China's Foreign Aid: Political Determinants and Economic Effects*

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Abstract: The efficacy of foreign aid, especially when given to satisfy the objectives of the donor country, is highly controversial. I study this question in the context of Chinese infrastructure aid, which has received much attention from policymakers. I build a novel project- and firm-level dataset to identify political determinants of Chinese aid and its economic consequences for recipient countries. I document that when there is local labor unrest in a Chinese prefecture, contracts for Chinese aid projects are allocated to large state-owned firms in the prefecture, and employment by these firms increases. Connections between these firms and other countries mean that China's response to domestic unrest affects the allocation of Chinese aid projects to recipient countries. I exploit the variation in the countries' receipt of aid caused by the timing and spatial variation in local labor unrest in China, together with these connections, to develop an instrument for identifying the causal effects of Chinese aid on recipients. I find large positive effects on GDP, consumption and employment.

Keywords: foreign aid, development finance, political economy, international economics, political stability, labor unrest, Chinese economy.

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1. Introduction

Governments of rich countries have transferred over 3.5 trillion USD in foreign aid to low- and middle-income countries since 1960 (World Bank, 2020). However, the goals and efficacy of foreign aid are highly debated (e.g., Easterly, 2003; Sachs, 2006).[1] Amidst this debate, China has emerged as a new, large and particularly controversial donor.[2] Chinese aid is mostly bilateral and ignores the traditional OECD standards of aid conditionality. Critics argue that Chinese infrastructure aid, which brings goods and labor from China, is mostly intended to serve the domestic needs of the Chinese government and firms rather than to foster economic development in recipient countries. Many therefore worry that Chinese infrastructure aid crowds out local jobs and businesses, is economically inefficient, and undermines Western donors' efforts. In contrast, others argue that Chinese aid relieves financing bottlenecks for infrastructure that may be crucial for economic development. There is currently much speculation, but little empirical evidence, about the determinants of Chinese aid allocation and the consequences of Chinese aid for recipient countries.

This paper addresses this gap in the literature by providing novel and rigorous empirical evidence on the determinants and consequences of Chinese infrastructure aid, which constitutes the majority of Chinese foreign aid. I face two empirical challenges. The first is the lack of data on Chinese aid and the lack of transparency about its allocation process. The Chinese government does not publish systematic and disaggregated aid data, and the *de facto* process behind its allocation is poorly understood. The second is establishing causal identification. Donors may allocate aid based on recipient outcomes, such as income levels or future growth potential, which would result in reverse causality. In addition, both aid and recipient country outcomes may be jointly determined by a third unobserved factor such as the quality of the recipient country's institutions.

The primary goal of this study is to overcome these challenges. In the first part of the paper, I construct a novel dataset at the aid project and contractor level. The granularity of the data provides variation which I use to understand the process and determinants of

[1] Several studies have shown that donors allocate bilateral aid out of political or economic self-interest rather than to alleviate poverty (e.g., Alesina and Dollar, 2000; Kuziemko and Werker, 2006). Existing cross-country studies, focusing on OECD donors, have regularly failed to find evidence of a positive effect of bilateral aid, and in some cases, have even found that such aid can harm recipients (e.g., Nunn and Qian, 2014). Many policymakers and several well-known papers suggest that the efficacy of bilateral aid can be improved if it is conditioned on the recipient country having good institutions and policies (e.g., Burnside and Dollar, 2000; Svensson, 2000).

[2] AidData (2021) estimates that China provided 843 billion dollars in bilateral official finance to low- and middle-income countries in 2000 to 2021, and now significantly outspends the United States. This paper uses the term "foreign aid" to include all bilateral official finance by Chinese government entities to government entities of low- and middle-income countries, including official development assistance (ODA), such as grants and concessional loans, and other official finance (OOF). All main findings in the paper hold when restricting the sample to ODA-like finance. See the Section 2 for more details and discussion.

Chinese aid allocation at a micro level. In the second part of the paper, I use this variation to identify the causal economic effects of Chinese aid on recipient countries.

First, I construct a firm panel dataset which includes the universe of Chinese aid contractors at the local establishment level according to previously unused administrative records of the Chinese government. I link these firms to unofficial data on Chinese aid projects from various sources, such as AidData,[3] as well as administrative firm-level data from China, which includes detailed customs and tax records. The dataset covers over 1,000 projects and hundreds of contractors during 2005 to 2015. To the best of my knowledge, this is the first comprehensive panel dataset that allows for systematically studying the Chinese aid contract allocation process at a micro level.

I use this dataset to identify an important driver of Chinese infrastructure aid. Anecdotal evidence suggests that a key goal of China's foreign aid is to help secure stable employment for Chinese workers by generating acyclical demand for Chinese goods and labor.[4] The Chinese government views stable employment as a key condition to moderate domestic unrest and secure social stability – its paramount policy goal (Wen, 2020; State Council, 2021). Consistent with this goal, China provides foreign aid to recipients in the form of goods and services, typically delivered by Chinese firms.

To investigate whether the Chinese government uses foreign aid projects to help address domestic unrest, I regress the number and financial value of aid contracts allocated to a Chinese contractor in a given year on the intensity of local labor unrest in the contractor's home prefecture, controlling for firm and year fixed effects.[5] I use a sample of large state-owned firms that are under the control of the Chinese central government. The central government is said to use these firms to implement national policy goals, including securing social stability through job provision (Lin, Cai and Li, 1998; Bai, Lu and Tao, 2006). I measure local unrest intensity as the number of unrest events per million inhabitants in a Chinese prefecture, based on two data sources unaffiliated with the Chinese government.[6]

I find that an additional unrest event per million inhabitants in a Chinese prefecture is associated with 0.1 additional aid contracts allocated to each central state-owned firm in the prefecture in the following year, and an increase in the number of workers employed by each of these firms by 3% in the following year on average. The cumulative effect is sizeable. A one standard deviation increase in unrest intensity in Beijing leads to the additional allocation

[3] *AidData's Global Chinese Official Finance Dataset, 2000–2014, Version 1.0.*

[4] For example, Chinese policymakers in 2009 proposed launching a multi-billion dollar "Marshall Plan" to increase developing countries' purchases of Chinese goods to boost China's export economy and prevent worker unrest (Copper, 2016).

[5] A prefecture is typically equivalent to a city. Note that the firm year fixed effects absorb prefecture year fixed effects since I observe firms at the local establishment level.

[6] I discuss the unrest data and potential concerns related to the reporting of unrest events in Section 3.2.

of 5.5 aid projects with a total value of 1.7 billion USD to firms in the prefecture, as much as around 40% of Beijing's yearly public security spending (Zenz, 2018).

For additional evidence, I use a natural language processing algorithm to conduct a systematic text analysis of firms' annual reports. For comparison, I also examine firms that are aid contractors but not controlled by the central government (including private firms). The text evidence is consistent with aid contracts being driven by the state's political objectives. It reveals that central state-owned firms, but not other firms, internalize the state's goal of moderating unrest. I also document that the effect of local unrest on aid contracts is more pronounced in prefectures where the local government is constrained in its ability to address local unrest using domestic public spending. Taken together, the first set of results suggests that the Chinese government uses foreign aid as a policy tool to help address domestic unrest.

I address several potential concerns regarding my preferred interpretation of the results: spurious trends, reverse causality and omitted variables.[7] I address the concerns of spurious trends and reverse causality by conducting a placebo exercise which shows that unrest has no effect on aid contract allocation in the previous year, and by showing that the results are robust to accounting for multiple leads and lags of unrest. I also show that the results are robust to controlling for potentially important covariates of unrest that could explain the increases in aid contracts and employment in central state-owned firms, such as firm-specific or local economic shocks. Finally, I conduct a placebo exercise to address the possible concern that aid contracts are explained by unobservable economic shocks rather than the state's need to moderate unrest. In response to an increase in local unrest, we should expect firms not controlled by the central government to only bid on aid contracts differentially if there are unobserved local economic shocks correlated with local unrest. Reassuringly, lagged unrest has no effect on aid contracts received by aid contractors not controlled by the central government.

In the second part of the paper, I exploit the variation in China's aid allocation studied in the first part of the paper to examine the economic impact of Chinese aid on recipient countries. For this analysis, I use a cross-country panel that includes 136 low- and middle-income countries around the world during the years 2003 to 2018. The main empirical difficulties for evaluating the causal effect of foreign aid are reverse causality and joint determination. To address these empirical challenges, I construct an instrumental variable for the amount of Chinese aid received by a country in a given year.

The instrument leverages two sources of variation. First, as the first part of this paper shows, local unrest in Chinese prefectures predicts the allocation of aid contracts to Chinese central state-owned firms. Second, I rely on the fact that different aid-recipient countries

[7] I also address potential concerns related to the measurement of the aid and unrest variables, as well as several other empirical concerns. See Section 3 for details.

tend to receive aid projects to different degrees and by different sets of Chinese firms. The intuition for the IV first stage is as follows. When there is unrest in a Chinese prefecture, more aid contracts are allocated to central state-owned firms in that prefecture. This aid is then more likely to be directed to countries that have relationships with these firms than to other countries.[8]

Spatial and time variation in local unrest in China, together with these connections between countries and firms in Chinese prefectures, should thus predict the number and financial value of aid projects received by a country in a given year. To capture this variation, I construct the instrument for the amount of aid received by a country in a given year as the sum, across all Chinese prefectures, of lagged local unrest shocks in a prefecture interacted with the probability that the country receives aid projects contracted by central state-owned firms in that prefecture.[9] The IV first and second stages control for country and year fixed effects as well as recipient country population in the baseline specification.

Causal identification of the 2SLS estimates assumes that the instrument affects recipient countries only through the provision of Chinese aid, conditional on the baseline controls. The cross-sectional variation in the connections between countries and firms in Chinese prefectures could be correlated with those countries' outcomes. However, the country fixed effects control for this variation, and the connections need not be exogenous for the instrument to be valid. Following Borusyak and Hull (2020), identification instead relies on the assumption that shocks to local unrest in Chinese prefectures are conditionally orthogonal to shocks to future outcomes of countries connected to those prefectures.[10] The empirical strategy thus exploits the country and time variation in the receipt of Chinese aid caused by the timing and spatial variation in local unrest in Chinese prefectures to estimate the causal effects of Chinese aid on recipients.

A remaining concern is that prefecture-specific shocks to local unrest in Chinese prefectures could be spuriously correlated with future outcomes of countries more connected to those

[8] Qualitative evidence suggests that the firms use their existing relationships with the governments of countries they operate in to influence the allocation of aid contracts. See Section 2.

[9] I measure this probability as the time-invariant fraction of years in the sample in which a country receives any aid projects contracted by central state-owned firms in that prefecture. While my variation is more disaggregated, the idea behind the empirical strategy is similar to Nunn and Qian (2014), which instruments for US food aid received by a country in a given year with the interaction between shocks to yearly US wheat production and the fraction of years in which the country receives any US food aid. The results are qualitatively similar if I use only the fraction of years in the past in which the country received any aid projects contracted by central state-owned firms in a prefecture, rather than the fraction of all years.

[10] The intuition is that the interaction between endogenous and exogenous variables is exogenous, controlling for the uninteracted endogenous variables. Hence, the IV is exogenous if the unrest shocks are conditionally exogenous (Borusyak and Hull, 2020). A further, more subtle concern highlighted by Borusyak and Hull (2020) is that the 2SLS estimates may be biased if expected shocks to unrest differ between prefectures that provide aid more frequently and other prefectures. To address this concern, I re-center the unrest shocks by residualizing them on year and prefecture fixed effects, following Borusyak and Hull (2020). See the paper for more discussion.

prefectures, for example, due to common trade shocks. A second concern is that local unrest in a prefecture may lead not only to the allocation of aid projects to countries connected to the firms in the prefecture but also to a change in aid-unrelated Chinese exports or FDI to these same countries. I conduct several robustness and falsification tests that mitigate concerns for such confounders.

The first stage estimates show that a one standard deviation increase in the instrument increases the number of aid projects committed to a country one year later by 0.249 (25% of a standard deviation) on average. Multiplied by the number of countries, the estimates mean that a one standard deviation increase in the instrument cumulatively leads to an increase in Chinese aid worth 36% of yearly total aid on average. In other words, the IV first stage shows that China's response to domestic unrest strongly influences the allocation of its foreign aid to recipient countries.

The 2SLS estimates show that an additional large-scale infrastructure aid project on average increases GDP per capita by 123 USD (2.4% of the sample mean) and annual GDP growth by 0.5 percentage points three years after commitment.[11] Compared to the average size of aid projects and recipient populations, the estimated coefficients imply that every dollar spent on aid increases recipient country GDP by around 2.2 dollars per year on average after three years. The estimates are comparable in magnitude to recent estimates of the impact of Chinese infrastructure investment on GDP by Dreher et al. (2021). In addition, my 2SLS estimates show that Chinese aid significantly increases government consumption, capital formation, and trade.

The increases in GDP and government consumption do not necessarily translate into an improvement of the economic well-being for the recipient country population. Part of the increases may reflect the direct value of the infrastructure projects. One may also be concerned that the economic benefits of the projects are captured by political elites (e.g., Werker, Ahmed and Cohen, 2009; Dreher et al., 2019) or hurt the local population via negative spillovers on local labor markets (e.g., Zhao, 2014), especially since the aid is driven by the interests of the Chinese government and without policy conditions attached. To investigate this possibility, I examine variables which better reflect household income: household consumption and local employment. I find sizeable positive effects on these outcomes as well. An additional infrastructure aid project increases household consumption by 68 USD per capita on average (2.2% of the sample mean) and decreases the local unemployment rate by 0.4 percentage points on average.

The results are robust to controlling for potential confounders that could be correlated with the instrument and outcomes through channels other than aid, including trade shocks.

[11] The average time between commitment and completion of a Chinese aid project is 2 to 3 years in the data. I show results for other leads and lags in the paper. The average infrastructure aid project in the sample is worth 354 million USD.

I also conduct a number of falsification tests. Reassuringly, the instrument does not predict aid-unrelated exports, FDI, aid by other donors, or lagged outcomes. Finally, I conduct a placebo exercise by randomly permuting shocks to local unrest across Chinese prefectures. The results go against the possibility that the estimated effects of aid on recipient country outcomes are driven by noise.

In sum, the results of this paper show that a significant fraction of China's foreign aid is driven by the Chinese government's political need to moderate domestic unrest. Yet, despite this, Chinese aid has positive effects on recipient countries, in ways that benefit both governments and households. These findings imply that foreign aid allocated according to the domestic political needs of the donor country and without policy conditions attached need not have deleterious effects on recipient populations as previously suggested by some studies and policymakers. This is important for policymakers since selfless aid is politically unrealistic. See the Conclusion for more discussion.

This paper contributes to the large literature on foreign aid. The existing evidence of the impact of aid on recipients, with few exceptions focused on OECD donors, is highly mixed and debated (see the reviews by Easterly, 2003; Qian, 2015).[12] One set of studies posits that the quality of recipients' institutions and policies determine the benefits of aid, motivating policy conditions attached to aid by Western donors (e.g., Burnside and Dollar, 2000; Svensson, 2000).[13] A different set of studies argues that political or economic goals by donor countries drive foreign aid (see Morgenthau, 1962; Werker, 2012),[14] raising the concern that donor interests undermine the potential benefits of aid to the populations of recipient countries. Existing studies have typically stopped at showing country-level evidence consistent with economic or foreign policy goals driving aid allocation (e.g., Alesina and Dollar, 2000; Kuziemko and Werker, 2006), and have regularly failed to find evidence of a positive effect of bilateral aid. In some cases, they have found that such aid is captured by elites and may even harm recipient populations (e.g., Werker, Ahmed and Cohen, 2009; Nunn and Qian, 2014). Consistent with these studies, I find that domestic objectives drive

[12] On the one hand, various studies have found that aid increases economic growth (Hansen and Tarp, 2000; Sachs, 2006; Galiani et al., 2017; Chauvet and Ehrhart, 2018). On the other hand, several studies have doubted such findings (Easterly, Levine and Roodman, 2004; Roodman et al., 2007; Rajan and Subramanian, 2008; Clemens et al., 2012). Many studies find negative effects of foreign aid on recipient countries, for example, corruption and elite capture (Svensson, 2000; Andersen, Johannesen and Rijkers, 2020), a decline in institutional quality (Djankov, Montalvo and Reynal-Querol, 2008; Ahmed et al., 2016), a decrease in export growth (Rajan and Subramanian, 2011), or conflict (Nunn and Qian, 2014; Crost, Felter and Johnston, 2014; Dube and Naidu, 2015).

[13] Several studies find that aid is more (or only) effective in countries with high quality institutions and policies (Boone, 1996; Burnside and Dollar, 2000; Svensson, 2000; Kilby, 2009).

[14] Alesina and Dollar (2000) find that colonial past and political alliances are major determinants of foreign aid. Other goals by donors include foreign policy goals during the Cold War and the promotion of trade (McKinlay and Little, 1977; Schraeder, Hook and Taylor, 1998), garnering support in U.N. voting (Kuziemko and Werker, 2006) or influencing elections in developing countries (Faye and Niehaus, 2012). Dreher et al. (2018) examine the determinants of Chinese aid allocation, including foreign policy and economic goals.

a major donor's foreign aid. However, I find that the political objectives of donors need not undermine the benefits of foreign aid. Given the scarcity of causal evidence of positive effects of foreign aid on recipient population income in the literature, this finding is an important contribution to the debate. My data allow me to exploit more disaggregated variation than previous studies to examine drivers of foreign aid at a micro level and to develop a credible identification strategy to estimate causal effects of aid on recipients. In addition, I contribute to the aid literature by studying China, a prominent donor which has been understudied in this literature. Compared to OECD donors, much less is known about the determinants, allocation, and effects of aid given by China.[15] My findings are consistent with a recent cross-country study by Dreher et al. (2021), which finds that Chinese aid has large positive short-term effects on GDP growth. For plausibly exogenous variation, they use the interaction of a country's probability of receiving any Chinese aid with changes in China's total annual construction materials production and foreign exchange reserves as an instrumental variable for aid. My study differs from theirs in several important ways. First, they do not examine domestic political determinants of Chinese aid, or outcomes beyond GDP growth and its components. Second, I exploit a different and more disaggregated source of variation. Finally, creating a firm-project-level dataset allows me to study the political process underlying aid allocation at a micro rather than country level.

In addition, this paper more generally contributes to research on how governments use economic policy to address political needs. A vast and longstanding literature in economics speaks to governments' responses to domestic economic instability, including monetary policy (Blanchard and Galí, 2010; Galí, 2018), fiscal policy (Blinder, Solow et al., 1973; Barro, 1979; Michaillat and Saez, 2019), trade policy (Melitz and Redding, 2014) and lending to other countries (Horn, Reinhart and Trebesch, 2020).[16] Recent studies find that government employment policies contribute to social stability by moderating domestic political conflict (Blattman and Annan, 2016; Fetzer, 2019; Wen, 2020).[17] My paper shows that foreign aid provides another policy tool for governments in need of securing domestic stability.

The paper proceeds as follows. Section 2 provides background on Chinese foreign aid and the underlying allocation process. Section 3 introduces the data and shows how China uses foreign aid projects to address domestic unrest. Section 4 examines how the Chinese

[15] Recent studies have started examining Chinese aid and lending's scope (Horn, Reinhart and Trebesch, 2019), allocation within recipient countries (Dreher et al., 2019), motivations (Dreher et al., 2018) and impacts (Bluhm et al., 2018; Isaksson and Kotsadam, 2018; Dreher et al., 2021; Guo and Jiang, 2021).

[16] For China specifically, several recent studies show that the Chinese government responds to domestic economic and social instability by increasing domestic infrastructure investment and credit (see, e.g., Cong et al., 2019), public employment and welfare payments (Wen, 2020), fiscal transfers and public security spending (Campante, Chor and Li, 2019), and censorship (Qin, Strömberg and Wu, 2017).

[17] Empirical and theoretical work shows that lower income levels may lead to civil conflict through the opportunity cost channel (e.g., Collier and Hoeffler (1998); Fearon and Laitin (2003); Collier and Hoeffler (2004); Miguel, Satyanath and Sergenti (2004); Dube and Vargas (2013); Bazzi and Blattman (2014).

government's political need to moderate domestic unrest influences its foreign aid allocation to other countries and quantifies the economic impact of Chinese aid on recipients. Section 5 concludes.

2. Background

2.1. Characteristics and Controversy of Chinese Foreign Aid

China has provided record amounts of international development finance to low- and middle-income countries over the last two decades. With 843 billion USD spent across 165 countries between 2000 and 2021, China's yearly spending now significantly exceeds the United States' foreign aid (AidData, 2021).[18] During 2005 to 2015, the period studied in this paper, Chinese foreign aid grew from less than 10 billion USD yearly to around 40 billion USD yearly. In addition, there were over 400,000 Chinese workers in other low- and middle-income countries by the end of 2015 according to the Chinese National Bureau of Statistics.

