal diplomatic relations with Taiwan and then start receiving aid from China. However, there are challenges. First, the data on Chinese foreign aid to third countries only became publicly available after 2000. Second, Taiwan keeps secret the detailed data of its foreign aid. Advanced statistical models are needed to estimate the scale of Taiwan's foreign aid to its diplomatic partners.

The findings in this chapter provide further insights into the context of China's rise. Although some literature suggests that Chinese aid can boost economic development (Dreher et al., 2021), we show that such assistance is not a free lunch but a potential menace. Other donors should also be aware of the potential impact on their own aid when recipient countries also receive assistance from China. ODA donors should try to coordinate their aid disbursements with China in particular countries and encourage Beijing to apply internationalized recognized standards.

## REFERENCES

- Asongu, S. A. (2012). On the Effect of Foreign Aid on Corruption. *Economics Bulletin*, 32(3), 2174–2180.
- Beckley, M. (2012). China's Century? Why America's Edge Will Endure. *International Security*, 36(3), 41–78. [https://doi.org/10.1162/ISEC\\_a\\_00066](https://doi.org/10.1162/ISEC_a_00066)
- Bluhm, R., Fuchs, A., Strange, A., Dreher, A., Parks, B., & Tierney, M. J. (2020). Connective Financing—Chinese Infrastructure Projects and the Diffusion of Economic Activity in Developing Countries (SSRN Scholarly Paper ID 3623679). Social Science Research Network. <https://doi.org/10.2139/ssrn.3623679>
- Bräutigam, D. (2011a). Aid 'With Chinese Characteristics': Chinese Foreign Aid and Development Finance Meet the OECD-DAC Aid Regime. *Journal of International Development*, 23(5), 752–764. <https://doi.org/10.1002/jid.1798>
- Bräutigam, D. (2011b). *The Dragon's Gift: The Real Story of China in Africa*. Oxford University Press.
- Brooks, S. G., & Wohlforth, W. C. (2016). The Rise and Fall of the Great Powers in the Twenty-first Century: China's Rise and the Fate of America's Global Position. *International Security*, 40(3), 7–53. [https://doi.org/10.1162/ISEC\\_a\\_00225](https://doi.org/10.1162/ISEC_a_00225)
- Broz, J. L., Zhang, Z., & Wang, G. (2020). Explaining Foreign Support for China's Global Economic Leadership. *International Organization*, 74(3), 417–452. <https://doi.org/10.1017/S0020818320000120>
- Bun, M. J. G., & Harrison, T. D. (2019). Ols and Iv Estimation of Regression Models Including Endogenous Interaction Terms. *Econometric Reviews*, 38(7), 814–827. <https://doi.org/10.1080/07474938.2018.1427486>
- Chang-Liao, N.-C. (2016). The Sources of China's Assertiveness: The System, Domestic Politics or Leadership Preferences? *International Affairs*, 92(4), 817–833. <https://doi.org/10.1111/1468-2346.12655>
- Chen, I. T.-Y. (2020). *Configuring the Asian Infrastructure Investment Bank: Power, Interests and Status* (1st edition). Routledge.
- Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., Bernhard, M., Cornell, A., Fish, M. S., Gastaldi, L., Gjerløw, H., Glynn, A., Hicken, A., Lührmann, A., Maerz, S. F., Marquardt, K. M., McMann, K. M., Mechkova, V., Paxton, P., ... Ziblatt, D. (2021). V-Dem Codebook v11. *Varieties of Democracy* (V-