The majority of Chinese foreign aid in terms of financial value is in the form of bilateral loans for large-scale infrastructure projects such as ports, pipelines, and roads.[19] In contrast to Western foreign aid (which also includes loans), Chinese aid famously does not attach policy conditions (State Council, 2011). However, it typically requires that at least 50% of goods and labor used in the projects are supplied by Chinese firms.[20]

The scope and characteristics of China's aid have attracted much attention from policy-makers and controversy. Its bilateral nature and lack of policy conditions have raised concerns about Chinese aid being captured by elites and undermining Western donors' efforts. China regularly provides aid to countries with poor institutions, such as Angola and Sudan. For example, Western observers have accused China of fueling the War in Darfur by providing

[18] Chinese development finance, meaning all bilateral official finance by Chinese government entities to government entities of low- and middle-income countries, can be categorized as Official Development Assistance (ODA) and Other Official Finance (OOF). However, in contrast to most Western donor countries, China is not a member of the OECD-Development Assistance Committee. China does not adopt the OECD definitions of foreign aid and does not publish disaggregated data. Since the Chinese government generally blurs the distinctions between these different kinds of development finance (Copper, 2016), and they are typically used interchangeably in the public discourse, I use the term "foreign aid" to include both in this paper. All main findings in the paper hold when restricting the sample to aid that meets the OECD criteria for foreign aid (ODA). See Appendix A.1 for definitions and types of Chinese aid and more discussion. See Appendix A.2 for differences between aid provided by China and OECD donors.

[19] The majority of loans is extended by the China Export-Import Bank. There are several other Chinese government entities that extend development finance to other countries. Appendix A.3 gives an overview on the most important (for the purposes of this paper) entities and provides further details.

[20] For example, a concessional loan agreement between the governments of China and Cameroon in 2011 for the construction of 1,500 social housing units stipulates that: 85% of the financing must be used for the fulfillment of a commercial contract with *China Shenyang International Economic & Technical Cooperation Corporation*; preferential visas must be granted for Chinese workers. See https://docs.aiddata.org/ad4/pdfs/how_china_lends/CMR_2011_172.pdf.

military and development assistance to the Sudanese regime during the ongoing conflict (e.g., Farrow and Farrow, 2013). Critics have argued that Chinese aid is mostly intended to serve domestic needs of the Chinese government rather than to alleviate poverty or build capacity in recipient countries (e.g., Naim, 2007).[21] On the other hand, countries with poor institutions often have the most urgent need for aid since they are underdeveloped and have difficulty obtaining funds on international financial markets or from Western donors (Sun, 2014).

Many also worry that China's use of own goods and labor may crowd out local firms and labor in recipient countries (Zhao, 2014; Wegenast et al., 2019). In addition, some argue that China is more likely than traditional donors to fund economically unproductive projects ("White Elephants"), with limited benefits for recipient households. Chinese loans are also said to lead to unsustainable debt levels that may hamper economic development by curtailing the availability of public funds, deterring foreign investment or leading to foreign exchange shortages (see Dreher et al., 2021).[22] On the other hand, developing countries have trillions of dollars in unmet demand for infrastructure (G20, 2021). Chinese aid potentially relieves critical financing bottlenecks for infrastructure projects that are crucial for economic development.[23] Chinese contractors have the scale and expertise to build large-scale infrastructure, and a large supply of skilled workers at low cost compared to contractors from developed countries, which makes them very competitive (e.g., Huang and Chen, 2016).[24]

2.2. The Chinese Aid Allocation Process and Domestic Stability

Anecdotal evidence is consistent with the notion that maintaining domestic stability is an important goal of Chinese foreign aid. For example, Copper (2016) writes the following on the Chinese government's reaction to the 2008/2009 financial crisis:

> "The unemployment rate went up and China experienced greater economic and social instability. Cutting wages helped China adjust, but it also caused further worker unrest. [...] The government approved more infrastructure projects (roads, railroads, etc.) but that still wasn't enough. One remedy was giving still more foreign assistance in the form

[21] Naim (2007) calls China a "rogue donor" which cooperates with dictators solely to further its own national interests, disregarding the needs of developing countries' citizens. Dreher et al. (2018) list access to natural resources, as well as promotion of trade and political alliances as potential goals of Chinese aid.

[22] A widely publicized and controversial example is Hambantota Port in Sri Lanka. The port, built by a Chinese state-owned company and financed through a loan by the Chinese government, remained largely unused and plunged Sri Lanka into a public debt crisis. See https://www.nytimes.com/2018/06/25/world/asia/china-sri-lanka-port.html.

[23] Prominent supporters of Chinese aid like Dambisa Moyo believe that "[China] delivers exactly what we need in terms of delivering economic growth" and that "China can transform Africa" (Moyo, 2011).

[24] The Chinese government claims to provide foreign aid in the form of Chinese goods and workers to "exploit its advantages in technology, equipment and materials, and human resources" to deliver high-quality projects at low cost in a sector in which it has comparative advantages (State Council, 2014, p.7). China's Guiding Principles on foreign aid state that "Chinese experts will live at the standard of local experts" (State Council, 2014).

> of aid. [...] In 2009, the idea was proposed that China launch a 500 billion USD foreign assistance program in the spirit of the Marshall Plan. It was said that financial aid would increase developing nations' purchases of Chinese goods, thus boosting China's export-oriented economy."

The Chinese aid allocation process is consistent with this motive.[25] The Ministry of Commerce (MOFCOM), rather than the Ministry of Foreign Affairs, manages China's aid program (Gu, Chen and Zhang, 2014). MOFCOM's mandate includes formulating policy to foster domestic economic growth and employment stability (Zhang and Smith, 2017). It directly reports to the State Council, the highest organ of the Chinese central government, which formulates the general aid strategy and provides guidelines. Chinese government entities do not disburse loans and other aid directly to recipient countries, but instead pay the (usually Chinese) contractors to deliver goods and services to the recipient countries, in a relatively fast and unbureaucratic process (Brautigam and Hwang, 2020).

The *official* project selection process begins with recipient governments and Chinese embassies passing on aid project requests to MOFCOM, which then invites bids from a pre-approved list of contractors (Gu, Chen and Zhang, 2014). However, qualitative evidence based on interviews suggests that Chinese contractors play a substantial role in the creation and allocation of aid projects (Zhang and Smith, 2017). Large firms owned by the central government in particular have become highly influential in developing countries since China's launch of the "Go Out" policy in the early 2000s, building expertise and relationships in countries in which they regularly implement aid projects. In addition, the local MOFCOM offices rely on local subsidiaries of Chinese companies for practical matters. This allows Chinese firms to create and shape aid projects in recipient countries they operate in.[26] Hence, when firms see the need to contract foreign aid projects, they often successfully lobby the Chinese government to direct funds to countries they typically work with.[27] Figure A.2 provides a simplified summary of this process.

The Chinese central state-owned firms play a dual role: they are profit-oriented and generate revenues for the government, but also help the government pursue its national policy goals. In particular, they are well known to provide social (political) stability in China by

[25] Note that the political process described here corresponds to the period studied in this paper (2005 to 2015). The aid allocation process has changed in some aspects with the creation of China's International Development Cooperation Agency (CIDCA) in 2018 (Lynch, Andersen and Zhu, 2020).

[26] Zhang and Smith (2017) state, based on interviews with Chinese policymakers and company representatives: "The tail of China's aid system often wags the dog, leading to an aid programme dominated by infrastructure projects backed by China Exim [Export-Import] Bank's concessional loan programme. [...] The projects are reverse-engineered to suit the political needs of local politicians and the commercial strategies of Chinese contractors" (p. 2341).

[27] For example, Zhang (2019) writes: "Their access to deep, patient pools of state-backed capital gives PRC central SOEs the ability to build ties with other countries over long time periods, and through projects that other actors might find unprofitable. This sustained engagement allows them to shape the perceptions and incentives of local decision makers in powerful ways."

providing public employment during times of unrest (Lin, Cai and Li, 1998; Bai, Lu and Tao, 2006).[28] The Chinese government views stable employment of Chinese workers as a key condition for domestic social stability – its paramount policy goal (State Council, 2021).[29] However, hiring surplus workers in response to unrest is inefficient, especially since domestic demand may be lower during times of unrest. Other measures to address domestic unrest such as fiscal transfers, domestic infrastructure construction, or violent repression have other costs and potentially decreasing returns.[30]

Foreign aid projects potentially offer a complement or alternative to these measures aimed at addressing unrest: aid projects generate acyclical demand for Chinese goods and labor, allowing Chinese firms to use their surplus labor. In addition, giving foreign aid to other countries likely benefits China in other ways (e.g., by promoting trade and political alliances Dreher et al., 2018) and is typically repayable by recipients. Hence, from the Chinese government's perspective, the net return to giving aid may equal or even exceed the net return to other, more direct measures aimed at securing domestic stability. The central state-owned firms internalize the goals of the Chinese government and thus implement foreign aid projects in response to domestic unrest.

In sum, this discussion motivates the hypothesis that the Chinese central government, through its firms, uses foreign aid to generate employment for Chinese workers in response to domestic unrest. The next section shows empirical evidence consistent with this hypothesis. In Section 4, I then show that central state-owned firms are more likely to direct this aid to countries they typically work with than to other countries, consistent with the aid allocation process described above.

[28] For example, the 2009 annual report by Dongfeng Motor Group Co. states: "The Central Economic Work Conference set the tone for the economy in 2010 to achieve steady growth and adjustments. The main tasks include [...] promoting exports and foreign cooperation, and sparing no effort to maintain social stability." (Dongfeng Motor Group Co. Ltd., 2010). In Section 3, I systematically analyze firm reports to show that central state-owned firms internalize the government's goal of maintaining social stability.

[29] Wen (2020) shows that, in contrast to private firms, Chinese state-owned firms increase employment in response to political unrest. By providing a wage income, workers' opportunity cost of protesting increases, decreasing protest participation (Becker, 1968; Dube and Vargas, 2013; Bazzi and Blattman, 2014). Social stability is particularly essential to the survival of autocratic regimes like China (Svolik, 2012; Gehlbach, Sonin and Svolik, 2016). Despite the autocratic nature of China's regime, labor strikes and other collective action by workers are common in China and regularly involve protests against the government. See https://clb.org.hk/content/what-you-need-know-about-workers-china for background information about labor relations and workers' rights in China. See Wright (2019) for a scholarly review of unrest in China.

[30] Direct transfers may be susceptible to fraud, seen as unfair, and create moral hazard. Domestic infrastructure investment to stimulate employment may lead to unsustainable government debt levels and have decreasing returns, especially given that China already spent vast amounts for this purpose in reaction to the 2008/2009 financial crisis (Cong et al., 2019). Violent repression of unrest by the public security apparatus may further antagonize protesters and the state and increase the risk of an uprising (Acemoglu, Ticchi and Vindigni, 2010).

3. Domestic Unrest and Aid Contract Allocation to Chinese Firms

3.1. Empirical Strategy

This section tests the hypothesis that the Chinese government uses foreign aid to help address domestic labor unrest. The main threats to identification are reverse causality and joint determination of the amount of aid China provides and the levels of unrest it experiences at the country level. For example, foreign aid received by other countries likely increases demand for Chinese products and labor, raising Chinese workers' opportunity cost of engaging in unrest in the future. Alternatively, aid and unrest could be jointly determined by a third factor, such as a global recession that simultaneously increases levels of unrest across China and the total amount of aid China provides to other countries.

To address these challenges, I exploit variation over space and time in local unrest within China and in the allocation of contracts for foreign aid projects to Chinese firms. Specifically, I test whether the Chinese central government allocates foreign aid contracts to firms it owns (i.e., firms that help implement its policy goals) that are located in Chinese prefectures experiencing local labor unrest.[31] I estimate the following specification at the firm-year level:

$$\text{aid}_{f,t} = \sum_{s=-2}^{S=4} (\text{unrest}_{p(f),t-s}\, \beta_s + X'_{f,t-s}\Gamma_s) + \alpha_f + \delta_t + \epsilon_{f,t}, \tag{1}$$

where $\text{aid}_{f,t}$ is the total number or financial value of aid contracts allocated to firm f in year t, and $\text{unrest}_{p(f),t}$ is the number of labor unrest events per million inhabitants in firm f's home prefecture p in year t. $X'_{f,t}$ denotes a vector of control variables at the firm-year or prefecture-year level, which I introduce in Subsection 3.4. α_f and δ_t denote the vectors of firm and year fixed effects (note that firm fixed effects absorb prefecture fixed effects). $\epsilon_{f,t}$ denotes standard errors, which are clustered at the prefecture level in the baseline specification.

The year fixed effects control for changes over time that affect all firms and prefectures similarly. Their inclusion prevents potential omitted variable bias from unobserved joint determinants of the yearly levels of overall Chinese aid and unrest, including macroeconomic shocks such as a global recession.[32] The firm fixed effects control for time-invariant differences across firms and prefectures. Omitted variables that are correlated with both the typical amount of aid contracts allocated to a firm and the number of unrest events in its home prefecture would bias the estimates of β_s. For example, firms in manufacturing hubs may

[31] Firms may be part of larger conglomerates that are active in multiple prefectures. As I explain in Section 3.2, I identify and use as a unit of observation the specific local subsidiary that contracts aid projects.

[32] Some existing studies on the drivers of foreign aid from the donor's perspective examine macroeconomic push factors. For example, Dreher et al. (2021) uses the total yearly availability of construction materials and foreign exchange reserves in China to predict total yearly Chinese aid. This relationship does not have a causal interpretation since there may be joint unobserved determinants of the yearly levels of Chinese aid and these factors, including macroeconomic shocks.

generally experience more labor unrest but also contract more aid projects on average, biasing β_s upwards. The firm fixed effects prevent such bias.

The coefficient of interest is β_{-1}. It captures the effect of local unrest intensity on the amount of aid contracts allocated to central state-owned firms in the prefecture in the next calendar year. I hypothesize that $\beta_{-1} > 0$ and $\beta_s = 0$ for all other s, i.e., that only local unrest lagged by one year, but not at other leads and lags, has an effect on aid contract allocation to local firms. This is because the Chinese aid allocation process is relatively unbureaucratic and can thus react to local unrest rapidly.[33] Nevertheless, I also control for other leads and lags of unrest to deal with potential reverse causality in the presence of serial correlation.[34] Conditional on firm and year fixed effects, as well as other leads and lags of unrest, the amount of foreign aid provided by China should not influence local unrest in the previous year.

I interpret $\beta_{-1} > 0$ as evidence for the Chinese government using foreign aid to help address domestic labor unrest. The remaining threats to this interpretation are firm- or prefecture-specific, time-varying variables that are correlated with both local labor unrest and the amount of aid contracts allocated to local firms. For example, a negative economic shock to a prefecture (relative to the fixed effects) may decrease local marginal wages in the short term, potentially leading to local labor unrest. At the same time, lower wages decrease local firms' labor costs, allowing them to bid more aggressively on aid contracts.[35] Although the allocation of aid contracts to local firms would also have a stabilizing effect on the Chinese economy through this channel, in this case a positive β_{-1} coefficient would have a different interpretation than the Chinese government allocating aid contracts to firms specifically to address local unrest. I address such alternative interpretations in several ways.

First, I control for several potential time-varying covariates of unrest and aid contracts at the prefecture and firm level, including prefecture- and firm-specific economic shocks. Second, I use text analysis on firms' annual reports to systematically show that central state-owned firms, but not other aid contractors (including purely profit-maximizing private firms), internalize the central government's political goal of maintaining social stability. This motivates an important placebo check. In response to an increase in local unrest, firms not owned by the government should only bid on aid contracts more aggressively if there are unobserved local economic shocks that are correlated with both local unrest and aid

[33] Unrest should have no effect on aid allocation in the same calendar year since the aid budget is determined in the previous calendar year.

[34] For example, unrest at $t-2$ may lead to aid allocation at $t-1$, which in turn decreases unrest at $t-1$. If aid at $t-1$ and at t were serially correlated, this would complicate the interpretation of the coefficient of unrest at $t-1$ on aid at t if unrest at $t-2$ is not controlled for. Similarly if unrest at $t-2$ directly affected aid at t and were serially correlated with unrest at $t-1$.

[35] For example, Campante, Chor and Li (2019) show that negative export shocks lead to labor unrest in China. Almunia et al. (forthcoming) show that a drop in domestic demand increases firm exports through price changes.

allocation. If, as hypothesized, political rather than purely economic motives drive aid contract allocation to central state-owned firms in response to unrest, we should see no such effect for other aid contractors. Third, I show corroborating evidence for my proposed interpretation by examining the effects of local unrest on employment, and investigating the role of local government spending. Finally, a battery of robustness checks addresses remaining econometric concerns. Subsection 3.3 shows the results and provides further details.

3.2. Data and Descriptive Statistics

The main dependent variables are the total number and financial value of contracts to deliver aid projects allocated to a firm in a given year. The main explanatory variable is local labor unrest intensity in the firm's prefecture. However, the Chinese government does not publish official, disaggregated data on its foreign aid or on unrest. In addition, existing unofficial databases that collect information on Chinese aid projects do not allow for systematic linking of aid projects to Chinese contractors. This subsection introduces the novel dataset I construct to address these difficulties and provides descriptive statistics.

Project-level aid data. I build a comprehensive project-level dataset on China's outward foreign aid in 2005 to 2015 by combining information from multiple unofficial databases, such as AidData. Appendix B.1 describes the data sources, their methodologies, and how I combine them. The dataset includes all known bilateral official finance by a Chinese government entity to a government entity of a developing country,[36] including ODA-like finance (Official Development Assistance), such as bilateral grants, in-kind donations, zero-interest loans and concessional loans, as well as OOF-like finance (Other Official Finance), such as loans at commercial rates, buyer credits, and export credits.[37]

For each project, the data include the year of commitment,[38] financial value, recipient country, type of finance, sector, funding agency within the Chinese government, and a short description. In addition, I identify the names of the Chinese contractors implementing each project by manually searching the source documents provided by the databases underlying the dataset. The majority of projects in the sample in terms of financial value are supplied by Chinese construction companies. I exclude projects not involving any Chinese contractor

[36] Developing countries include non-high income, non-OECD countries as classified by the World Bank.

[37] I refer to any of these kinds of official finance as "aid". All main findings in the paper hold when restricting the sample to ODA-like aid only. However, since the financing conditions are unknown for a significant share of projects and the Chinese government does not explicitly distinguish between ODA and OOF, the main sample does not impose this restriction. See Appendix A.1 for details and discussion.

[38] This is standard in the literature (e.g., Dreher et al., 2021). Information about the year of disbursement is unavailable for a large share of projects in the data.

from the sample.[39] The resulting dataset includes 1,034 projects in 102 countries committed between 2005 and 2015. The average project is worth 276 million USD (in constant 2014 USD). Tables A.6 and A.5 list the 10 largest ODA- and OOF-like projects and their contractors.

As Figure 1 shows, Chinese aid has grown from less than 10 billion USD yearly in 2005 to almost 40 billion USD yearly in 2015 (excluding aid not supplied by Chinese firms), matching U.S. and exceeding World Bank finance in scale in 2015.[40] Figure 2 shows that Chinese contractors supply Chinese aid projects all over the world. The largest share of aid projects goes to Africa (45%) and Asia (35%), with the remaining projects going to Latin America (11%), the Middle East (5%), and Eastern Europe (4%). Angola, Ethiopia, and Pakistan are the largest recipients. The majority of projects are in the energy and transport sectors (see Figure A.3). Nearly all aid projects implemented by Chinese firms are in the form of hard infrastructure, including pipelines, power plants, transmission lines, railroads, highways, ports, government buildings, sports stadiums, telecommunication networks, schools, and hospitals. The Export-Import Bank of China funds the majority of aid projects. Figures A.4 to A.11 provide a detailed breakdown of Chinese aid by type of finance and year, sector, funding agency, as well as geographical region.[41]

Firm-level data. There exist no comprehensive, granular data about which firms implement which Chinese aid projects. While some of the existing databases provide names of contractors implementing a project, the names are typically not harmonized and only identify the firm group (conglomerate) rather than the specific firm that implements the project. This has so far prevented researchers from linking data on aid projects to firms and conducting systematic analysis at the firm level. To analyze the impact of local unrest on the allocation of aid projects at the firm level, identifying the local firm rather than the conglomerate is especially important. In addition, not only the *actual* contractors of projects but also the pool of *potential* contractors are of interest.

To address these difficulties, I construct a firm-year level dataset by 1) identifying the

[39] While I do not systematically collect information about projects not involving Chinese contractors, a comparison using *AidData's Global Chinese Official Finance Dataset* indicates that Chinese firms implement around 80% of the financial value of Chinese aid projects. Aid projects not in the sample are typically small and are supplied by foreign firms or not supplied by any known firm (e.g., in-kind donations, stipends, and debt relief).