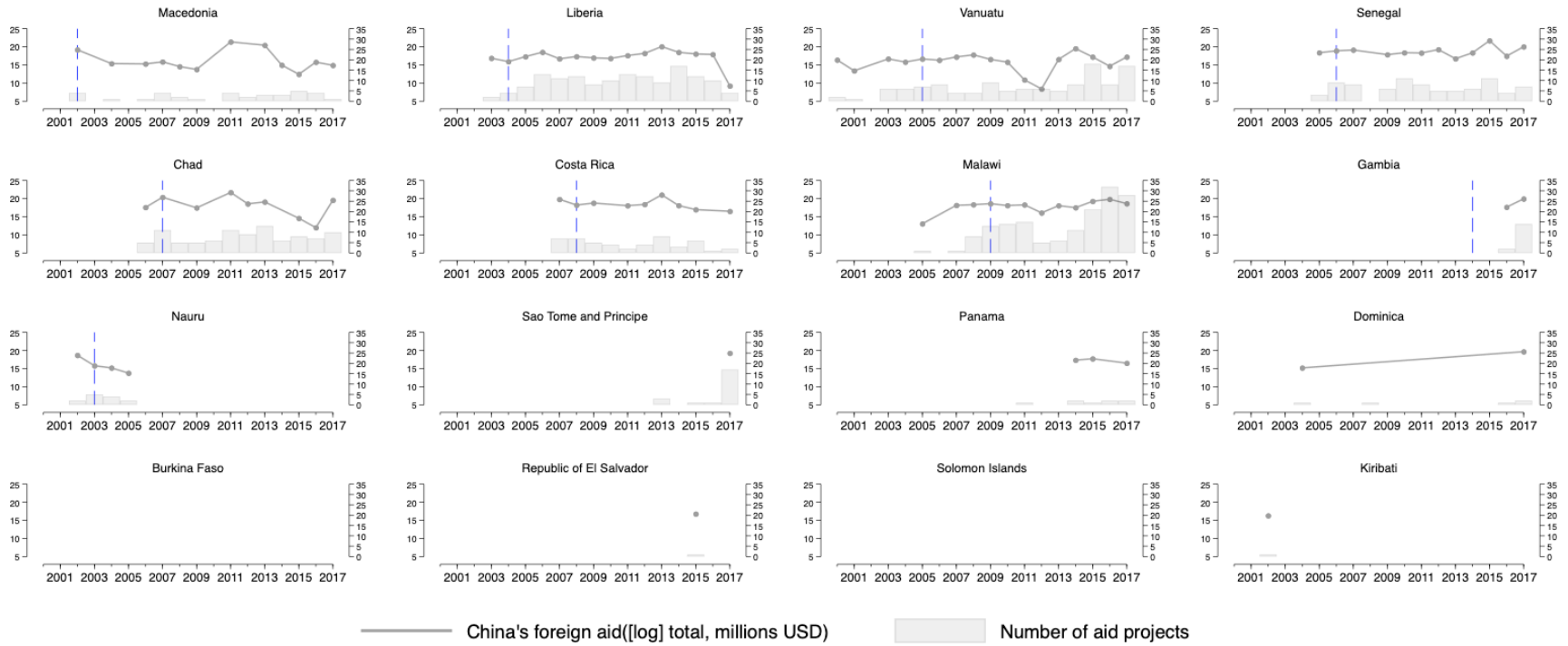
- Dem) Project. <https://doi.org/10.2139/ssrn.3802627>
- Dawson, A., & Swiss, L. (2020). Foreign Aid and the Rule of Law: Institutional Diffusion versus Legal Reach. *The British Journal of Sociology*, 71(4), 761–784. <https://doi.org/10.1111/1468-4446.12752>
- Donno, D., Fox, S., & Kaasik, J. (2021). International Incentives for Women’s Rights in Dictatorships. *Comparative Political Studies*, 00104140211024306. <https://doi.org/10.1177/00104140211024306>
- Dreher, A., & Fuchs, A. (2015). Rogue Aid? An Empirical Analysis of China’s Aid Allocation. *Canadian Journal of Economics/Revue canadienne d’économique*, 48(3), 988–1023. <https://doi.org/10.1111/caje.12166>
- Dreher, A., Fuchs, A., Hodler, R., Parks, B. C., Raschky, P. A., & Tierney, M. J. (2019). African Leaders and the Geography of China’s Foreign Assistance. *Journal of Development Economics*, 140, 44–71. <https://doi.org/10.1016/j.jdeveco.2019.04.003>
- Dreher, A., Fuchs, A., Parks, B., Strange, A. M., & Tierney, M. J. (2018). Apples and Dragon Fruits: The Determinants of Aid and Other Forms of State Financing from China to Africa. *International Studies Quarterly*, 62(1), 182–194. <https://doi.org/10.1093/isq/sqx052>
- Dreher, A., Fuchs, A., Parks, B., Strange, A., & Tierney, M. J. (2021). Aid, China, and Growth: Evidence from a New Global Development Finance Dataset. *American Economic Journal: Economic Policy*, 13(2), 135–174. <https://doi.org/10.1257/pol.20180631>
- Dreher, A., Fuchs, A., Parks, B., Strange, A., & Tierney, M. J. (2022). *Banking on Beijing: The Aims and Impacts of China’s Overseas Development Program* (New edition). Cambridge University Press.
- Dutta, N., & Williamson, C. R. (2016). Can foreign aid free the press? *Journal of Institutional Economics*, 12(3), 603–621. <https://doi.org/10.1017/S1744137415000557>
- Edgell, A. B. (2017). Foreign Aid, Democracy, and Gender Quota Laws. *Democratization*, 24(6), 1103–1141. <https://doi.org/10.1080/13510347.2016.1278209>
- Erbeznik, K. (2011). Money Can’t Buy You Law: The Effects of Foreign Aid on the Rule of Law in Developing Countries. *Indiana Journal of Global Legal Studies*, 18(2), 873–900. <https://doi.org/10.2979/indjglollegstu.18.2.873>
- Gamso, J. (2021). Is China exporting media censorship? China’s rise, media freedoms, and democracy. *European Journal of International Relations*, 27(3), 858–883. <https://doi.org/10.1177/13540661211015722>
- Haggard, S., MacIntyre, A., & Tiede, L. (2008). The Rule of Law and Economic Development. *Annual Review of Political Science*, 11(1), 205–234. <https://doi.org/10.1146/annurev.polisci.10.081205.100244>
- Holmes, S. (1999). Can Foreign Aid Promote the Rule of Law Special Report. *East European Constitutional Review*, 8(4), 68–74.



- Hong, J. Y. (2018). How Natural Resources Affect Authoritarian Leaders' Provision of Public Services: Evidence from China. *The Journal of Politics*, 80(1), 178–194. <https://doi.org/10.1086/694199>
- Hurley, J., Morris, S., & Portelance, G. (2019). Examining the Debt Implications of the Belt and Road Initiative from a Policy Perspective. *Journal of Infrastructure, Policy and Development*, 3(1), 139–175. <https://doi.org/10.24294/jipd.v3i1.1123>
- Johnston, A. I. (2013). How New and Assertive Is China's New Assertiveness? *International Security*, 37(4), 7–48. [https://doi.org/10.1162/ISEC\\_a\\_00115](https://doi.org/10.1162/ISEC_a_00115)
- Keefer, P., & Vlaicu, R. (2008). Democracy, Credibility, and Clientelism. *Journal of Law, Economics, and Organization*, 24(2), 371–406. <https://doi.org/10.1093/jleo/ewm054>
- Kersting, E., & Kilby, C. (2014). Aid and Democracy Redux. *European Economic Review*, 67, 125–143. <https://doi.org/10.1016/j.euroecorev.2014.01.016>
- Lagerkvist, J. (2009). Chinese Eyes on Africa: Authoritarian Flexibility Versus Democratic Governance. *Journal of Contemporary African Studies*, 27(2), 119–134. <https://doi.org/10.1080/02589000902872568>
- Li, X. (2017). Does Conditionality Still Work? China's Development Assistance and Democracy in Africa. *Chinese Political Science Review*, 2(2), 201–220. <https://doi.org/10.1007/s41111-017-0050-6>
- Martin, P. (2021). *China's Civilian Army: The Making of Wolf Warrior Diplomacy*. Oxford University Press.
- Molenaers, N., Dellepiane, S., & Faust, J. (2015). Political Conditionality and Foreign Aid. *World Development*, 75, 2–12. <https://doi.org/10.1016/j.worlddev.2015.04.001>
- Naim, M. (2007). Rogue Aid. *Foreign Policy*, 159, 95–96.
- O'Donnell, G. (2004). The Quality of Democracy: Why the Rule of Law Matters. *Journal of Democracy*, 15(4), 32–46. <https://doi.org/10.1353/jod.2004.0076>
- Ping, S.-N., Wang, Y.-T., & Chang, W.-Y. (2022). The Effects of China's Development Projects on Political Accountability. *British Journal of Political Science*, 52(1), 65–84. <https://doi.org/10.1017/S0007123420000381>
- Rich, T. S. (2009). Status for Sale: Taiwan and the Competition for Diplomatic Recognition. *Issues & Studies*, 159–188.
- Strange, A. M., Dreher, A., Fuchs, A., Parks, B., & Tierney, M. J. (2017). Tracking Underreported Financial Flows: China's Development Finance and the Aid–Conflict Nexus Revisited. *Journal of Conflict Resolution*, 61(5), 935–963. <https://doi.org/10.1177/0022002715604363>
- Svensson, J. (2000). When is Foreign Aid Policy Credible? Aid Dependence and Conditionality. *Journal of Development Economics*, 61(1), 61–84. [https://doi.org/10.1016/S0304-3878\(99\)00061-9](https://doi.org/10.1016/S0304-3878(99)00061-9)
- Woods, N. (2008). Whose Aid? Whose Influence? China, Emerging Donors and the Silent Revolution in Development Assistance. *International Affairs*, 84(6), 1205–1221. <https://doi.org/10.1111/j.1468-2346.2008.00765.x>