[40] U.S. official finance includes all finance reported by the United States to the OECD DAC. I do not have separate data on United States aid supplied by U.S. firms. World Bank finance includes all projects in the World Bank Major Contracts Database. The figure includes all finance to low- and middle-income countries, excluding China.

[41] 48% of all projects are classified as ODA-like (e.g., grants and concessional loans), 33% as OOF-like (e.g., loans at LIBOR rates), and 19% as vague (cannot be clearly classified using the available information). OOF-like projects are on average larger in terms of contract value (445 million USD) compared to ODA-like projects (119 million USD).

set of potential aid contractors at the subsidiary level from archival administrative records by the Ministry of Commerce, 2) linking contractors to administrative firm-level datasets from China, including detailed customs and tax records, and 3) linking contractors to the aid projects described above. Appendix B.2 provides details. The result is an unbalanced yearly panel of the universe of Chinese firms licensed by the government to contract aid projects.

The main outcome variable of interest is the number of aid contracts allocated to a firm in a year. I also calculate the financial value of contracts allocated to a firm in a year. However, this is not my preferred measure since it is more likely to suffer from measurement error than the number of contracts and is missing for 10% of all projects.[42] In addition, I use tax data to calculate firm employment as an additional outcome variable, as well as firm-level control variables (see Subsection 3.4).

The panel includes 1,290 firms of which 496 are owned by the central government. 122 central state-owned firms and 103 other firms supply Chinese aid projects at least once during the sample period. Table A.7 provides descriptive statistics. The average central state-owned (other) firm is awarded 0.15 (0.05) aid contracts or contracts worth 46 million USD (3 million USD) per year.[43] On average, central state-owned (other) firms have 1,408 (1,152) employees, 100 million USD (56 million USD) in fixed assets, 540 million USD (313 million USD) in yearly operating income, and 128 million USD (81 million USD) in exports. The firms in the sample are located in 150 different prefectures spread across China (see Figures A.12 and A.13).

Unrest data. I measure local unrest intensity as the yearly number of labor unrest events per million inhabitants in a prefecture.[44] To construct this variable, I combine data on strikes and worker protests across China from two unofficial sources: *China Strikes*, covering 2004 to 2011,[45] and the *China Labour Bulletin* (CLB), covering 2012 to 2014.[46] These data are crowd-sourced from worker reports as well as traditional media and online sources. The data have been used to study trends in worker actions by foreign media and economists such as Campante, Chor and Li (2019) and Qin, Strömberg and Wu (2019). They contain detailed information about each unrest event, including the date, location (prefecture), sector, and

[42] I calculate the financial value of a contract as the financial value of the entire project, divided by the number of Chinese firms involved in the project. I do not observe the confidential details of the actual contracts underlying the projects, such as the exact payment made to each firm or subcontracting.

[43] Note that since many firms get no contracts in some years or no contracts ever, conditional on getting at least one contract, the value of yearly contracts awarded to a central state-owned (other) firm is 585 million USD (125 million USD).

[44] I use the aged 15 to 64 population from the 2005 census in the denominator. All results are robust to controlling for yearly population (results available on request). Reliable information on the number of participants is not available for most unrest events in the data.

[45] The *China Strikes* data are provided by Manfred Elfstrom. See https://chinastrikes.crowdmap.com/

[46] CLB is a non-governmental organization based in Hong Kong. The CLB data generally follow the same scope and method as *China Strikes*. See https://maps.clb.org.hk/.

a short description. Appendix B.5 provides examples of unrest events in the sample and further details.

There are 7,646 reported unrest events during the period I study. On average, there are 0.2 yearly unrest events per million inhabitants in a prefecture. Figure 3 shows a choropleth map of average unrest intensity for each prefecture in 2004 to 2014. Figure A.15 plots all unrest events in the sample. Unrest events take place in almost all of China's densely populated regions and are concentrated in manufacturing hubs such as the Pearl River Delta. Figure A.14 shows an increase in the number of reported unrest events over time. The majority of protests took place in the manufacturing (30%), construction (29%), public transport (20%), and service (11%) sectors.

One potential concern with the unrest data is reporting bias. Both *China Strikes* and *CLB* acknowledge that they cannot record all unrest events and reporting may differ across prefectures. In addition, the increasing availability of the internet and other media may have led to more reporting of unrest events over time. For the purposes of this paper, such concerns are likely not major for several reasons: First, I include firm (prefecture) and year fixed effects in the analysis to deal with classical measurement error. Second, selective reporting could only lead to bias in the direction of my results if it were systematically correlated with the allocation of aid contracts, which is implausible. Third, as Campante, Chor and Li (2019) show, the *CLB* data are highly correlated with official records on the number of labor dispute cases submitted to the government for mediation or arbitration, as reported in the China Labor Statistical Yearbooks published by the Ministry of Human Resources and Social Security.

Other micro data. I use micro data from several other sources to construct variables for complementary analyses and robustness checks, including firms' political connections and prefecture-level characteristics. I describe these variables in Appendix B.6. Table A.8 shows prefecture-level descriptive statistics.

3.3. Results: Domestic Unrest and Aid Contract Allocation to Chinese Firms

The first set of results, discussed below, is consistent with the Chinese government using foreign aid as a policy tool for creating jobs for Chinese workers and providing domestic political stability. The results show that the government allocates foreign aid contracts to firms it owns in prefectures experiencing labor unrest. These firms increase employment in response to local unrest, and systematic text analysis of firm reports shows that they internalize the government's political need to maintain social stability. Similar effects are not present in aid contractors not owned by the central government. The results are driven by

prefectures where the local government is constrained in its ability to address local unrest using domestic public spending.

Figures 4 and A.9 Column (1) show the estimated coefficients from Equation (1). One additional unrest event per million inhabitants in a prefecture, lagged by one year, is associated with the allocation of 0.1 more aid contracts to each central state-owned firm in the prefecture on average, controlling for firm and year fixed effects as well as other leads and lags of unrest. The coefficient is statistically significant at the 5% level. As expected, the coefficients on other leads and lags of unrest are small and statistically insignificant.

To interpret the magnitude of the estimated coefficient of interest, note that a one standard deviation increase in unrest, lagged by one year, on average increases the number of contracts allocated to central state-owned firms by 23% of its mean.[47] Cumulatively, this is a large effect. For example, a back-of-the-envelope calculation shows that a one standard deviation increase in yearly unrest in Beijing (around 7 unrest events) is associated with the allocation of 5.5 additional aid contracts with a total value of 1.76 billion USD to central state-owned firms in the prefecture. This is as much as around 40% of the amount Beijing spends on public security in a year (Zenz, 2018).[48]

The specification in Equation (1), which includes several leads and lags of unrest, is restrictive because it limits the sample to a subset of consecutive years in the data. To exploit the full data for all years and to maximize statistical power, I keep only unrest lagged by one year in the specifications for the results that follow. The point estimate of the effect of unrest, lagged by one year, on aid contract allocation is unaffected by whether other leads and lags are included in the specification or not.[49]

Table 1 shows the effect of unrest, lagged by one year, on aid contract allocation for different measures of aid.[50] Column (1) is consistent with Figure 4. Columns (2) and (3) show the results for ODA-like (more concessional) and OOF-like (less concessional) aid only. The effects are similar for both kinds of aid relative to their means. Column (4) uses the log of one plus the total financial value of contracts allocated to a firm in a year as the outcome variable.[51] A one standard deviation increase in unrest (0.33 events per million inhabitants) on average increases the value of contracts allocated to central state-owned firms by 0.21 log points (24%). Again, the estimates for ODA-like and OOF-like projects are qualitatively similar and not statistically distinguishable from each other. All coefficients in Table 1

[47] One standard deviation in unrest is 0.33 events per million inhabitants. The mean number of aid contracts allocated to a central state-owned firm in a year is 0.154. $0.330 \cdot 0.109 \div 0.154 = 0.234$.

[48] The average aid contract supplied by a central state-owned firm in Beijing is worth 304 million USD. There are 161 central state-owned firms in Beijing. $0.330 \cdot 0.109 \cdot 161 \cdot 0.304 = 1.76$.

[49] See Table A.9. Results including all leads and lags for other specifications are available on request.

[50] Figures A.16 and A.17 show binned scatter plots for the corresponding results.

[51] Estimates using the inverse hyperbolic sine instead of the log function are very similar (results available on request).

are statistically significant at the 1% or 5% level, except Column (5) which is statistically significant at the 10% level.

3.4. Corroborating Evidence and Robustness

Robustness to controls. To address the concern that local economic shocks may explain the results, I control for a host of variables that are potentially correlated with local labor unrest and aid allocation to central state-owned firms. Tables A.10 and A.11 control for prefecture-year level variables, which includes: lagged local GDP per capita, exports per capita, employment, average wages, population, as well as province-year fixed effects and unrest in neighboring prefectures. Table A.12 controls for firm-year level variables, which includes: the lagged number of employees, fixed assets, operating income, exports, and materials inventory. The rationale for controlling these variables and more details are provided in Appendix D.2. The coefficient of interest is highly robust to the inclusion of these controls.

Text analysis of firm reports. I use a natural language processing algorithm to systematically analyze the text of firms' annual reports to show that central state-owned firms, but not other aid contractors, internalize the government's political goal of maintaining social stability. For each firm and year, I count how frequently each of several keywords related to maintaining social stability is mentioned in the firm's annual report relative to the total word count in the report.[52] I then re-estimate the baseline specification using the keyword count as the outcome variable. I also summarize the keyword counts by taking their first principal component and, alternatively, their sum.

Figure 5 shows the results. Each red dot is the standardized coefficient from a regression of the frequency of the keywords listed on the left-hand side on lagged local unrest, controlling for firm and year fixed effects, for central state-owned firms. The gray dots are the standardized coefficients for other firms. The figure shows that central state-owned firms, but not other firms, mention keywords related to maintaining social stability significantly more frequently in response to an increase in local unrest.[53]

[52] I use the keywords from Campante, Chor and Li (2019) to avoid cherry-picking. I exclude keywords that appear less than a total of 10 times over all firms and years. Annual reports are only available for publicly listed firms. For unlisted firms, I use the annual reports of listed firms in their conglomerate and prefecture. Since this likely leads to correlated measures across firms within conglomerates, I two-way cluster standard errors at the prefecture and conglomerate level.

[53] One potential concern with this exercise is that central state-owned firms are more likely to use language that is more similar to the language the government uses in general (specifically following local unrest). To address this concern, I repeat the analysis above using a set of placebo keywords typically used in government speeches. Figure A.21 shows that the coefficients for these keywords are small and insignificant for both types of firms.

Placebo check. The exercise above motivates an important placebo check. Aid contractors not owned by the central government should only bid on aid projects when there is local unrest if there are unobserved local economic shocks correlated with both local unrest and aid allocation. Table 2 shows the results of this placebo check, which is analogous to Table 1 but includes only firms that are not owned by the central government.[54] Reassuringly, the estimated relationship between lagged unrest and aid allocation to these firms is small and statistically insignificant for all measures of aid.[55] The results of this placebo check provide further evidence that the central government's need to address local unrest, rather than unobserved economic shocks, explains the main results.

A potential concern with this exercise is that central state-owned firms differ from other firms in other characteristics that could explain the difference in the effect of unrest on aid allocation between the two types of firms. Appendix D.3 addresses this concern and shows that my results are robust to this.

Effects on employment. Table 3 examines the effect of local unrest on firm employment. Since the sample includes only observations with information on employment from the tax survey data, Columns (1) and (2) for comparison replicate the main specification for this subsample. As in Tables 1 and 2, central state-owned firms, but not other firms, contract more aid projects in response to local unrest. Columns (3) and (4) show that central state-owned firms, but not other firms, increase employment (in logs) in response to local unrest. One additional labor unrest event per million inhabitants, lagged by one year, increases employment by central state-owned firms by 3%. The coefficient is statistically significant at the 5% level. In contrast, employment by other firms decreases by approximately the same amount when there is unrest (although the coefficient is statistically insignificant at conventional levels). These results are consistent with a stabilizing role of central state-owned firms.

The role of local government spending. Allocating foreign aid contracts to domestic firms is not the only policy tool for governments in need of securing domestic stability. For example, the Chinese central government may encourage local governments to increase domestic public spending to shore up public support and address unrest.[56] However, domestic

[54] I include all firms that are licensed by the government to contract foreign aid projects (see Section 3.2) but not controlled by the central government. These firms implement 35% of all aid projects in the sample.

[55] Figures A.18 and A.19 show binned scatter plots of the corresponding results for the number and total financial value of contracts allocated to firms not owned by the central government. Figure A.20 shows the effect of different leads and lags on the number of aid contracts allocated to these firms. All coefficients are small and statistically insignificant.

[56] Local governments in China are responsible for 85% of general government budgetary spending and responsible for most domestic infrastructure investment (Wingender, 2018).

spending is costly and may have decreasing returns, and high existing spending may prevent local governments from stimulating domestic demand further.[57] This helps explain why the government uses foreign aid to address domestic unrest, in addition to or instead of domestic public spending (see also Section 2).

To test this idea, I construct a dummy variable that equals 1 (0) if the prefecture government's lagged public income/expenditure ratio is below (above) the sample mean.[58] I interpret this dummy as a proxy for constraints on the local government to stimulate domestic demand further using public spending. I then interact this dummy with local unrest to estimate heterogeneous effects of unrest on aid allocation to firms in the prefecture. Table 4 shows the results. As expected, unrest has a significantly higher effect on aid allocation to firms in the prefecture if the local government is constrained in its ability to stimulate demand directly using public spending. The interaction coefficient is statistically significant at the 5% level.

Unrest by sector. Table 5 shows that only labor unrest in industrial sectors (construction, manufacturing, mining), which supply the majority of Chinese aid projects, has a large and statistically significant effect on contract allocation to central state-owned firms. Reassuringly, unrest in service sectors (mainly strikes by school teachers and taxi drivers) has no significant effect.

Other robustness checks. Appendix D.4 discusses a number of other robustness checks. First, I estimate the effects of unrest on aid allocation and employment at the prefecture instead of firm level to show that the results are driven by a re-allocation of aid projects across prefectures rather than from other to central state-owned firms within a prefecture. Second, I repeat the main analysis using a non-linear specification to address potential concerns related to functional forms. Third, I show that the results are robust to excluding specific observations, including outliers, prefectures, and time periods. Finally, I report alternative standard errors.

[57] For example, in response to the global Great Recession in 2008/2009, the central government encouraged local governments to massively expand their balance sheets to encourage domestic infrastructure construction. As a consequence, local governments increased expenditures and indebted themselves to record levels, raising questions about their ability to stimulate demand using fiscal policy in the future (Copper, 2016; Cong et al., 2019).

[58] Alternatively, I use the continuous income/expenditure ratio. The results are similar. The data on public income and expenditure come from the China City Statistical Yearbooks.

4. The Effects of Chinese Infrastructure Aid on Recipient Countries

The previous section showed that the Chinese government's political need to address domestic unrest influences the allocation of contracts for infrastructure foreign aid projects to domestic contractors. I now examine the economic effects of such aid on recipient countries.

4.1. Empirical Strategy

The main challenges for estimating the causal effects of aid on recipients are the issues of reverse causality and joint determination. In this subsection, I motivate and describe my empirical strategy to address these challenges. To help understand the identification challenges, first consider the simple case where country i's outcome (e.g., GDP per capita) is regressed on the level of aid received by China s years prior:

$$\mathrm{Y}_{i,t+s} \;=\; \beta\, \mathrm{aid}_{i,t} \;+\; \alpha_i \;+\; \delta_t \;+\; \epsilon_{i,t}, \tag{2}$$

where $\mathrm{Y}_{i,t+s}$ is an outcome of country i in year $t+s$ and $\mathrm{aid}_{i,t}$ is the number of Chinese aid projects received by country i in year t. α_i and δ_t denote the vectors of country and year fixed effects. The sample includes a panel of 136 low- and middle-income countries during the years 2003 to 2018.[59]

The coefficient of interest, β, is the effect of an additional Chinese aid project on the recipient country outcome s years later. However, the coefficient will capture reverse causal effects if China allocates aid based on recipient outcomes. For example, if China allocates more aid to countries on a negative growth path, then the estimate $\hat{\beta}$ of this OLS regression would be biased downwards. Alternatively, aid and the outcome in the recipient country could be jointly determined by a third factor, such as a change in the political regime of the recipient country, which could bias $\hat{\beta}$ in either direction.

To address these endogeneity issues, I rely on the fact that each central state-owned firm is connected to a set of aid-recipient countries (i.e., there are countries which a given firm usually works with). Thus, I exploit the time and spatial variation in local unrest in Chinese prefectures, interacted with these connections between recipient countries and Chinese firms, to construct an instrumental variable for the amount of Chinese aid a country receives in a given year. The logic is as follows. When there is labor unrest in a Chinese prefecture, the Chinese central government allocates more aid contracts to central state-owned firms in that prefecture. As explained in Section 2, central state-owned firms are then more likely to direct the aid to countries they typically work with than to other countries. Hence, variation

[59] Table A.20 shows the set of countries in the sample (non-high income, non-OECD countries, as defined by the World Bank). Due to inconsistencies in the data, I exclude from the sample mini-states, Libya, as well as the Democratic Republic of the Congo and Republic of Congo. The latter is necessary since the two states seem to be often confused in the primary sources underlying my dataset, leading to implausible values.

in local unrest in China predicts the amount and timing of Chinese aid that other countries receive.

Causal identification assumes that the Chinese government's decision to allocate aid contracts to firms in a given Chinese prefecture, in response to an increase in local labor unrest in the prefecture, is driven by the desire to quell unrest and not by the desire to direct aid to connected countries. Similarly, I assume that shocks to domestic labor unrest in a prefecture are orthogonal to shocks to future economic outcomes in connected countries (conditional on country and year fixed effects). I discuss potential threats to identification and tests to validate the identifying assumptions further below. The second and first stages of the 2SLS specification are, respectively:

$$\mathrm{Y}_{i,t+s} \;=\; \beta\, \widehat{\mathrm{aid}}_{i,t} \;+\; \mathbf{X}_{i,t}\Gamma \;+\; \alpha_i \;+\; \delta_t \;+\; \epsilon_{i,t}, \tag{3}$$

$$\mathrm{aid}_{i,t} \;=\; \gamma\, \mathrm{Z}_{i,t-1} \;+\; \mathbf{X}_{i,t}\Theta \;+\; \alpha_i \;+\; \delta_t \;+\; \mu_{i,t}, \tag{4}$$

where the instrument, which I call "weighted unrest", is the sum of lagged local unrest shocks in Chinese prefectures multiplied by country i's connections to central state-owned firms in each of the prefectures:

$$\mathrm{Z}_{i,t-1} \;=\; \sum_{p} (\mathrm{unrest}^{*}_{p,t-1} \;\cdot\; \omega_{i,p}). \tag{5}$$

I calculate the local unrest shocks, $\mathrm{unrest}^{*}_{p,t-1}$, as the lagged number of unrest events per million inhabitants in prefecture p. I residualize the local unrest shocks on year and prefecture fixed effects to re-center them by their conditional expectation (following Borusyak and Hull, 2020).[60] I calculate connections between country i and firms in prefecture p, $\omega_{i,p}$, as the fraction of years between 2005 and 2015 that country i received any aid by central state-

[60] Note that the year fixed effects do not capture the differential effect of changes in average unrest across China over time on countries that receive aid more frequently compared to countries that receive aid less frequently. I demean yearly unrest in each prefecture with yearly average unrest across all prefectures to address two potential issues related to this. First, the measured increase in average unrest across all prefectures over time may not reflect an actual increase in average unrest over time since the reporting of unrest may have increased across all prefectures over time. This weakens the predictive power of the instrument in the first stage since the instrument would predict frequent aid recipients to receive more aid over time, while they should in reality not receive more aid as it is only the reporting of unrest which has increased over time. Second, if the outcomes of frequent and infrequent recipients of aid followed different time trends, they may be spuriously correlated with a trend in measured unrest stemming from increased average reporting of unrest over time. Demeaning yearly unrest in each prefecture with yearly average unrest across all prefectures addresses these issues by removing shifts in average unrest across all prefectures over time.

owned firms in prefecture p.[61] $\mathbf{X}_{i,t}$ is a vector of country-year level control variables, which includes recipient country population in the baseline specification, and other variables which I introduce in Section 4.6. All other variables are as before. The baseline specification clusters standard errors at the country level.[62]

The empirical strategy exploits the country and time variation in the receipt of Chinese aid caused by the timing and spatial variation in local unrest in Chinese prefectures to estimate the causal effects of Chinese aid on recipients. The specification controls for year fixed effects that capture changes over time that affect all countries similarly, as well as country fixed effects that capture time-invariant differences across countries, including the cross-sectional variation in connections between recipient countries and firms in Chinese prefectures. The cross-sectional variation in connections could be correlated with countries' outcomes. However, the country fixed effects control for this variation, and the connections need not be exogenous for the instrument to be valid. Conditional on country and year fixed effects, the timing of the lagged, re-centered prefecture-level unrest shocks in China is plausibly exogenous to shocks to future recipient country outcomes. Hence, the interaction between shocks to local unrest in China and recipient countries' exposure to this variation generates an exogenous instrument for the amount of Chinese aid received by a country in a year (following the arguments in Borusyak and Hull, 2020).

The exclusion restriction requires that the instrument only affects recipient country outcomes through the provision of aid, conditional on controls. The main concern is that local unrest in specific Chinese prefectures is correlated with other factors that differentially affect countries connected to these prefectures. A first concern is that an increase in local unrest in a prefecture, relative to average unrest across China and controlling for country and year fixed effects, is correlated with future economic conditions of countries connected to that prefecture. The main concern is common trade shocks. If a prefecture-specific, negative export demand shock is associated with an increase in unrest in a prefecture and simultaneously with a decrease in future GDP of countries connected to that prefecture, $\hat{\beta}$ is biased downwards. In this case, I would underestimate the true effect of Chinese aid on recipient country GDP. To address this concern, I control for lagged weighted exports per capita in Chinese prefectures connected to a country in the robustness Section 4.6.

A second concern is that local unrest in a prefecture leads not only to the allocation of aid projects to countries connected to the prefecture but also to an increase (or decrease) in aid-unrelated Chinese exports or FDI to countries connected to the prefecture. If Chinese

[61] Formally, $\omega_{i,p} = \sum_{t=2005}^{T=2015} \frac{\mathbb{1}[aid_{i,p,t}>0]}{11}$. Although not strictly necessary for identification, one may want to calculate the connections based on a baseline year instead of over all years. However, this is not possible in this setting since most countries did not receive any aid in the baseline year. As a robustness check, I alternatively use the fraction of years in which country i received any aid by central state-owned firms in prefecture p prior to t, i.e., $\omega_{i,p,t} = \sum_{s=2005}^{t-1} \frac{\mathbb{1}[aid_{i,p,s}>0]}{s+1-2005}$. See Section 4.6.

[62] I discuss statistical inference in Section 4.6.

exports or FDI affect recipient outcomes independent of aid, the exclusion restriction is violated. I address such concerns by controlling for Chinese exports and FDI to each country. In addition, as placebo checks, I test whether the instrument spuriously predicts Chinese exports or FDI to other countries, and aid received by OECD-DAC donors. See Section 4.6.

For interpreting the 2SLS estimates, note that they reflect the average effect for observations that comply with the instrument, i.e., a local average treatment effect (LATE) (Angrist, Imbens and Rubin, 1996). In my setting, compliers are countries that receive more aid because of an increase in unrest in China. This is precisely the effect of interest to address the question of how aid driven by domestic political objectives of the donor affects recipients.

4.2. Country-Level Data and Descriptive Statistics

Table A.21 lists the country-year level variables used in this section and provides descriptive statistics. I briefly describe these variables and their sources here.

Outcomes. I use data from the World Development Indicators (World Bank, 2020) to measure various recipient economic outcomes at the country-year level, which includes: GDP per capita growth, GDP per capita in levels, as well as its components (capital formation, government consumption, household consumption, exports and imports). As additional outcomes, I use the unemployment rate of a country in a given year from the ILOSTAT database (International Labour Organization, 2020), calculate the number of high-level diplomatic visits by China to each country in a given year using data from China Vitae,[63] and use a country's Revised Combined Polity Score in a given year from the Polity5 database (Center for Systematic Peace, 2018). I winsorize all outcome variables at the 5th and 95th percentiles to limit the influence of extreme outliers. Results without winsorizing are qualitatively similar (available on request).

Controls. I use data on population and OECD-DAC aid receipt from the World Development Indicators (World Bank, 2020) and bilateral trade data at the country-year level from the Atlas of Economic Complexity (The Growth Lab at Harvard University, 2019). Data on Chinese FDI come from the Chinese Ministry of Commerce and the Global Investment Tracker by the American Enterprise Institute (American Enterprise Institute, 2019).[64] Finally, I use Chinese trade data at the country-prefecture-year level from the customs data described in Section 3.2 to construct the weighted amount of exports in

[63] China Vitae is a US NGO "committed to raising the quality and quantity of English language, biographical information on China's top leadership; and to create a centralized repository of such information available to a worldwide audience." URL: https://www.chinavitae.com/index.php

[64] As the American Enterprise Institute points out, the official FDI data from the Chinese Ministry of Commerce is incomplete. I therefore complement it with the Global Investment Tracker data. Details on request.

Chinese prefectures connected to a country in a given year.[65]

Weighted unrest. I calculate the instrument, $Z_{i,t-1}$, as described in Section 4. I standardize the instrument to have a mean of 0 and a standard deviation of 1 to facilitate the interpretation of the results. There is considerable variation in the instrument, both across countries and over time.

Aid. My preferred measure of Chinese aid is the total number of aid projects, implemented by Chinese central state-owned firms, received by a country in a given year. I also calculate the total financial value of Chinese aid projects as an alternative measure. As explained in Section 3.2, the number of aid projects is my preferred measure as it has fewer missing observations and is less likely to suffer from measurement error than the financial value. I construct the variables by aggregating the project-level data described in Section 3.2 to the country-year level. Each country in the sample receives 0.33 aid projects per year on average. Each project in the sample is worth 354 million USD on average (in constant 2014 USD). Pakistan, Angola, and Ethiopia are the largest recipients of Chinese aid projects implemented by central state-owned firms (see also Section 3.2).

Correlates with aid receipt. Appendix E.2 investigates recipient country characteristics that have been said to be associated with Chinese aid. These correlations show that China provides more aid to countries that are poorer, more politically aligned with China, have deeper trade relationships with China, and whose official language is English. However, contrary to conventional wisdom, there is no association between Chinese aid and whether a country is a petroleum exporter or less democratic. These cross-sectional correlations, which deserve further investigation in future research, are consistent with the notion that China chooses the countries it gives aid to based on economic and foreign policy goals.

4.3. First Stage Estimates

Figure 6 shows the residual plot of the relationship between lagged weighted unrest and the number of aid projects (implemented by central state-owned firms) received by a country in a given year, where both measures have been residualized on country and year fixed effects as well as recipient country population. The slope of the regression line is equivalent to the coefficient $\hat{\gamma}$ from the first stage Equation (4). A one standard deviation increase in lagged weighted unrest is associated with a 0.25 increase in the number of aid projects received by

[65] I construct a variable analogous to weighted unrest, but replacing the number of unrest events with the value of exports per million inhabitants in a prefecture.

a country on average (25% of a standard deviation). The effect is statistically significant at the 1% level. The Kleibergen-Paap F-statistic on the first stage is 23.71.

In other words, a country gets significantly more aid following years during which the Chinese prefectures it is connected with experience more local unrest, conditional on country and year fixed effects and controls. Multiplied by the number of countries, the estimates mean that a one standard deviation increase in the instrument leads to an allocation of 19.5 aid projects worth 6.9 billion USD in total, or 36% of China's total yearly aid on average.[66] Taken together, this implies that the Chinese government's political need to moderate domestic unrest drives a significant part of China's global aid allocation.

Table 6 shows the first stage for other measures of aid. The relationship between the instrument and aid is large and statistically significant at the 1% or 5% level for all measures of aid, although the F-statistic is smaller for measures of aid other than the total number of contracts. I use the total number of contracts as the baseline measure of aid for the results I describe below. Finally, Table A.24 shows the first stage by the sector of the aid project. The first stage is strong for projects in the transport and energy sectors. In contrast, the IV does not strongly predict the allocation of aid projects in communications, services, health, and emergency assistance.

4.4. Results: Economic Effects of Chinese Aid on Recipient Countries

Critics have argued that Chinese aid, which comes without policy conditions but is conditional on goods and materials being sourced from China, is mostly intended to serve domestic needs of the Chinese government rather than to foster economic development in recipient countries. Many have worried that Chinese infrastructure aid thus crowds out local labor and businesses, is inefficient or captured by elites, and potentially undermines Western donors' efforts.

My first stage is consistent with Chinese domestic goals driving a significant share of its foreign aid to other countries. However, using plausibly exogenous variation in China's aid allocation driven by domestic goals, I find that Chinese infrastructure aid can nevertheless greatly benefit both recipient governments and households.

This subsection describes these results in detail. To focus on plausibly causal estimates of Chinese infrastructure aid, I primarily discuss the 2SLS results. For all main results, however, I report OLS, reduced form and 2SLS results. Checks on the exclusion restriction and other robustness checks are presented in Subsection 4.6.

Tables 7 and 8 show the main results. In both tables, Panel A shows the 2SLS estimates of the causal effect of an additional Chinese aid project on the outcome variable indicated in the column header three years after commitment, where aid is instrumented by lagged

[66] There are 78 countries in the sample that ever receive aid. $1 \cdot 0.25 \cdot 78 = 19.5$. Each project in the sample is worth 354 million USD on average.

weighted labor unrest (coefficient $\hat{\beta}$ in Equation (3)). The average time it takes for Chinese infrastructure aid projects to be completed after commitment is 2 to 3 years (for the subsample of the projects in my data for which this information is available). Figure 7 illustrates the main 2SLS estimates of the effect of an additional Chinese aid project on GDP per capita at other leads and lags. Tables A.30 and A.31 show the 2SLS estimates for various leads and lags for all outcome variables.

Columns (1) and (2) of Panel A in Table 7 show the 2SLS estimates of the effect of Chinese aid on GDP per capita in levels and growth, conditional on country and year fixed effects and population. One additional Chinese aid project on average increases recipient country GDP per capita in levels by around 123 USD (2.4% of the sample mean) and GDP growth by 0.5 percentage points three years after commitment. The coefficients are statistically significant at the 5% and 10% levels respectively. Compared to the average size of aid projects and recipient populations, the estimated coefficients imply that every dollar spent on aid increases recipient country GDP by around 2.2 dollars per year on average after three years.

These estimates are large, but very similar in magnitude to recent estimates of the effect of arguably economically motivated Chinese infrastructure aid by Dreher et al. (2021). Recall that the aid projects in my sample are in the form of large-scale infrastructure, including railroads, pipelines, and ports. While these projects may be relatively small for China, they tend to be sizeable relative to recipient countries' economies, and potentially have large returns given the infrastructure gap in many developing countries (G20, 2021). Consistent with large-scale infrastructure construction driving the results, I find sizeable and statistically significant effects on capital formation and government consumption, as Table 8 Columns (2) and (3) show.[67] Table 8 Columns (5) and (6) show positive effects on recipient country imports and exports, although these coefficients are imprecisely estimated.

Panel B shows reduced form estimates, which equal 2SLS estimates multiplied by the first stage. Panel C shows OLS estimates, which I do not interpret as causal. The un-instrumented effects of aid on levels and growth of GDP are considerably smaller than the 2SLS estimates. This difference could be explained by China allocating more aid to countries on a lower growth path (e.g., because such countries have a higher demand for aid), or because aid projects allocated in response to domestic unrest are larger or have a higher impact on recipient country income than other projects.

The increases in GDP and government consumption do not necessarily translate into an improvement for the economic well-being of the recipient country population. Part of the increases may reflect the direct value of the infrastructure projects. One may also be concerned that the economic benefits of the projects are captured by political elites (e.g.,

[67] Table 8 includes a smaller sample than Table 7 due to missing observations in the data. For comparison, I report the effect on GDP per capita for this smaller sample in Column (1) of Table 8.

Werker, Ahmed and Cohen, 2009; Dreher et al., 2019) or hurt the local population via negative spillovers on local labor markets (e.g., Zhao, 2014; Wegenast et al., 2019), especially since the aid discussed here is driven by the interests of the Chinese government and firms. However, such evidence for Chinese aid is largely anecdotal.

To investigate this possibility, I examine variables related to household income. I find large, positive and statistically significant effects on household consumption. As Table 8 Column (4) shows, an additional aid project increases household consumption by 68 dollars per capita on average (2.2% of the sample mean) three years after commitment.

One potential channel is employment. As Table 7 Column (3) shows, an additional aid project decreases the recipient country's unemployment rate by 0.38 percentage points (5% of the sample mean). This finding is consistent with a recent study that shows positive short- and medium-term effects of Chinese infrastructure projects on local employment in Africa using difference-in-differences analysis (Guo and Jiang, 2021). As the study argues, Chinese infrastructure increases employment both directly for low-skill workers in the short run (e.g., for back-work during project construction), as well as indirectly for skilled labor in adjacent industries in the medium and long run (after the projects are completed).

Other potential channels include positive spillovers on local firms, e.g., through skill transfers (Tang, 2019), positive externalities on up- and down-stream sectors (Crescenzi and Limodio, 2021), or by providing local firms with the transport infrastructure necessary to export goods to foreign markets. Consistent with the latter, I find positive effects of Chinese infrastructure aid on recipient country exports. Contrary to claims in the press that Chinese aid is driven by China's hunger for natural resources, however, only a relatively small fraction of these increases can be attributed to natural resources being shipped to China (results on request). My results are also highly consistent with a recent study by Marchesi, Masi and Paul (2021), which shows that Chinese aid projects (in contrast to World Bank development aid) increase firm sales in recipient countries by releasing their infrastructure constraints.[68] Future research should examine these potential channels in more detail at a subnational level.

In sum, my results imply that the Chinese government's political goal to address domestic unrest does not undermine the benefits of its aid to recipient populations. This finding is particularly remarkable since the effects are also present in countries with poor institutions, such as Angola, Ethiopia, or Sudan, despite Chinese aid coming without policy conditions attached. One potential explanation is that, paradoxically, the fact that Chinese aid is aimed at creating jobs for Chinese workers leads to an alignment of the incentives of the donor and recipient countries. Chinese contractors also benefit from improved infrastructure and economic growth of countries they operate in in the form of new business opportunities,

[68] Marchesi, Masi and Paul (2021) employ the identification strategy of Dreher et al. (2021) to identify the effect of Chinese ODA projects on recipient country firm activity, using data from the World Bank Enterprise Surveys in 2003 to 2016.

which gives them the incentive to deliver economically productive projects. In addition, aid in the form of non-fungible goods and labor is less prone to elite capture than cash.

4.5. Additional Results

To complement my results, I examine potential political impacts of Chinese aid on recipients. As Table 7 Column (4) shows, Chinese aid, driven by China's *domestic* political goal of addressing unrest, leads to an intensification of diplomatic relations between China and the recipient country. Three years after the commitment of one additional project, recipient countries on average get one additional official visit by Chinese top political leaders. That a domestic policy goal can potentially influence foreign relations through the channels described in this paper is an interesting finding which deserves further study in future research.

I also examine the common claim that Chinese aid undermines Western donors' efforts to improve democratic institutions in poor countries. To test this claim, I repeat my analysis with a country's polity score as the outcome variable. The polity score is a measure of the degree of a country's democratization. Contrary to the common claim, I find no negative effect of Chinese aid on the polity score three years after commitment (Table 7 Column (5)).

4.6. Robustness and Falsification Tests

Robustness to controls. The exclusion restriction is violated if local unrest in Chinese prefectures is spuriously correlated with other variables that also differentially affect outcomes in recipient countries. As explained in Section 4.1, the main confounders are trade and FDI. To address such concerns, Tables A.26 and A.27 control for lagged weighted exports in Chinese prefectures, as well as total Chinese exports and FDI to the recipient country per capita. The results are robust to the inclusion of these controls.

Controlling for lagged outcomes. Tables A.28 and A.29 control for the lagged outcome variable at $t-1$ in each specification, in addition to the baseline controls, as a further robustness check to address the potential concern that recipient outcomes may be spuriously correlated with the instrument at $t-1$. The results are qualitatively robust to the inclusion of these additional controls.

First stage falsification tests. Table A.25 presents the results of falsification tests for the first stage. Column (2) replicates the baseline first stage for comparison. In Columns (1), (3) and (4), I replicate the first stage for different leads and lags of the instrument. Consistent with the results in Section 3, weighted unrest in China only predicts the number of aid projects received by a country in the next calendar year. In columns (5) to (7), I regress Chinese imports, Chinese FDI, and OECD-DAC aid received by a

country on the instrument. Reassuringly, lagged weighted unrest does not strongly predict any of these variables. These results provide further support for the validity of the instrument.

Other leads and lags. The main 2SLS specification estimates the effect of Chinese foreign aid on outcomes three years later. Tables A.30 and A.31 show the results for other leads and lags of aid. Each row displays the coefficient from a separate regression. As expected, the effect of aid projects on GDP per capita (and other outcomes) continuously increases over time as the projects get completed and start operating. Reassuringly, aid in the future, i.e., measured 1 or 2 years after the outcome, has no effect.

Different types of aid. Table A.32 shows the effect of Chinese aid instrumented by weighted labor unrest on GDP for different measures of aid (financial value instead of the number of contracts and ODA-like / OOF-like official finance only). I find large effects on GDP for all measures, although the estimates are less precisely estimated due to a weaker first stage compared to the baseline. Seemingly unrelated regressions (SUR) reveal that the effects of ODA-like and OOF-like finance on GDP are not statistically distinguishable from each other, i.e., the type of financing does not appear to influence aid efficacy.

Instrument using lagged connections. Tables A.33 and A.34 replicate Tables 7 and 8, respectively, but using only aid up to t-1 to construct the vector ω, a country's connections to central state-owned firms in Chinese prefectures.[69] The estimates are qualitatively similar to the baseline specification, albeit less powered.

Excluding outliers. Even though this would not change the internal validity of the findings, the interpretation would be different if the coefficients were driven by a few exceptional observations. To investigate this possibility, Tables A.35 and A.36 replicate Tables 7 and 8, respectively, dropping the three observations with the highest DFBETAs (a measure of influence). The results remain qualitatively similar.

Randomization test and inference. Adão, Kolesár and Morales (2019) note that in the case of shift-share instruments, standard inference procedures, such as clustering at the recipient country level, may result in standard errors that are too small. Standard errors may be underestimated if a set of prefectures bears similar importance across multiple recipient countries, generating correlation at the prefecture level across multiple recipient countries. Even though my instrument differs from the case studied in their paper as the weights in my instrument do not represent exposure shares, a similar concern could apply in my setting.

[69] Formally, $\omega_{i,p,t} = \sum_{s=2005}^{t-1} \frac{\mathbb{1}[aid_{i,p,s}>0]}{t-2005}$). In this specification, the uninteracted term $\sum_p \omega_{i,p,t}$ is not absorbed by the country fixed effects, so I control for it separately.

To assess this concern, I run a placebo analysis, replacing the IV by interacting countries' connections with central state-owned firms in Chinese prefectures with random permutations of prefecture-level shocks to local unrest from the distribution of unrest shocks in the sample.[70] I iterate this procedure 1,000 times and document the fraction of times the coefficients of instrumented aid on GDP per capita three years after commitment show statistically significant effects at the 5% level. The coefficient on aid is statistically significant 7.1% of the time at the 5% level (two-sided test). Given the precision of the main finding (p=0.016 in Table 7 Column (1)), the results from this placebo exercise suggest that while the standard errors likely warrant adjusting, the impact of aid on recipient country outcomes is unlikely to be driven by noise and would remain statistically significant.

In addition, following Borusyak and Hull (2020), I conduct a randomization inference test on the reduced form. Figure A.37 displays the distribution of 1,000 coefficients from regressions of GDP per capita three years after commitment on the IV with randomly permuted unrest shocks. The two-sided p-value is 0.038. Hence, the main result remains statistically significant at the 5% level. Reassuringly, the figure also shows that the variation in the unrest shocks, rather than in the country-prefecture connections (exposure weights), is driving the main result. This provides further confidence in the main identifying assumptions.

5. Conclusion

Foreign aid is one of the most important policy tools with which rich countries can transfer resources to poor countries. Yet, the goals of donors and the benefits of trillions of dollars in foreign aid for recipient populations remain unclear and highly debated. Existing studies hypothesize that donors' economic and political goals drive foreign aid, partly blaming them for aid's historical failure to foster broad-based economic development. However, we know surprisingly little about the exact processes through which donors' objectives influence aid allocation and efficacy. The rise of China as one of the largest donors in the last two decades has fueled new debates, with much speculation but little rigorous evidence about its motives and impact.

This paper makes progress on these questions by diving deep into the opaque process underlying China's aid allocation. I show that a significant fraction of Chinese foreign aid is driven by the Chinese government's political need to moderate domestic unrest. However, this does not undermine the benefits of Chinese aid to recipients. These findings imply that foreign aid allocated according to the domestic needs of the donor country need not have deleterious effects on recipient households as previously suggested by some existing studies.