- Wright, J. (2008a). Do Authoritarian Institutions Constrain? How Legislatures Affect Economic Growth and Investment. *American Journal of Political Science*, 52(2), 322–343.
- Wright, J. (2008b). To Invest or Insure? How Authoritarian Time Horizons Impact Foreign Aid Effectiveness. *Comparative Political Studies*, 41(7), 971–1000. <https://doi.org/10.1177/0010414007308538>
- Yu, H. (2017). Motivation behind China's 'One Belt, One Road' Initiatives and Establishment of the Asian Infrastructure Investment Bank. *Journal of Contemporary China*, 26(105), 353–368. <https://doi.org/10.1080/10670564.2016.124589>

## ANNEX 2.1 Chinese Aid to Formal Diplomatic Partners of Taiwan, 2000–2017



## ANNEX 2.2 Regression Models for the Role of Chinese Aid in Recipient Countries

**Model Specification:** In this chapter, we use regression models to estimate the effects of Chinese aid on political and social outcomes in recipient countries. In our regression models, we use the amount of China's foreign aid as the key independent variable to explain the dependent variables (i.e., political and social outcomes). As a country's political and social outcomes may also be influenced by other variables, we also include additional variables in our regression models to control for their influences on the dependent variables. The set of control variables include a country's ODA from other countries, GDP per capita, economic growth, population size, endowment of natural resources (as % of GDP) and political stability. The data on these variables are taken from the World Development Indicators collected by the World Bank. The data on political stability is taken from the Worldwide Governance Indicators (also developed by the World Bank). We log-transform GDP per capita and population density to address any skewing of both variables. Including these additional variables in our models partials out their confounding effects on the dependent variables and enables us to better estimate the relationship between Chinese aid and political and social outcomes.

As all of our dependent variables are continuous, we estimate two-way fixed-effects regression models to account for unobserved heterogeneity at the unit and time levels. In other words, our statistical models consider the roles of country and year-specific factors that are not fully captured by the set of independent variables. We cluster standard errors at country level to account for heteroscedasticity. We lag all independent variables for one year to avoid simultaneity between them and the dependent variables.

**Estimation Results.** ANNEXES 2.3 and 2.4 report our estimation results for models with different dependent variables that measure political and social aspects. The numbers in both tables indicate the estimated coefficients and their standard errors (in parentheses). Specifically, a coefficient of a variable indicates the direction and magnitude of the relationship between the variable and the dependent variable. A positive number for a coefficient indicates that the explanatory variable is positively related to the dependent variable. The standard error indicates the level of uncertainty of the estimated coefficient. A larger standard error refers to more uncertainty and makes the estimated coefficient less statistically significant with a larger p-value. Whenever there is a cross or star sign (i.e., † or \*) next to the estimated coefficient, it means that the coefficient is statistically different from 0 with a p-value smaller than 0.1, 0.05, 0.01, or 0.001.

As shown in ANNEX 2.3, the variable *Chinese Aid* is statistically significant at  $p < 0.1$  after we include other control variables. Specifically, a country receiving more Chinese aid would have lower democratic development (Model 1), rule of law (Model 2), freedom

of expression (Model 3), and gender equality (Model 4). Model 5 suggests that a country receiving more Chinese aid would have more corruption. It should be noted that the variable *Other ODA & Aid* is statistically insignificant except in Model 1, where it has a positive sign. In other words, receiving ODA from other countries is less correlated with recipient countries' political outcomes than receiving Chinese aid.