[70] Alternatively, I sample from the distribution of unrest shocks within a year (permuting prefectures), from the distribution of unrest shocks within a prefecture (permuting years), and from a normal distribution with mean 0 and variance 5 as in Adão, Kolesár and Morales (2019). The results are similar.

These findings have important policy implications. Selfless aid is politically unrealistic. However, as this paper shows, the fact that aid benefits not only recipients but also the Chinese state itself does not on its own mandate a policy response by other donor countries. In fact, measures such as restricting the use of export credit as a form of state subsidy, as currently mandated by the global credit governance regime of the OECD, may end up hurting citizens of poor countries if it leads to a decrease in development finance.[71] Policymakers should therefore perhaps focus on other aspects to improve aid efficacy, including the types of projects, the mode of delivery, and the role of contractors. The aspects of Chinese infrastructure aid which make it particularly effective in certain contexts deserve further scrutiny in future research.

The positive economic benefits of Chinese aid found in this paper must be weighed against potential unaccounted costs, such as increases in corruption, conflict, environmental degradation, and sovereign debt. It also remains to be seen how sustainable the gains from Chinese aid projects are in the long term. The fact that projects are allocated in response to domestic short-term shocks in China suggests that aid flows are unpredictable from the recipients' perspective and may not be allocated optimally to foster long-term growth.

Understanding the causes and consequences of China's overseas finance will remain a first-order issue for decades to come. In 2013, China announced the *Belt and Road Initiative* (BRI), a massive bid to enhance regional connectivity around the developing world. China plans to spend over a trillion dollars on infrastructure projects abroad in the coming years. Some observers have estimated that the BRI will boost world GDP by *7.1 trillion USD per annum* by 2040 (Cebr, 2019). However, the BRI's goals and impacts are currently poorly understood. While much of the BRI falls under the category of commercial investment rather than foreign aid, many BRI projects are similar in nature to the projects studied in this paper. The findings of this paper may thus help inform appropriate policy responses to China's global expansion in a broader sense.

The results of this study suggest several important avenues for future research. The first is to examine other donor goals and their implications for aid allocation. The second is to examine the long-term and distributional consequences of Chinese aid as well as other outcomes that are potentially affected by it. Finally, more work needs to be done to better understand the channels through which Chinese aid shapes economic development in practice. As this paper demonstrates, the use of fine-grained micro data to dive deep into the political processes behind foreign aid allocation is a promising approach to make progress on this important research agenda.

[71] China, which does not adhere to the OECD's credit governance regime, has been increasingly using export credits to support the international expansion of its firms, including in the context of its foreign aid program (Hopewell, 2021).

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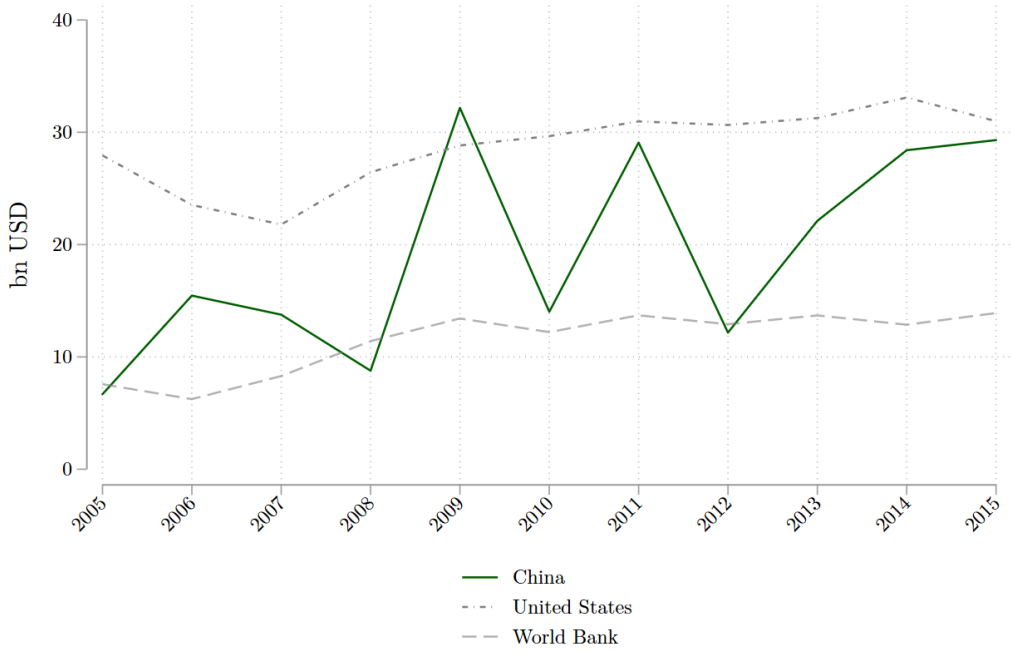
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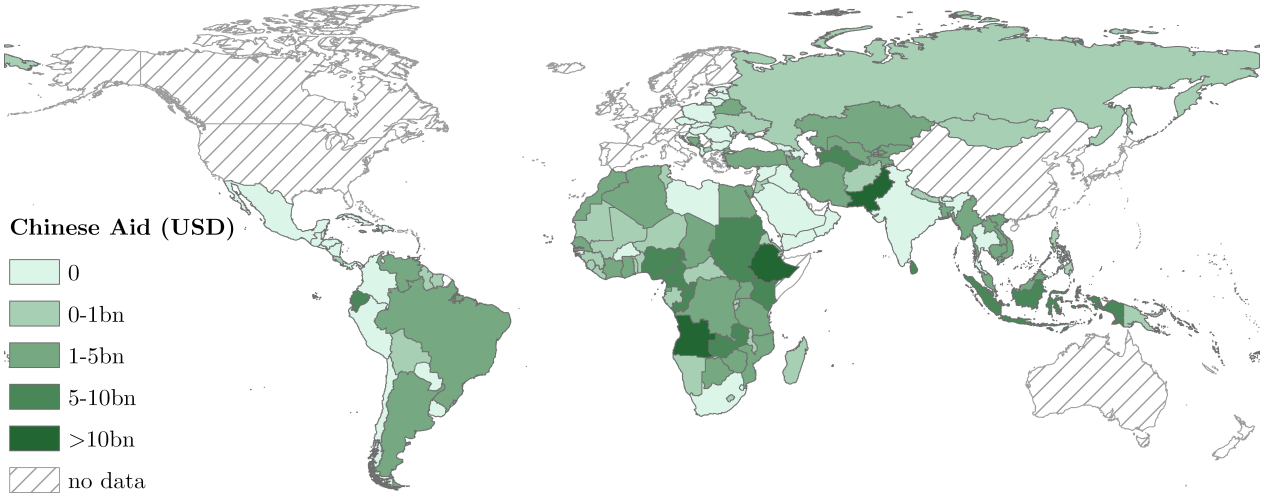
Figures and Tables

Figure 1: China's vs. Other Donors' Foreign Aid Over Time



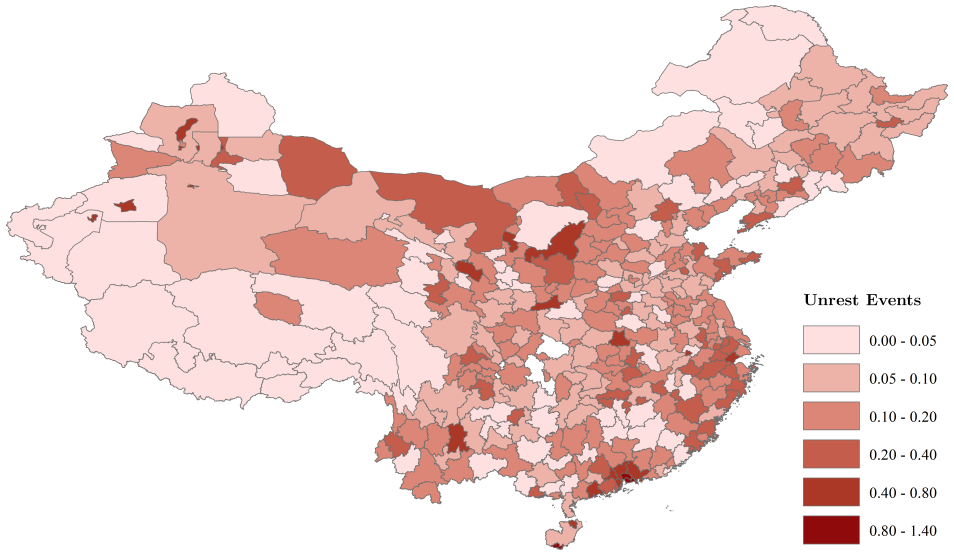
Note: The solid line shows the total financial value of Chinese foreign aid projects committed to non-high income, non-OECD countries and contracted by Chinese firms in the sample by year. The dotted line shows the total financial value of official finance by the United States to non-high income, non-OECD countries by year (data from OECD-DAC). The dashed line shows the total financial value of World Bank projects to non-high income, non-OECD countries outside of China by year (data from the World Bank Major Contracts Database). Financial amounts are in constant 2014 USD.

Figure 2: Map of Chinese Foreign Aid to Developing Countries, 2005–2015



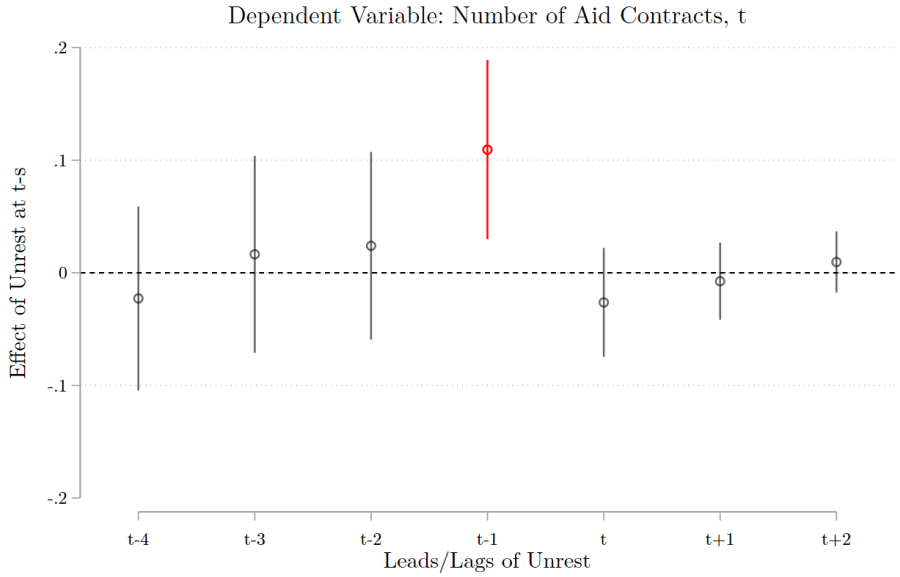
Note: This figure shows the total financial value of Chinese foreign aid projects committed to non-high income, non-OECD countries and contracted by Chinese firms in the sample during 2005 to 2015. Financial amounts are in constant 2014 USD.

Figure 3: Yearly Number of Unrest Events per Million Inhabitants by Prefecture, 2004–2014



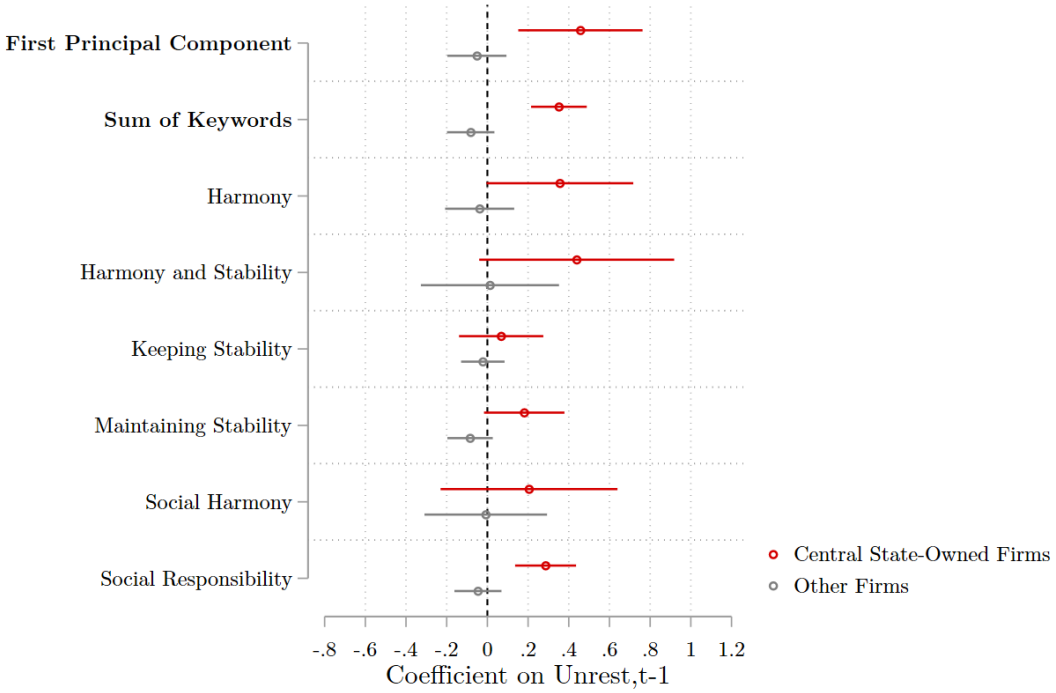
Note: This Choropleth map shows the yearly number of labor unrest events per million inhabitants by Chinese prefecture. Data for 2004 to 2011 is from the China Strikes Crowdmap and data for 2012 to 2014 is from the China Labour Bulletin (CLB).

Figure 4: The Effects of Leads and Lags of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms



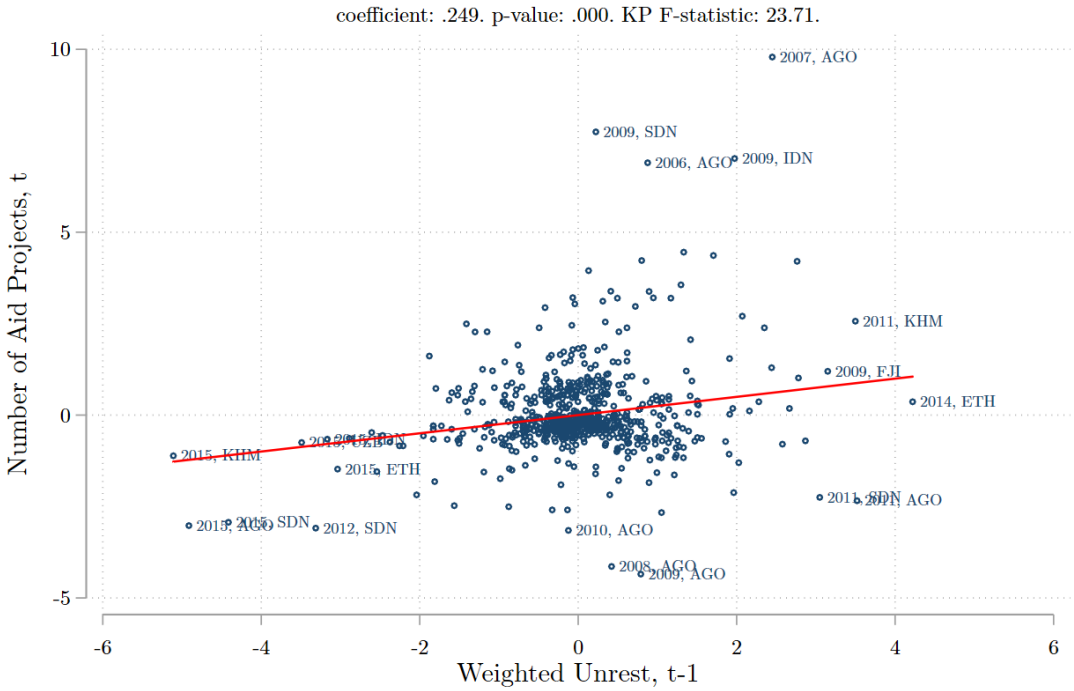
Note: The unit of observation is a firm-year. Each dot shows the coefficients from a linear regression of the number of Chinese foreign aid contracts allocated to a central state-owned firm in year t on the number of labor unrest events per million inhabitants in the firm's prefecture at all leads and lags shown on the x-axis, controlling for firm and year fixed effects. The vertical lines show 90% confidence intervals. The mean of the dependent variable is 0.163. The standard errors are clustered at the prefecture level.

Figure 5: The Effect of Local Unrest in China on the Frequency of Social Stability Keywords in Firms' Annual Reports



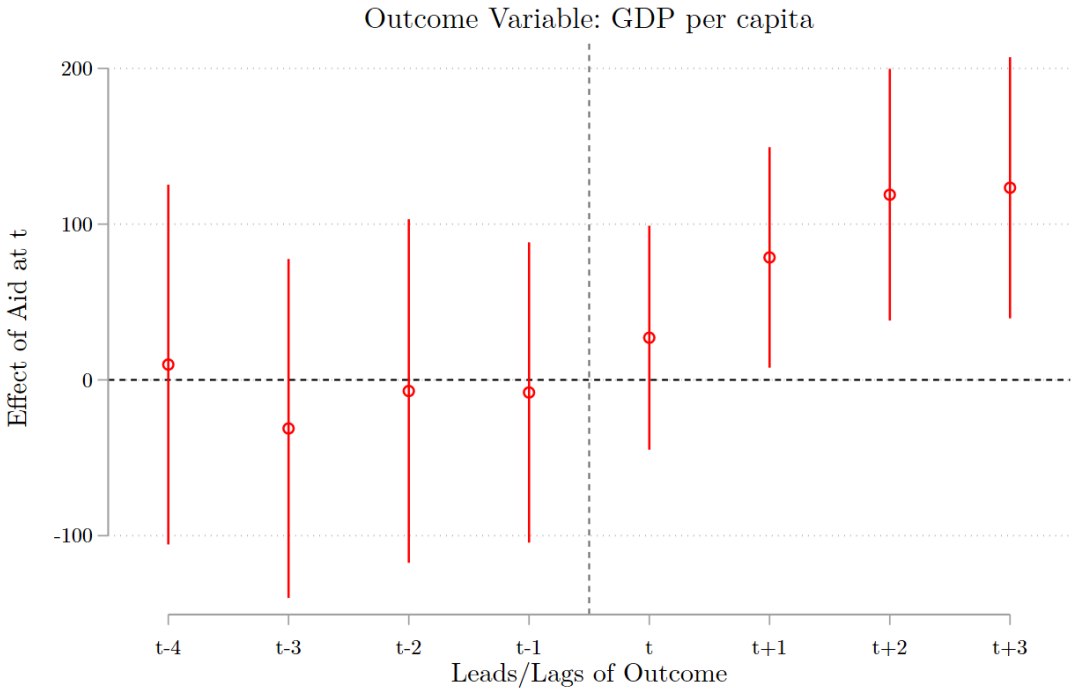
Note: The unit of observation is a firm-year. Each dot shows the coefficients from separate linear regressions of the frequency of the phrase labeled on the y-axis in a firm's annual report in year t on the number of labor unrest events per million inhabitants in the firm's prefecture in year t-1, controlling for firm and year fixed effects. The horizontal bars show 90% confidence intervals. All variables are standardized to have a mean of 0 and a standard deviation of 1. The standard errors are two-way clustered at the conglomerate and prefecture-level. The sample includes Chinese listed firms and their subsidiaries included in the main sample.

Figure 6: The Effect of Unrest in China on the Number of Chinese Foreign Aid Projects Received by Other Countries (First Stage Residual Plot)



Note: The unit of observation is a country-year. The red line is the line of fit from a linear regression of the number of Chinese foreign aid projects received by a country in year t on weighted unrest in China in year $t-1$, residualized on country and year fixed effects as well as recipient country population. Weighted unrest is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. The blue dots show the residuals, labeled by year and recipient country code. The standard errors are clustered at the country level.

Figure 7: The Effect of an Additional Chinese Foreign Aid Project on Recipient Country GDP per capita (2SLS Estimates)



Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Each coefficient shows the coefficient estimate of a separate 2SLS regression of recipient country GDP per capita at the lead or lag indicated on the x-axis on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. The vertical bars indicate 90% confidence intervals. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. The outcome variable is winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level.

Table 1: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms

Dependent Variable:	Number of Aid Contracts			Financial Value of Aid Contracts		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.103**	0.035**	0.048***	0.649**	0.345*	0.575***
	(0.041)	(0.015)	(0.018)	(0.281)	(0.189)	(0.210)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,532	3,432	3,432	3,500	3,413	3,427
Adjusted R2	0.575	0.334	0.178	0.420	0.220	0.173
Dependent Variable Mean	0.154	0.043	0.040	1.401	0.502	0.540
Dependent Variable SD	0.688	0.269	0.280	5.017	2.993	3.204
Unrest Mean	0.271	0.270	0.270	0.271	0.270	0.270
Unrest SD	0.330	0.331	0.331	0.331	0.332	0.332

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p $<$ 0.10, ** p $<$ 0.05, *** p $<$ 0.01.

Table 2: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Other Firms (Placebo Check)

Dependent Variable:	Number of Aid Contracts			Financial Value of Aid Contracts		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.009	0.004	0.002	0.047	0.044	0.029
	(0.006)	(0.004)	(0.002)	(0.059)	(0.044)	(0.039)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,109	5,077	5,077	5,067	5,047	5,075
Adjusted R2	0.450	0.379	0.157	0.333	0.324	0.105
Dependent Variable Mean	0.048	0.028	0.007	0.419	0.254	0.112
Dependent Variable SD	0.332	0.245	0.103	2.690	2.072	1.428
Unrest Mean	0.259	0.259	0.259	0.260	0.260	0.259
Unrest SD	0.431	0.432	0.432	0.432	0.433	0.432

Note: The unit of observation is a firm-year. The sample includes firms other than central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p $<$ 0.10, ** p $<$ 0.05, *** p $<$ 0.01.

Table 3: Effect of Local Unrest in China on Firm Employment

Dependent Variable:	Number of Aid Contracts		Number of Employees	
Sample:	Central State-Owned Firms	Other Firms	Central State-Owned Firms	Other Firms
	(1)	(2)	(3)	(4)
Unrest,t-1	0.073**	0.012	0.031**	-0.032
	(0.035)	(0.009)	(0.012)	(0.023)
Firm and Year FEs	Yes	Yes	Yes	Yes
Observations	1363	1804	1363	1804
Adjusted R2	0.637	0.396	0.959	0.947
Dependent Variable Mean	0.224	0.031	6.127	6.083
Dependent Variable SD	0.842	0.218	1.565	1.400
Unrest Mean	0.270	0.273	0.270	0.273
Unrest SD	0.309	0.459	0.309	0.459

Note: The unit of observation is a firm-year. The sample includes firms with >10 employees that were selected to participate in the 2007–2015 tax surveys by the State Tax Administration. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Number of employees: log(average number of workers employed by a firm in year t). Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms by Fiscal Capacity of the Local Government

Dependent Variable:	Number of Aid Contracts			Financial Value of Aid Contracts		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Local Gov. Constrained, t-1	-0.086**	-0.022	-0.026	-0.614**	-0.107	-0.320
	(0.033)	(0.013)	(0.018)	(0.289)	(0.190)	(0.208)
Unrest, t-1	0.073**	0.020*	0.036**	0.269	0.215	0.372**
	(0.031)	(0.012)	(0.015)	(0.233)	(0.168)	(0.179)
Unrest × Local Gov. Constrained, t-1	0.081**	0.040**	0.039**	0.947**	0.377	0.627**
	(0.036)	(0.018)	(0.015)	(0.469)	(0.245)	(0.290)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,414	3,315	3,315	3,382	3,296	3,310
Adjusted R2	0.572	0.332	0.175	0.416	0.217	0.17
Dependent Variable Mean	0.158	0.045	0.041	1.444	0.520	0.559
Dependent Variable SD	0.698	0.274	0.285	5.086	3.044	3.258
Unrest Mean	0.267	0.266	0.266	0.267	0.266	0.266
Unrest SD	0.314	0.315	0.315	0.315	0.315	0.315

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. Local Gov. Constrained is a dummy that equals 1 if the yearly prefecture public income / expenditure ratio is below 0.8 (sample mean) in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms by Sector of Unrest

Dependent Variable:	Number of Aid Contracts			Financial Value of Aid Contracts		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest in Industrial Sectors,t-1	0.116**	0.044**	0.051**	0.886**	0.464**	0.602**
	(0.046)	(0.017)	(0.020)	(0.365)	(0.209)	(0.247)
Unrest in Service Sectors,t-1	0.022	-0.009	0.024	-0.528	-0.040	0.303
	(0.084)	(0.041)	(0.038)	(0.835)	(0.625)	(0.550)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,532	3,432	3,432	3,500	3,413	3,427
Adjusted R2	0.575	0.334	0.177	0.420	0.220	0.172
Dependent Variable Mean	0.154	0.043	0.040	1.401	0.502	0.540
Dependent Variable SD	0.688	0.269	0.280	5.017	2.993	3.204
Unrest in Industrial Sectors Mean	0.191	0.190	0.190	0.191	0.190	0.190
Unrest in Industrial Sectors SD	0.267	0.268	0.268	0.268	0.268	0.268
Unrest in Service Sectors Mean	0.071	0.0707	0.0707	0.071	0.0707	0.0707
Unrest in Service Sectors SD	0.107	0.107	0.107	0.107	0.107	0.107

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. Industrial sectors include construction, mining, and manufacturing. Service sectors include education, public transport, and other services. The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Effect of Unrest in China on Foreign Aid Received by Other Countries (First Stage)

Dependent Variable:	Number of Aid Projects			Financial Value of Aid Projects		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Weighted Unrest,t-1	0.249***	0.068***	0.117***	0.835***	0.535**	0.922***
(Standardized)	(0.051)	(0.025)	(0.027)	(0.254)	(0.266)	(0.232)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,518	1,518	1,518	1,518	1,518	1,518
Adjusted R2	0.348	0.218	0.281	0.289	0.185	0.258
Kleibergen-Paap F-Statistic	23.71	7.185	18.25	10.77	4.039	15.73
Dependent Variable Mean	0.326	0.122	0.125	3.079	1.474	1.343
Dependent Variable SD	1.012	0.430	0.615	7.071	5.010	4.966

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Number of aid projects: total number of Chinese foreign aid projects, implemented by central state-owned firms, committed to a country in year t. Financial value of aid projects: log(1 + total financial value of Chinese foreign aid projects, implemented by central state-owned firms, committed to a country in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Weighted unrest is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Effects of Chinese Foreign Aid on Recipient Countries (Main Outcomes)

Dependent Variable at t+3:	GDP per capita	GDP Growth per capita (%)	Unemployment Rate (%)	Number of Diplomatic Visits	Polity Score
	(1)	(2)	(3)	(4)	(5)
	Panel A: IV Estimates				
Instrumented Number of Aid Projects,t	123.359**	0.510*	-0.381**	1.059**	0.011
	(50.612)	(0.300)	(0.179)	(0.433)	(0.349)
	Panel B: Reduced Form Estimates				
Weighted Unrest,t-1	31.267**	0.129	-0.096**	0.267***	0.003
	(12.659)	(0.079)	(0.040)	(0.095)	(0.092)
	Panel C: OLS Estimates				
Number of Aid Projects,t	0.302	0.160**	-0.021	0.164*	0.023
	(11.920)	(0.079)	(0.030)	(0.086)	(0.044)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,474	1,479	1,423	1,500	1,316
Kleibergen-Paap F-Statistic	24.41	24.36	23.88	24.30	23.84
Dependent Variable Mean	5,130	2.209	7.598	1.393	3.668
Dependent Variable SD	4,597	2.941	5.358	2.666	5.630
Number of Aid Projects Mean	0.333	0.334	0.345	0.330	0.353
Number of Aid Projects SD	1.024	1.024	1.041	1.017	1.072

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Effects of Chinese Foreign Aid on Recipient Countries (Components of GDP)

Dependent Variable at t+3:	GDP per capita	Capital Formation per capita	Government Consumption per capita	Household Consumption per capita	Imports per capita	Exports per capita
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: IV Estimates					
Instrumented Number of Aid Projects,t	164.867***	82.034**	40.414***	68.228*	95.185*	63.112
	(61.594)	(32.660)	(12.168)	(39.585)	(56.131)	(46.910)
	Panel B: Reduced Form Estimates					
Weighted Unrest,t-1	41.876***	20.836**	10.265***	17.330*	24.592	16.376
	(15.637)	(8.381)	(3.106)	(9.260)	(16.174)	(13.642)
	Panel C: OLS Estimates					
Number of Aid Projects,t	3.760	9.656*	0.725	0.725	17.379	11.777
	(12.552)	(5.710)	(1.543)	(4.834)	(12.479)	(14.811)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,189	1,189	1,189	1,189	1,189	1,189
Kleibergen-Paap F-Statistic	16.74	16.74	16.74	16.74	16.74	16.74
Dependent Variable Mean	5,097	1,275	855.2	3,140	2,386	2,235
Dependent Variable SD	4,669	1,176	888.2	2,610	2,563	2,737
Number of Aid Projects Mean	0.348	0.348	0.348	0.348	0.348	0.348
Number of Aid Projects SD	1.071	1.071	1.071	1.071	1.071	1.071

Note: The unit of observation is a country-year. The sample includes observations that are non-missing for all outcome variables. All regressions control for country and year fixed effects, as well as population. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t + 3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t - 1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t + 3$ on weighted unrest in China in year $t - 1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t + 3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

APPENDIX

Contents

Appendix A Additional Background **2**

A.1 Definitions and Types of Development Finance 2

A.2 Differences Between OECD and Chinese Development Finance 4

A.3 Chinese Government Entities and the Foreign Aid Allocation Process 5

Appendix B Details on the Micro Data **7**

B.1 Project-Level Aid Data 7

B.2 Constructing and Linking the Firm Panel 9

B.3 Customs Data 10

B.4 Tax Survey Data 11

B.5 Unrest Data 11

B.6 Other Micro Data 12

Appendix C Additional Descriptive Statistics and Figures: Micro Data **14**

C.1 Project-Level Aid Data 14

C.2 Firm-Level Data 20

C.3 Prefecture-Level Data 22

Appendix D Additional Results: Firm- and Prefecture-Level **24**

D.1 Leads and Lags of Unrest 24

D.2 Robustness to Additional Controls 25

D.3 Differences Between Central State-Owned and Other Firms 29

D.4 Alternative Specifications and Other Robustness Checks 31

D.5 Additional Figures 37

Appendix E Data and Descriptive Statistics: Country Level **41**

E.1 Descriptive Statistics: Recipient Country-Level Data 42

E.2 Correlates of Chinese Aid With Recipient Country Characteristics 43

Appendix F Additional Results and Robustness: Country Level **45**

Appendix A. Additional Background

A.1. Definitions and Types of Development Finance

This paper uses the term "foreign aid" to include any bilateral official finance between government entities of the donor country and government entities of low- and middle-income countries (in line with, e.g., Copper, 2016).

Official finance can be categorized into two broad categories: ODA (Official Development Finance), and OOF (Other Official Flows [Finance]). The former is concessional in nature, aimed at fostering development in recipient countries, and meets the conventional notion of Western foreign aid (including grants and concessional loans). The latter may also be aimed at fostering development, but is less concessional in nature (e.g., loans at commercial rates and export credit) (Bräutigam, 2011*a*). It is much more often employed by the Chinese government, with the stated intent of fostering development in recipient countries, than by Western donors (AidData, 2021).

In contrast to most Western donor countries, China is not in the OECD-Development Assistance Committee (OECD-DAC) and does not explicitly distinguish between ODA and OOF (Bräutigam, 2011*a*). The latter include export credits and loans at commercial interest rates (e.g., LIBOR). Even though such instruments do not meet the strict definition of Western foreign aid, they constitute a subsidy from the recipient country's perspective since China guarantees the debt and recipients would typically not be able to access credit at the same conditions on international financial markets. This is in line with other scholars studying Chinese aid (e.g., Copper, 2016). Note that a significant fraction of US "aid" is also in the form of loans (Bräutigam, 2011*a*).

The OECD-DAC defines ODA as follows, for ODA before 2017 (OECD, 2021):

> *Those flows to countries and territories on the DAC List of ODA Recipients and to multilateral institutions which are: (i) provided by official agencies, including state and local governments, or by their executive agencies; and (ii) each transaction of which: (a) is administered with the promotion of the economic development and welfare of developing countries as its main objective; and (b) is concessional in character and conveys a grant element of at least 25 percent (calculated at a rate of discount of 10 percent).*

The OECD-DAC defines OOF as follows (OECD, 2021):

> *Other official flows (OOF) are defined as official sector transactions that do not meet official development assistance (ODA) criteria. OOF include grants to developing countries for representational or essentially commercial purposes; official bilateral transactions intended to promote development, but having a grant element of less than 25%; and, official bilateral transactions, whatever their grant element, that are primarily export-facilitating in purpose.*

In this paper, I follow the procedures outlined in *AidData's Tracking Underreported Financial Flows (TUFF) Methodology, Version 1.3* (Strange et al., 2017), which adopts the OECD-DAC definitions, to classify Chinese official finance into ODA-like and OOF-like.

Table A.1 gives an overview of the different types of development finance extended by Chinese government entities. Note that only the Ministry of Commerce is authorized to provide grants and interest-free loans, and only the China Export-Import Bank is authorized to extend concessional loans (i.e., loans at an interest rate below a competitive international rate such as the LIBOR).

Table A.1: Types of Chinese Development Finance

Type	**Creditor**	**Approximate Terms**
Grants / turnkey projects, in-kind donations, technical assistance	Ministry of Commerce	no repayment
Interest-free loans	Ministry of Commerce	0% interest rate, 20 year maturity, 5 year grace period
Concessional loans, preferential export buyer's credits	China Export-Import Bank	2-3% interest rate, 20 year maturity, 5 year grace period
Commercial loans, export credits, other financing	China Development Bank, China Export-Import Bank, state-owned commercial banks, other government entities	LIBOR plus spread, 13 year maturity, 0-5 years grace period

Note: Drawing on information from Bräutigam (2011*b*), Zhang and Smith (2017) and Horn, Reinhart and Trebesch (2019).

A.2. Differences Between OECD and Chinese Development Finance

Table A.2 provides an overview of differences between development finance provided by OECD-DAC donors and China that are commonly pointed out by scholars of foreign aid.

Table A.2: Differences Between OECD and Chinese Development Finance

Characteristic	**OECD**	**China**
Type of Financing	primarily ODA, including grants and concessional loans	ODA and OOF, including loans at commercial rates and export credits
Type of Assistance	emphasis on social sectors and services	emphasis on infrastructure and production
Procurement	financing and procurement typically untied	financing typically conditional on $> 50\%$ of goods sourced from China
Conditionality	economic and political conditions common (e.g., governance, human rights)	no official conditions related to domestic governance of recipient country
Reporting	official flows reported to Creditor Reporting System	no official data
Guiding Principles	(i) ownership, (ii) harmonization, (iii) alignment, (iv) results, (v) mutual accountability.	(i) equality and mutual benefit, (ii) respect for sovereignty with no conditions attached, (iii) promote self-reliance, not dependency, (iv) quick results, (v) use best-quality equipment of Chinese manufacture, (vi) emphasize technology transfer, (vii) Chinese experts will live at the standard of local experts.

Note: OECD-DAC stands for The Organisation for Economic Co-operation and Development's Development Assistance Committee. ODA stands for Official Development Assistance. OOF stands for Other Official Finance and includes other financing instruments such as loans at commercial rates and export credits. Sources: Bräutigam (2011*a*), Bräutigam (2011*b*), State Council (2011), State Council (2014), and OECD (2021).

A.3. Chinese Government Entities and the Foreign Aid Allocation Process

Figure A.1 gives a stylized overview of the most important (for the purposes of this paper) Chinese government entities involved in China's development finance.[72] As seen in Figure A.3, the two most important providers of Chinese development finance are the central government's two main policy banks: the China Export-Import Bank (CEXIM), and the China Development Bank (CDB).[73] They are owned and supervised by the State Council, the chief administrative authority of the People's Republic of China (synonymous with the central government). In the case of CDB, the ownership is through the Ministry of Finance and Central Huijin Investment, with the latter acting as the main shareholder of China's state-owned commercial banks on behalf of the State Council. The Chinese central government guarantees the policy banks' debt, allowing them to raise capital on national and international financial markets at favorable conditions (Zhang and Smith, 2017).

CEXIM is the only creditor authorized to issue concessional loans (see Table A.1). It cooperates with the Department of Foreign Aid of the Ministry of Commerce, which is the main entity responsible for ODA-like foreign aid projects (i.e., grants, interest-free loans, and concessional loans). CEXIM raises the principal of the loans on capital markets and the Ministry of Commerce subsidizes the interest rate. In addition, like CDB, CEXIM also extends commercial loans, for example for large-scale infrastructure projects and for the purposes of export promotion.[74]

The large state-owned commercial banks have also started extending overseas finance to developing countries. They include the Bank of China, the Agricultural Bank of China, the Industrial and Commercial Bank of China, and the China Construction Bank.[75] These banks have grown rapidly over the last years and constitute the world's largest banks measured by total assets (Horn, Reinhart and Trebesch, 2019). Finally, some other central state-owned enterprises, owned and administered by the central State-owned Assets Supervision and Administration Commission (SASAC), themselves extend financing to developing country governments. However, their share of overall Chinese official finance is small (see Figure A.3).

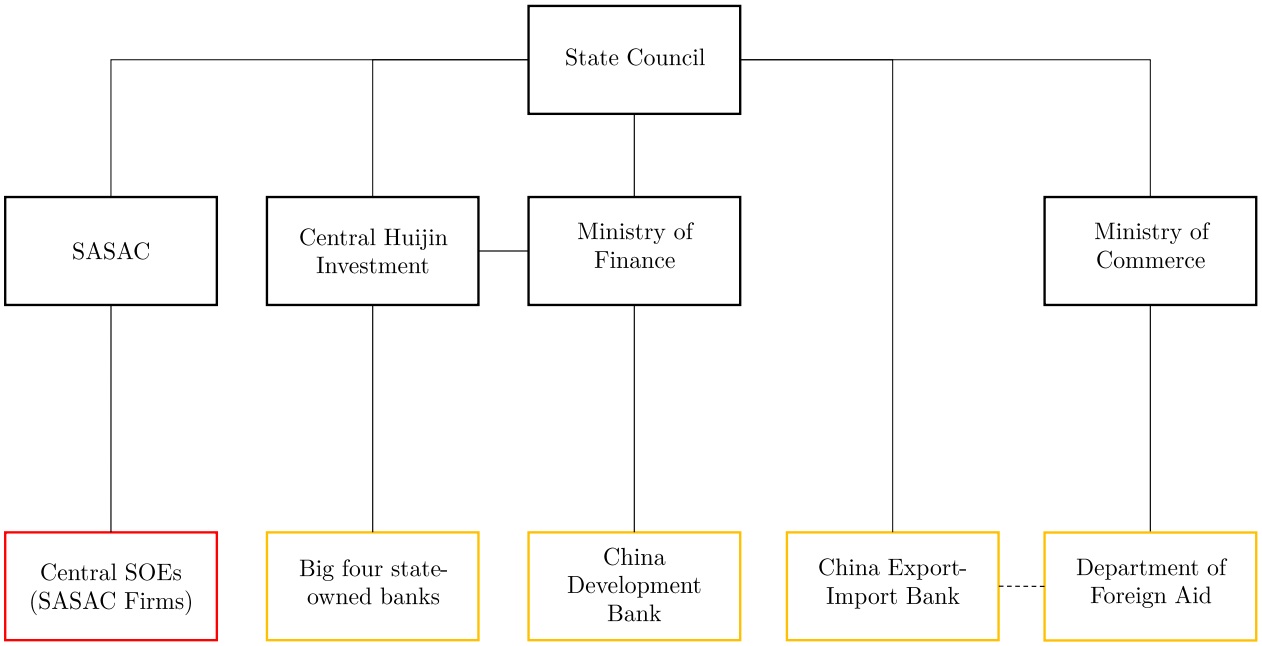
[72] Note that the political process described here corresponds to the period studied in this paper (2005 to 2015). The aid allocation process has changed in some aspects with the creation of China's International Development Cooperation Agency (CIDCA) in 2018 (Lynch, Andersen and Zhu, 2020).

[73] The third policy bank is SINOSURE, which provides export insurance. It is not relevant for the purposes of this paper.

[74] I include such loans to developing countries in my main measure of foreign aid even though they cannot be classified as ODA. See the discussion in Appendix A.1.

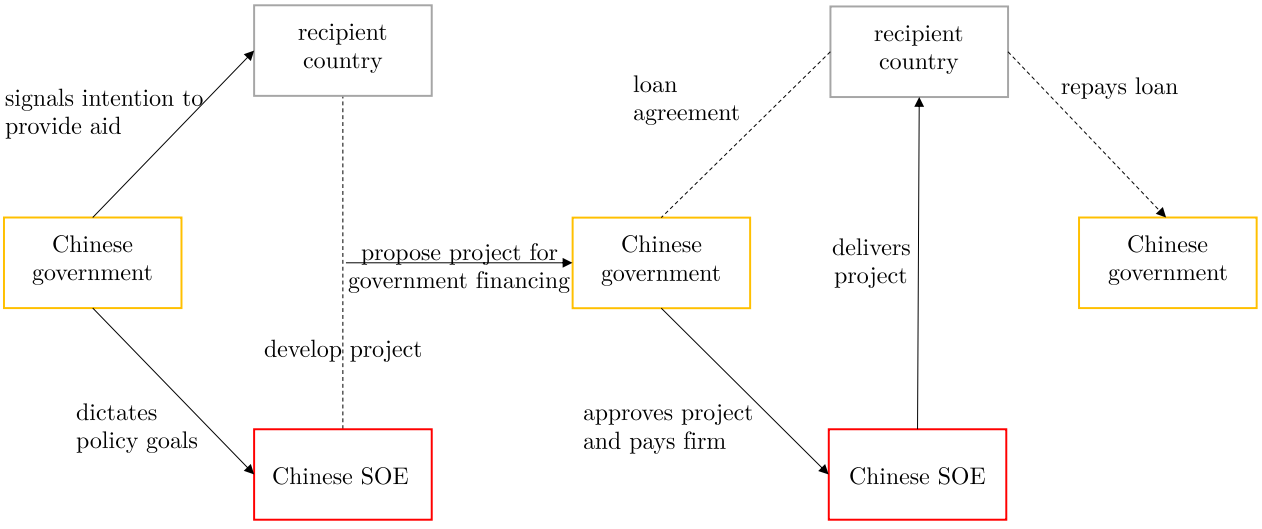
[75] A further large state-owned commercial bank is the China Communications Bank.

Figure A.1: Organization Chart of Relevant Government Entities (Simplified)



Note: This figure shows a simplified overview of China's main official finance agencies (in red) and other central government entities. The China Export-Import Bank and the China Development Bank are state-owned policy banks under the direct supervision of the State Council. The big four state-owned banks include the Bank of China, the Agricultural Bank of China, the Industrial and Commercial Bank of China, and the China Construction Bank. Black lines indicate ownership. Based on information from government websites, Zhang and Smith (2017), Horn, Reinhart and Trebesch (2019) and Brautigam and Hwang (2020).

Figure A.2: The Chinese Foreign Aid Project Allocation Process (Simplified)



Note: Own illustration based on Gu, Chen and Zhang (2014), Zhang and Smith (2017) and Brautigam and Hwang (2020).

Appendix B. Details on the Micro Data

B.1. Project-Level Aid Data

The Chinese government does not publish comprehensive, disaggregated data on the foreign aid projects it finances. Several academic initiatives have attempted to fill this gap recently by collecting unofficial project-level data, drawing on sources such as news reports, government publications by Chinese embassies and recipient country ministries, and case studies undertaken by scholars and NGOs. These datasets typically specialize on projects in one geographic area, sector or time period, or lack information on the involved contractors.

I combine data from several such sources to construct a project-level dataset encompassing the universe of publicly known Chinese aid projects involving Chinese contractors, committed in 2005 to 2015.[76] Table A.3 lists the public databases I use to construct my project-level dataset. An excellent overview of these sources and their methodologies is given by Horn, Reinhart and Trebesch (2019). In addition to these secondary sources, I also draw on a number of primary sources, including government and company websites, news articles, and academic papers.

The starting point of my dataset is AidData's *Geocoded Global Chinese Official Finance Database* (Dreher et al., 2021). The project-level dataset systematically collects publicly available information on all known Chinese official finance, based on the scraping of thousands of primary sources, in 2000 to 2014. The method underlying this data collection effort is described in detail in Strange et al. (2017). I follow the conventions of Dreher et al. (2021) by excluding umbrella agreements and lines of credit from the sample. Importantly, for the purposes of this paper, the database also records information on the implementing contractors, albeit this information is only recorded at the conglomerate level for many projects. I identify all projects involving Chinese contractors from this database and collect further information on the contractors from the primary sources indicated by AidData (see Section 3.2).

I use several other, more specialized databases to extend the temporal coverage, to find additional foreign aid projects involving Chinese contractors, and to verify the information provided by AidData. First, AidData's *China's Public Diplomacy in East Asia and Pacific Database* provides data on Chinese foreign aid projects in Asia and Oceania during 2000 to 2016 (Custer et al., 2018). It employs the same methodology as AidData's *Geocoded Global Chinese Official Finance Dataset*. In addition to extending the temporal coverage, it helps fill in gaps with regard to the information on Chinese contractors.

Second, the *China-Africa Loan Database* by the Johns Hopkins China-Africa Research Initiative (SAIS-CARI) (Brautigam et al., 2019) provides data on Chinese loans to 55

[76] I restrict the sample to 2005 to 2015 given both the availability of data on foreign aid projects and other important data used in the paper, such as administrative firm-level data and data on labor unrest events.

countries in Africa from 2000 to 2017. There is considerable overlap with the AidData database. With the help of several Chinese-speaking research assistants, I carefully check the data for potential duplicates and conduct further research using primary sources in the few cases where the data are contradictory.

Third, I use data on global fossil fuel, nuclear power, and renewable energy sector projects since 2000 from the *Global Energy Finance Database* at Boston University (Gallagher, 2021). Fourth, I draw on the *China-Latin America Finance Database* by the Inter-American Dialogue (Gallagher and Myers, 2021), which provides data on official loans by the Chinese government to governments in Latin America in 2005 to 2018. Finally, I complement my dataset with data from the *Competitiveness Reports* by the US Export-Import Bank since 2013, which focuses on projects financed by the China Export-Import Bank (Export-Import Bank of the United States, 2021). Again, I cross-check and verify the projects and recorded data using primary sources. I harmonize the variables across datasets, following the methodology by Strange et al. (2017). Further details and replication files are available on request.

The resulting project-level database covers the publicly known universe of Chinese aid projects in low- and middle-income countries implemented by Chinese contractors. Section 3.2 provides descriptive evidence.

Table A.3: Data Sources on Chinese Foreign Aid, 2005–2015

Institution	Dataset / Source	Geographic Coverage	Time Coverage	Type
AidData at William & Mary	Geocoded Global Chinese Official Finance Dataset Version 1.1.1	Global	2000–2014	Loans, grants
AidData at William & Mary	China's Public Diplomacy in East Asia and Pacific Version 1.0	East Asia & Oceania	2000–2016	Loans, grants
Johns Hopkins CARI	China-Africa Loan Database	Africa	2000–2017	Loans
Boston University GDPC	Global Energy Finance Database	Global	2000–2018	Loans
Inter-American Dialogue	China-Latin America Finance Database	Latin America	2005–2018	Loans
US Export-Import Bank	Competitiveness Reports	Global	2013–2018	Loans
Gelpern et al. (2021)	How China Lends Version 1.0	Global	1999–2020	Loans
Mueller (2021)	Merged database	Global	2005–2015	Loans, grants

Note: This table summarizes the data sources underlying the project-level dataset on Chinese foreign aid used in this paper. References: AidData's Geocoded Global Chinese Official Finance Dataset Version 1.1.1 (AidData Research and Evaluation Unit, 2017; Bluhm et al., 2018; Dreher et al., 2021), AidData's China's Public Diplomacy in East Asia and Pacific Version 1.0 (Custer et al., 2018), SAIS CARI China-Africa Loan Database (Brautigam et al., 2019), Boston University's Global Energy Finance Database (Gallagher, 2021), Inter-American Dialogue's China-Latin America Finance Database (Gallagher and Myers, 2021), and Export-Import Bank of the United State's Competitiveness Reports 2014–2016 (Export-Import Bank of the United States, 2021).

B.2. Constructing and Linking the Firm Panel

To construct the firm-year panel, I first identify the set of potential Chinese aid contractors from archival administrative records by the Chinese Ministry of Commerce.[77] The list contains the names and addresses of all firms and subsidiaries licensed to supply overseas construction projects, in both Chinese and English. I next determine during which years each firm was active (i.e., eligible to supply aid projects) by manually linking firms to the official transaction-level *Chinese Customs Trade Statistics* (CCTS) by the Chinese Customs Office, using firm names and addresses (see Appendix B.3 for details). For each firm, I keep all years between the first and last year of positive firm exports.[78] The result is an unbalanced firm-year panel of the universe of potential domestic Chinese aid contractors.

I link the panel to various other administrative datasets from China. First, I use the Chinese credit registry[79] to find each firm's ultimate controller to determine whether the firm is owned by the central government. I classify a firm as a central state-owned firm if it was ever majority-owned by the central SASAC, either directly or through its parent companies.[80] Second, to get firm characteristics such as the number of employees, assets, and revenue, I link my sample to firm-level data from the *National Tax Survey Database* (NTSD) using names and addresses. Since the tax survey data is a stratified random sample of all Chinese firms, I can only link a subset of my sample. I follow standard procedure in the literature and remove observations with less than ten employees, negative fixed assets or revenue, as well as outliers. See Liu and Mao (2019) for a detailed description of the data and Appendix B.4 for further details. Third, for complementary analyses, I use data from the *China Stock Market and Accounting Research Database* (CSMAR), which contains comprehensive data on firms listed on Chinese stock exchanges. I describe the variables constructed from this dataset as I introduce them in Section 3.

Finally, I link the project-level data described in Section 3.2 to the firm-year panel. I expand on the existing literature by systematically collecting and harmonizing information about the Chinese contractors involved in Chinese aid projects. While some of the existing unofficial databases (see Appendix B.1) provide names of contractors implementing a project, the names are not harmonized and typically only identify the firm group (conglomerate) rather than the local firm (subsidiary) that actually implements the project. This has so

[77] URL: http://xzsx.mofcom.gov.cn:80/xzsp/advSearch.jhtml, accessed using the *Internet Archive Wayback Machine* in June 2020 (URL: https://archive.org/web/).

[78] Firms are not included in the panel in years before they entered or after they exited (e.g., due to mergers) because they were not able to supply aid projects in those years. In addition, there may be duplicates in the MOFCOM list, for example, due to name changes of firms over time. The customs data provide a unique 10-digit firm identifier that is constant over time.

[79] Accessed in July 2020 through https://aiqicha.baidu.com/.

[80] Companies supervised by the SASAC have continuously been reduced through mergers and privatization since its foundation in 2003. However, virtually all SASAC-administered firms in my sample remained under the SASAC throughout 2003 to 2015.

far prevented researchers from linking data on projects to firms and conducting systematic micro-analysis of the role of firms in Chinese foreign aid. To address this challenge, whenever possible I identify the actual implementing contractor (i.e., the subsidiary) from the original sources underlying the unofficial databases on Chinese aid.

I manually find the best match between the MOFCOM list of potential contractors and the firm names mentioned in the projects data, and, when necessary, use firm export patterns in the customs data and additional sources, such as company websites, to improve the matching. Two Chinese-speaking research assistants independently verified the linking. 96% of all projects can be unambiguously linked to a firm in the MOFCOM list. I exclude from my sample the 4% of projects that cannot be linked.

The resulting main variables are the number and financial value of aid contracts committed to a firm in a year. The number of contracts is the preferred outcome variable as it is less likely to suffer from potential measurement error than the financial value of contracts. In addition, information on the financial value is missing for 10% of all projects in the sample. I calculate the financial value of a contract assigned to a firm in a year as the financial value of the entire project committed in that year, divided by the number of Chinese firms involved in the project. I do not observe the confidential details of the actual contracts underlying the projects, such as the exact payment made to each firm or subcontracting.

B.3. Customs Data

The Chinese Customs Trade Statistics (CCTS) by the Chinese Customs Office provides information on the universe of Chinese export and import transactions during 2003 to 2015. For each transaction, the database includes a unique firm identifier, firm name, firm address (including the firm's home prefecture), import/export value and quantity, the product code at the HS 8-digit level, and the country of origin/destination. I aggregate the data to the firm-year level. I use this data to determine during which years a firm was active and thus eligible to contract aid projects (see Appendix B.2). In addition, I use the data to help identify the aid contractor in cases where the sources on aid projects are ambiguous, for example because they only provide the name of the conglomerate implementing the aid project, using patterns in the data such as the destination countries of exports. Finally, I use the data to construct controls and other variables at the country-prefecture level for the analysis in Section 4.

B.4. Tax Survey Data

I complement my firm panel with data from the *National Tax Survey Database* (NTSD) from 2007 to 2015. The firm-year level dataset contains rich information on firms' financials, tax payments, employment, and other characteristics. The survey is conducted annually by the State Administration of Taxation of China and the Ministry of Finance of China (SAT-MOF). It surveys all large firms as well as a stratified random sample of smaller firms. The database is used by the Chinese government to evaluate the impacts of tax policies such as the "Golden Tax Project". As Liu and Mao (2019) argue, various checks and balances make misreporting by firms unlikely and the data are verified by local tax agencies. The NTSD is unique in that it is the only firm-level database that contains comprehensive information on Chinese firms' financial values and other variables such as employment, covers all sectors, and firms of all sizes.[81]

Despite the checks and balances designed to ensure the accuracy of the tax data, several data cleaning steps are necessary to reduce noise in the data stemming from potential misentries. First, in line with Liu and Mao (2019), I set as missing entries with fewer than 10 employees and non-positive values in the main variables used in the working sample (fixed assets, operating income, and exports). Second, I trim the top and bottom percentiles of all entries in the data. Third, for each variable, I set as missing entries that exceed one standard deviation from a firm's sample mean, affecting approximately the top and bottom decile of entries within each variable. This last step is necessary since some entries are implausibly different for some years compared to a firm's entries in other years, likely due to data entry errors. Finally, I drop firms that change their tax identification number over time to ensure comparability of the data over time. After imposing these restrictions, I link the NTSD data with my main sample using firm names and home prefectures. The resulting sample contains data from the tax survey for 298 central state-owned and 425 other firms.

B.5. Unrest Data

I combine data on labor unrest in China from two sources, the *China Strikes Crowdmap* for 2004 to 2011 (https://chinastrikes.crowdmap.com/feeds?page=1762&l=ps&l=fa) and the *China Labour Bulletin* for 2012 to 2014 (https://clb.org.hk/). See Campante, Chor and Li (2019) and Qin, Strömberg and Wu (2019) for a description of the latter data source. The unrest events are geo-coded by the original authors. However, the location data in the CLB data provided to me sometimes lacked information or appeared to be coded incorrectly (e.g.,

[81] The other large firm-level dataset used by researchers is the Annual Survey of Industrial Firms (ASIF) conducted by the National Bureau of Statistics of China. In contrast to the NTSD, ASIF contains only large firms in the manufacturing sector and may suffer from reporting bias (Brandt, Van Biesebroeck and Zhang, 2014).

the Chinese provinces Shanxi and Shaanxi were confused). I completed the missing location data using regular expressions and manual checks, which I shared and verified with the CLB team. In addition, I drop labor unrest events involving foreign companies. I classify labor unrest events into two broad sectors, industry and services, based on variables and keywords contained in the event descriptions in the original datasets. The industrial sector includes: construction ("construction"), manufacturing ("manufacturing", "factory", "processing", "plant", "shipbuilding", "steel", "chemical", "plastic", "glass", "paper"), mining and processing ("mining", "mine", "oil", "iron", "coal") and transport ("train", "bus", "air", "logistics"). The service sector includes: education ("school", "teacher",) and other services ("service", "taxi", "office", "restaurant", "retailer", "telecommunication", "bank", "hospital", "doctor", "department store", "pharma", "tourism", "sport", "shop", "beauty"). Using these keywords, all unrest events can be classified in one of the two broad sectors.

Table A.4 provides several representative examples of unrest events recorded in the final dataset.

Table A.4: Examples of Unrest Events

Year	Prefecture, Province	Description
2005	Dongying, Shandong	Shengli oil field workers protest over restructuring
2005	Shenzhen, Guangdong	State-owned construction company workers protest
2008	Shanghai, Shanghai	Huanxin / Yixin electronics factory workers protest over wage arrears
2009	Zhengzhou, Henan	Linzhou Iron and Steel Company protest
2010	Jingzhou, Hubei	Teachers protest by kneeling in front of the government building in Gong'an County
2011	Yongzhou, Hunan	Yuejin machinery factory workers strike
2011	Wenshan, Yunnan	Railway construction workers protest against violence
2012	Honghe, Yunnan	Miners march toward city government buildings, protesting factory move
2013	Wuhan, Hebei	Gas company workers stage strikes against merger
2013	Yulin, Shaanxi	Taxi drivers strike, demanding the government to crack down on illegal counterparts
2014	Chifeng, Inner Mongolia	Over 1000 steel workers demand six months of wages in arrears at local government

Note: Data for 2004 to 2011 is from the *China Strikes Crowdmap* and data for 2012 to 2014 is from the *China Labour Bulletin* (CLB). Examples selected among unrest events estimated to involve > 1000 participants. Descriptions are abbreviated from the original data by the author for ease of exposition.

B.6. Other Micro Data

I construct a measure of firms' political connections to the Chinese government by linking their top executives to the biographies of high-ranking CCP members provided by Shih, Adolph and Liu (2012) and Jiang (2018). The data on firm executives and board members are from the CSMAR database and include the subset of publicly listed firms. For unlisted firms that are part of larger conglomerates, I use the information from listed firms in the same conglomerate. I code a firm as politically connected if a current member of the Central

Committee, comprising the Chinese Communist Party's 376 top leaders, is or used to be a top executive or board member of the firm.

Finally, I collect a set of socio-economic variables at the prefecture-year level from the *China City Statistical Yearbooks*, including local population, GDP, urban employment, wages, and local government revenues and expenditures. The *China City Statistical Yearbooks* data are based on official statistics by the Chinese government. Data on prefecture-level exports come from the official customs data described in Appendix B.3. I provide prefecture-level descriptive statistics in Table A.8.

Appendix C. Additional Descriptive Statistics and Figures: Micro Data

C.1. Project-Level Aid Data

Table A.5: 10 Largest ODA-Like Chinese Foreign Aid Projects by Financial Value

Country	Year	Amount	Short Description	Contractor
Kenya	2014	1600	Mombasa-Nairobi Standard Gauge Railway	China Road and Bridge Co.
Cameroon	2009	1052	Water Distribution Project	China National Machinery Import and Export Co.
Tanzania	2012	973	Mnazi Bay to Dar Es Salaam Gas Pipeline	China Petroleum Technology and Development Co.
Nigeria	2006	920	Modernization of Nigeria Railway	China Civil Engineering Construction Co.
Ivory Coast	2013	890	Abidjan Port	China Harbor Engineering Co.
Chad	2011	777	N'Djamena International Airport	China CAMC Engineering Co.
Mozambique	2011	757	Maputo-Catembe Bridge	China Road and Bridge Co.
Sudan	2014	700	New Khartoum International Airport	China Harbor Engineering Co.
Senegal	2015	699	Thies-Touba Toll Highway	China Road and Bridge Co.
Nigeria	2010	629	Railway Modernization Project	China Civil Engineering Construction Co.

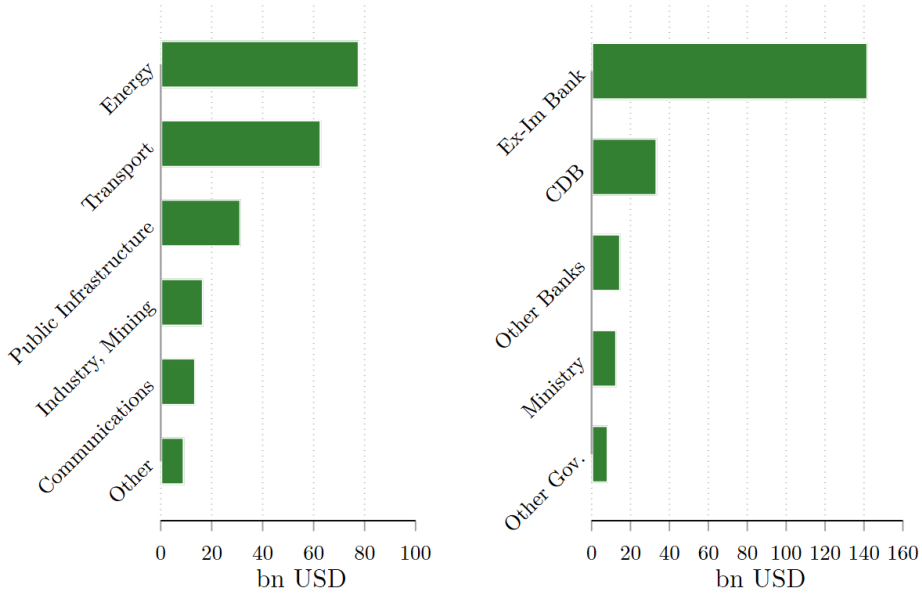
Note: Financial amounts are in million constant USD.

Table A.6: 10 Largest OOF-Like Chinese Foreign Aid Projects by Financial Value

Country	Year	Amount	Short Description	Contractor
Turkmenistan	2009	4551	South Yolotan Osman Field Development	Chuanqing Exploratory Drilling Engineering Co.
Venezuela	2011	4440	Housing Projects	China CITIC Construction Co.
Myanmar	2009	3257	Sino-Myanmar Pipeline	China Petroleum Engineering and Construction Co.
Angola	2010	3144	Kilamba Kiaxi New Town	China CITIC Construction Co.
Belarus	2013	3050	China-Belarus Industrial Park	China CAMC Engineering Co.
Egypt	2015	2898	New Administrative Capital Infrastructure	China State Construction Engineering Co.
Bangladesh	2015	2615	Padma Rail Link	China Railway First Group Co.
Uzbekistan	2011	2422	Central Asia-China Gas Pipeline	China Petroleum Engineering and Construction Co.
Iran	2014	2143	Railway Electrification	China National Machinery Import and Export Co.
Argentina	2014	2090	Belgrano Cargas Train Line	China Machinery Engineering Corporation

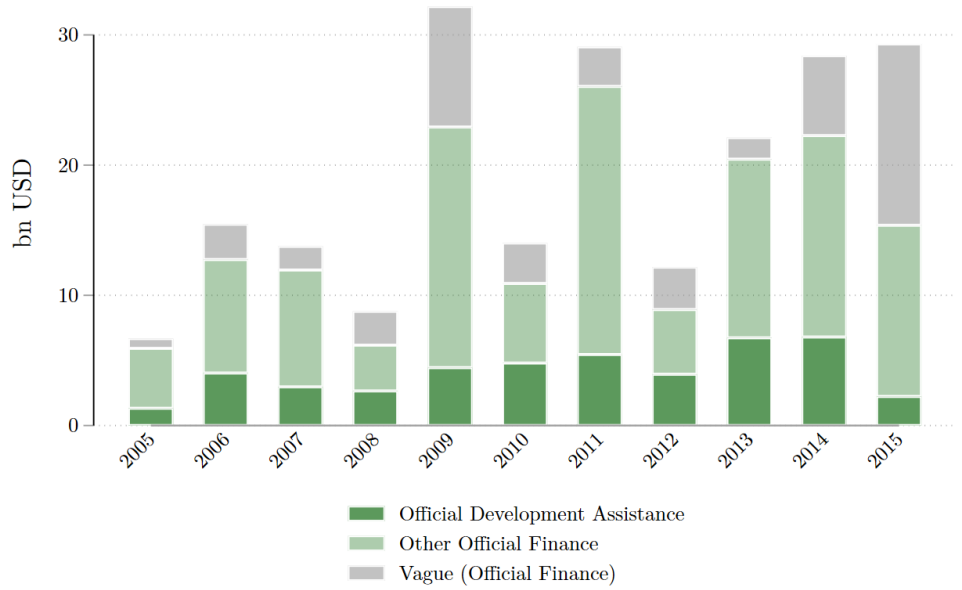
Note: Financial amounts are in million constant USD.

Figure A.3: Financial Value of Chinese Foreign Aid Projects, by Sector and Funding Agency



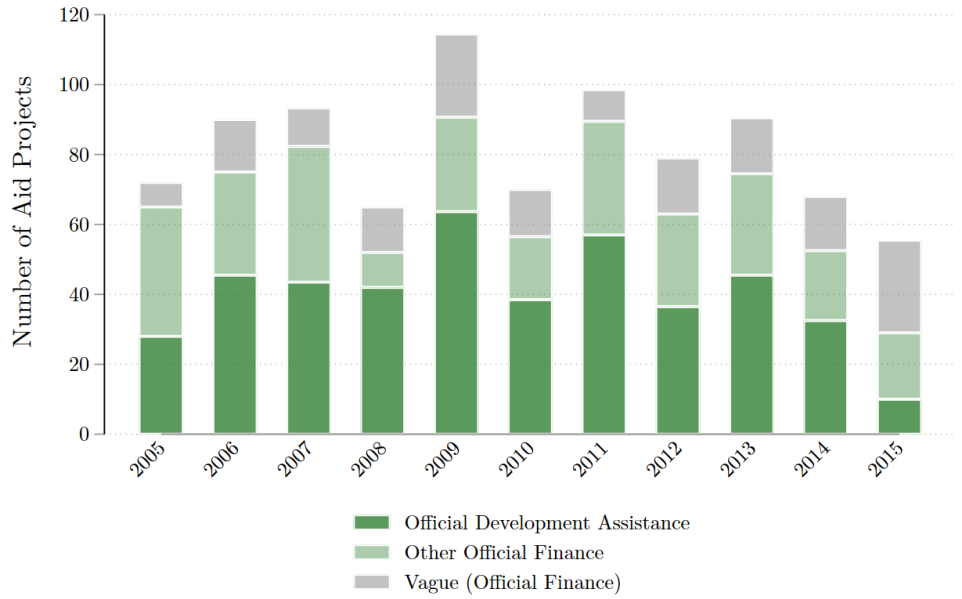
Note: This figure shows the total financial value of all Chinese foreign aid projects implemented by Chinese firms in the sample, by sector and funding agency: Export-Import Bank of China (Ex-Im Bank), China Development Bank (CDB), other state-owned banks, central government ministries, and other government entities. Financial amounts are in constant 2014 USD.

Figure A.4: Financial Value of Chinese Foreign Aid Projects, by Year and Type of Finance



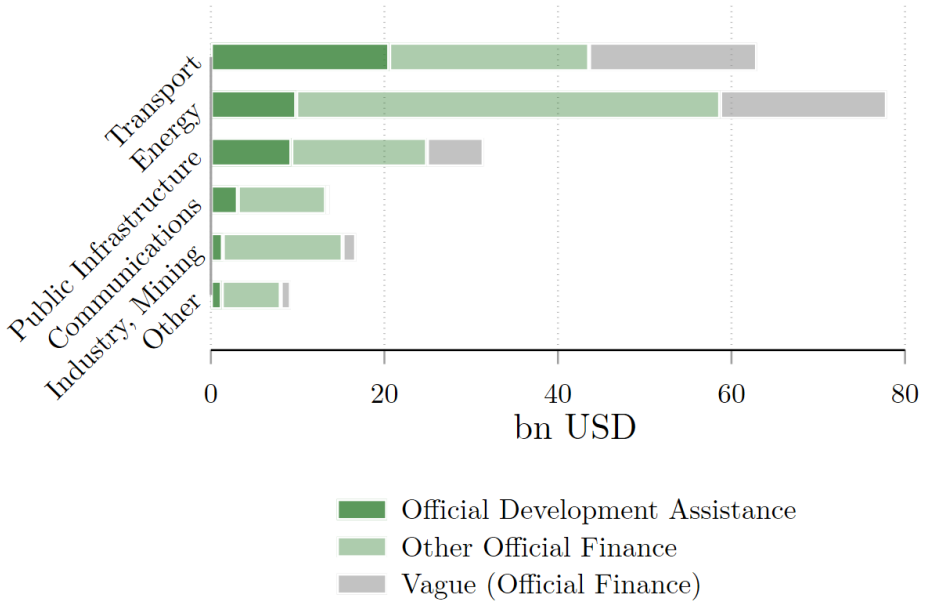
Note: This figure shows the total financial value of all Chinese foreign aid projects implemented by firms in the sample, by year and type of finance. Financial amounts are in constant 2014 USD.

Figure A.5: Number of Chinese Foreign Aid Projects, by Year and Type of Finance



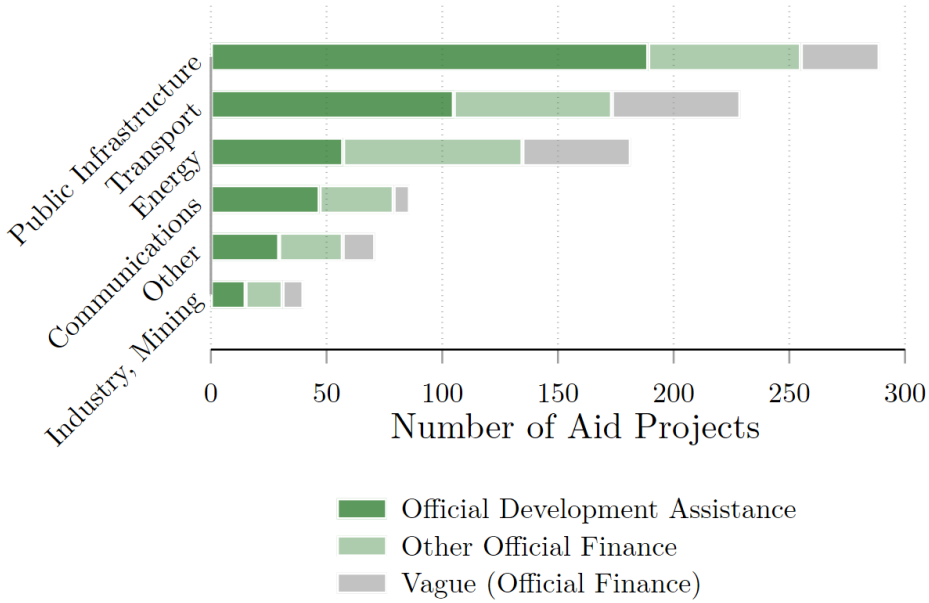
Note: This figure shows the total number of all Chinese foreign aid projects implemented by firms in the sample, by year and type of finance.

Figure A.6: Financial Value of Chinese Foreign Aid Projects, by Sector and Type of Finance



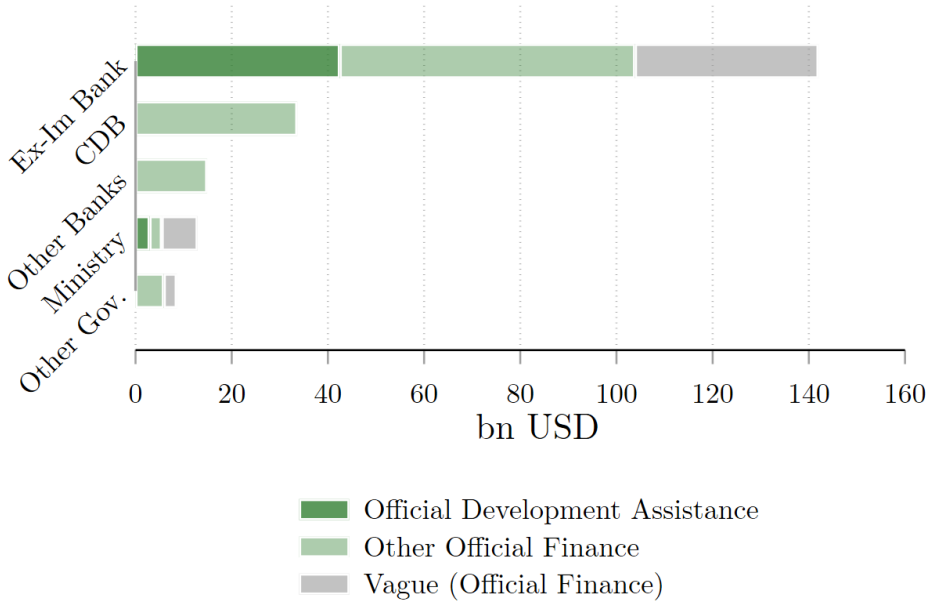
Note: This figure shows the total financial value of all Chinese foreign aid projects implemented by firms in the sample, by the sector of the project and the type of finance. Financial amounts are in constant 2014 USD.

Figure A.7: Number of Chinese Foreign Aid Projects, by Sector and Type of Finance



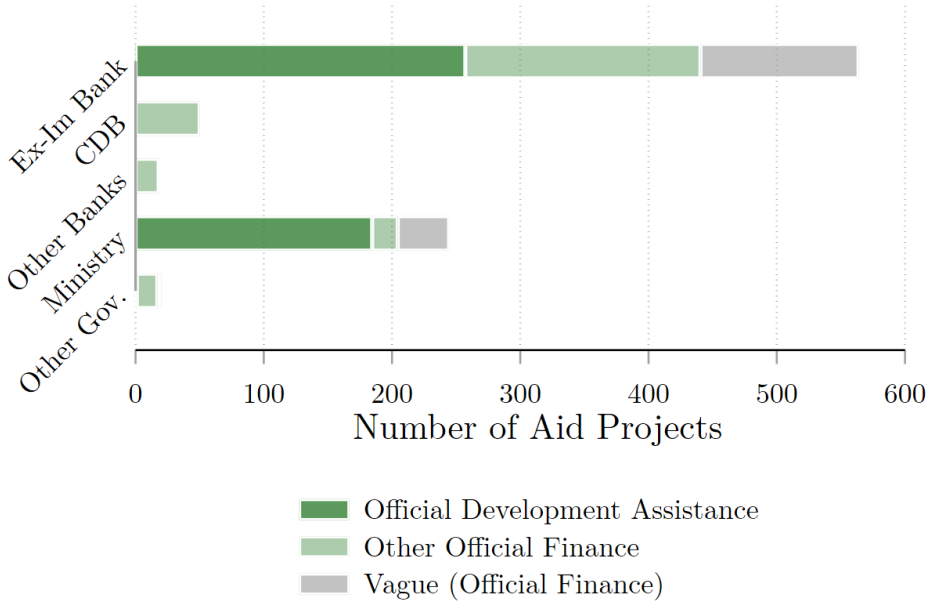
Note: This figure shows the total number of Chinese foreign aid projects implemented by firms in the sample, by the sector of the project and the type of finance.

Figure A.8: Financial Value of Chinese Foreign Aid Projects, by Funding Agency and Type of Finance



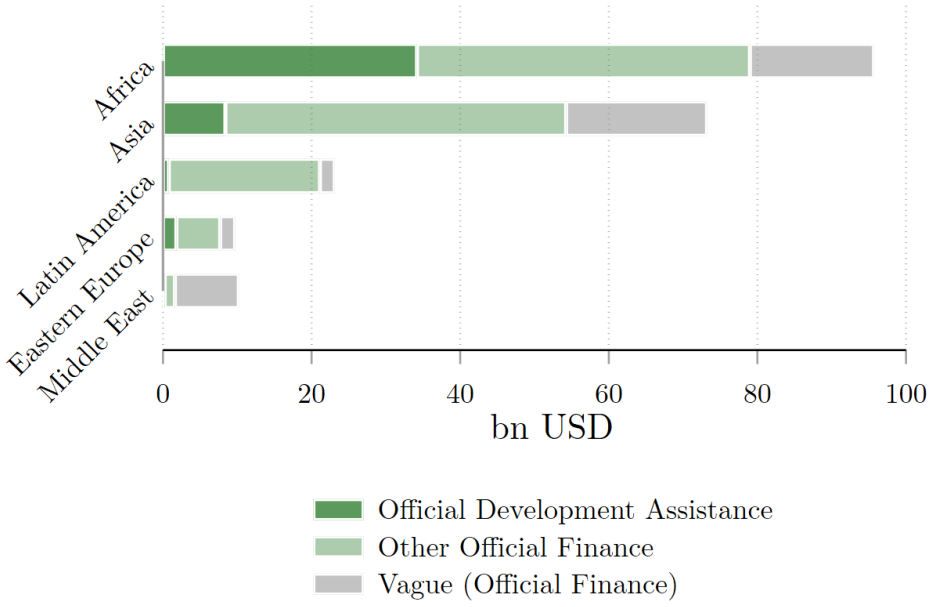
Note: This figure shows the total financial value of all Chinese foreign aid projects implemented by firms in the sample, by the funding agency of the project and the type of finance. Financial amounts are in constant 2014 USD.

Figure A.9: Number of Chinese Foreign Aid Projects, by Funding Agency and Type of Finance



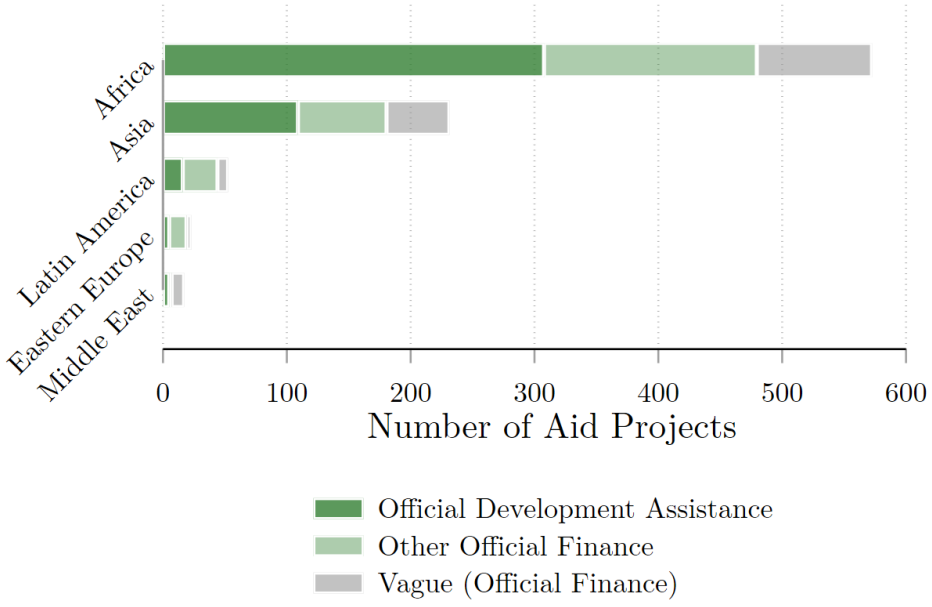
Note: This figure shows the total number of Chinese foreign aid projects implemented by firms in the sample, by the funding agency of the project and the type of finance.

Figure A.10: Financial Value of Chinese Foreign Aid Projects, by Region and Type of Finance



Note: This figure shows the total financial value of all Chinese foreign aid projects implemented by firms in the sample, by recipient region and type of finance. Financial amounts are in constant 2014 USD.

Figure A.11: Number of Chinese Foreign Aid Projects, by Region and Type of Finance



Note: This figure shows the total number of Chinese foreign aid projects implemented by firms in the sample, by recipient region and type of finance.

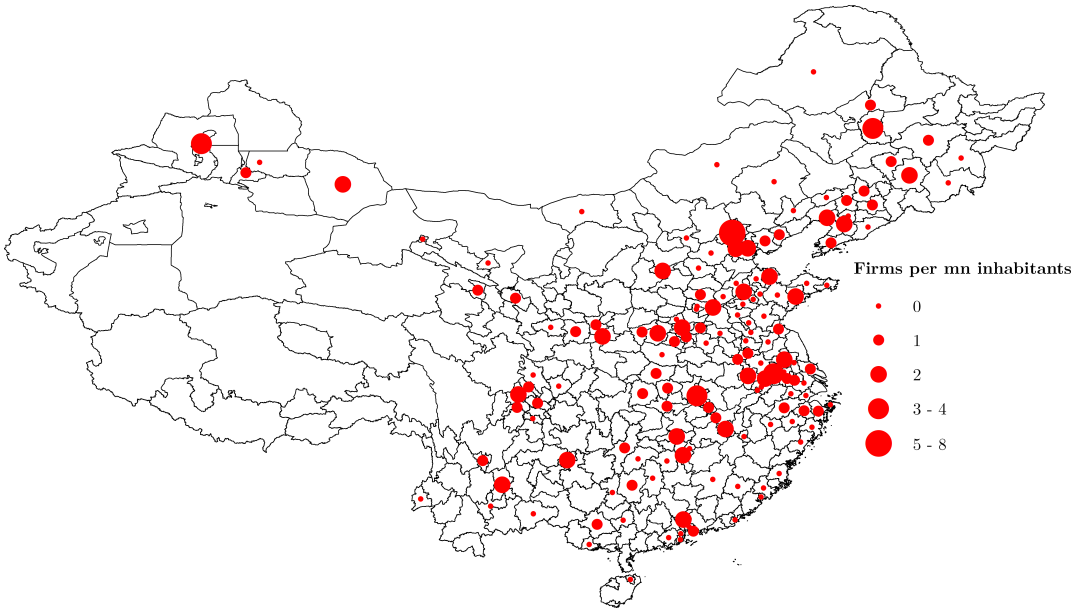
C.2. Firm-Level Data

Table A.7: Descriptive Statistics: Firm-Level Variables

	N	Mean	SD	Min	Max
Panel A. Central State-Owned Firms					
Number of Yearly Chinese Aid Contracts	3,532	0.154	0.688	0	13
Financial Value of Yearly Chinese Aid Contracts (mn)	3,532	45.57	280.5	0	4,570
Number of Employees*	1,095	1,408	2,350	18	20,224
Fixed Assets (mn)*	1,000	100	210	0	2,082
Operating Income (mn)*	1,060	540	741	0	4,648
Exports (mn)*	1,214	128	211	0	1,329
Panel B. Other Firms					
Number of Yearly Chinese Aid Contracts	5,109	0.048	0.332	0	9
Financial Value of Yearly Chinese Aid