ANNEX 2.4 reports models that investigate the effect of Chinese aid on social aspects. As shown in ANNEX 2.4, the variable *Chinese Aid* is statistically insignificant in Models 6 and 7, suggesting that Chinese aid has no substantive effects on life expectancy and death rates in recipient countries. Model 8 shows that a country receiving more aid from China has lower enrollment rates for primary education. Models 9 and 10 suggest that Chinese aid will have no substantive effect on male employment but is negatively related to female employment. Thus, Chinese aid has no significant effects on public health but negatively impacts education and female employment in recipient countries.

In summary, most of our hypotheses regarding the relationships between Chinese aid and recipient countries' political and social outcomes are supported by the empirical data analyzed in the models in ANNEX 2.3 and 2.4.

Readers may wonder whether our results are driven by reversed causality. For instance, it might be the case that countries with a low level of democratic development are more likely to receive Chinese aid. Similarly, corrupt politicians might be more likely to receive aid from China because OECD countries would impose conditionality on their aid disbursement whereas China would not. To address this issue of endogeneity, we estimate two-stage instrument-variable (IV) regression models. The main intellectual advantage of IV regression models is that researchers can use an "instrument" that is related to the key explanatory variable but unrelated (i.e., exogenous) to the dependent variable. By utilizing such relationships, researchers can use the IV to predict the key explanatory variable (i.e., China's aid) in the first-stage regression, and then use the predicted value in the second-stage regression to estimate its relationship with the outcome variable (i.e. political and social indicators). Because the IV is unrelated to the outcome variable, using the independent variable predicted by the IV in the first-stage regression avoids the issue of reversed causality (Bun & Harrison, 2019).

In this chapter, We follow previous studies and use the interaction of China's annual steel production with the recipient country's probability of receiving Chinese aid (Dreher et al., 2021; Ping et al., 2022). The insight of using this interaction term as an instrument of Chinese aid is twofold. First, China offers aid to other countries based on the surplus of its steel production, because it exports its surplus steel production to build infrastructure in recipient countries. Second, a country's probability of receiving aid from China is also determined by other variables both specific to themselves and exogenous to China' steel

production, such as their own production of crude steel (which is included in the first-stage estimation in our models). As a result, the interaction term between China's steel production and a recipient country's probability of receiving aid from China would be conditionally exogenous to the dependent variables and satisfies the exclusion restriction as a valid instrument in our model specification.

We report the results of instrumental-variable regression models in Table 1.3. Our key findings in ANNEXES 2.3 and 2.4, except that of Model 8 on the enrollment rate of primary education, remain unchanged and statistically significant in the models that address the issue of endogeneity. Please note that the F statistic in the first stage of these models are slightly higher than the conventional critical value (i.e. 10), so our instrument is not a weak one. In other words, results in ANNEXES 2.5 reconfirm that Chinese aid undermines recipient countries' democratic development, rule of law, freedom of expression, gender political equality in the lower chamber and enrollment in primary school. It also induces corruption. It should be noted that *ODA & Aid* from other countries have different signs from *Chinese Aid* on the dependent variables in ANNEX 2.4 (except in Models 14 and 17), suggesting that *Chinese Aid* has the opposite effect on many political and social aspects.

### ANNEX 2.3 Chinese Foreign Aid and Political Outcomes in Recipient Countries

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>
Chinese Aid	-0.006* (0.002)	-0.005† (0.003)	-0.007* (0.003)	-0.045* (0.022)	0.006* (0.003)
Other ODA & Aid	0.027* (0.010)	0.019 (0.012)	0.024 (0.016)	-0.065 (0.085)	-0.018 (0.012)
GDP Per Capita	-0.011 (0.039)	0.027 (0.049)	-0.026 (0.073)	-0.382 (0.387)	-0.041 (0.053)
GDP Growth	0.001 (0.000)	0.000 (0.000)	0.000 (0.000)	0.003 (0.003)	0.000 (0.000)
Population	0.033 (0.075)	-0.091 (0.078)	-0.067 (0.097)	-1.426* (0.700)	0.126 (0.078)
Natural Resources	-0.000 (0.001)	0.000 (0.000)	-0.000 (0.001)	-0.000 (0.007)	-0.000 (0.000)
Political Stability	0.015 (0.018)	-0.006 (0.016)	0.000 (0.023)	0.022 (0.119)	0.015 (0.016)
Constant	-0.080 (0.546)	0.241 (0.553)	0.657 (0.856)	11.052* (4.553)	0.780 (0.577)
Country Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
No. of Countries	117	117	117	117	117
No. of Observations	1,563	1,563	1,563	1,563	1,563

Note: The dependent variables (DV) in Model 1 to 5 are electoral democracy, rule of law, freedom of expression, lower chamber gender quotas, and regime corruption, respectively. Robust standard errors clustered at the country level are reported in parentheses. † p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

## ANNEX 2.4 Chinese Foreign Aid and Social Outcomes in Recipient Countries

	<b>Model 6</b>	<b>Model 7</b>	<b>Model 8</b>	<b>Model 9</b>	<b>Model 10</b>
Chinese Aid	0.031 (0.055)	-0.040 (0.036)	-0.462* (0.216)	-0.011 (0.072)	-0.147† (0.088)
Other ODA & Aid	0.358* (0.153)	-0.278** (0.102)	1.517† (0.848)	-0.158 (0.211)	-0.207 (0.279)
GDP Per Capita	1.023 (1.051)	0.241 (0.713)	-5.745 (5.513)	1.425 (1.278)	-1.744 (1.438)
GDP Growth	0.009 (0.015)	-0.008 (0.010)	0.213* (0.086)	-0.004 (0.013)	0.004 (0.013)
Population	10.209*** (2.456)	-10.141*** (1.908)	25.392† (14.118)	-2.309 (2.731)	-8.552* (3.350)
Natural Resources	0.008 (0.012)	-0.004 (0.008)	-0.070 (0.093)	-0.034 (0.027)	-0.015 (0.027)
Political Stability	0.619* (0.244)	-0.373* (0.175)	1.744 (1.536)	-0.138 (0.324)	0.009 (0.349)
Constant	10.401 (15.423)	52.656*** (11.095)	19.673 (71.553)	70.754*** (16.364)	100.457*** (21.155)
Country Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
No. of Countries	117	117	107	114	114
No. of Observations	1,563	1,563	1,240	1,516	1,516

Note: The dependent variables (DV) in Model 6 to 10 are life expectancy, crude death rate, primary school enrollment rate, male employment to population ratio and female employment to population ratio, respectively. Robust standard errors clustered at the country level are reported in parentheses. † p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.



## ANNEX 2.5 Addressing the Issue of Reversed Causality

	<b>Model 11</b>	<b>Model 12</b>	<b>Model 13</b>	<b>Model 14</b>	<b>Model 15</b>	<b>Model 16</b>	<b>Model 17</b>
Chinese Aid	-0.035*** (0.009)	-0.012* (0.005)	-0.040** (0.012)	-0.303*** (0.076)	0.012* (0.005)	-0.363 (0.548)	-1.244*** (0.300)
Other ODA & Aid	0.029*** (0.005)	0.018*** (0.005)	0.027*** (0.007)	-0.004 (0.049)	-0.019*** (0.005)	1.499** (0.481)	-0.043 (0.186)
GDP Per Capita	-0.011 (0.019)	0.021 (0.021)	-0.033 (0.030)	-0.269 (0.220)	-0.036 (0.023)	-5.782* (2.877)	-1.070 (0.881)
GDP Growth	0.001 (0.001)	0.000 (0.000)	0.000 (0.001)	0.004 (0.005)	-0.000 (0.000)	0.211** (0.065)	0.004 (0.012)
Population	-0.029 (0.043)	-0.120** (0.039)	-0.144** (0.051)	-1.401*** (0.376)	0.143*** (0.043)	25.368*** (6.502)	-8.641*** (1.673)
Natural Resources	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	-0.000 (0.005)	-0.000 (0.000)	-0.070 (0.067)	-0.013 (0.017)
Political Stability	0.022** (0.008)	-0.004 (0.007)	0.007 (0.010)	0.035 (0.068)	0.014* (0.007)	1.746* (0.805)	0.106 (0.223)
Country Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-Stage F	14.41***	14.41***	14.41***	14.41***	14.41***	14.66***	13.99***
No. of Countries	114	114	114	114	114	107	114
No. of Observations	1,542	1,542	1,542	1,542	1,542	1,240	1,516

Note: The dependent variables (DV) in Model 1 to 5 are electoral democracy, rule of law, freedom of expression, lower chamber gender quotas, regime corruption, primary school enrollment rates and female employment to population ratios, respectively. Robust standard errors are reported in brackets. †  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .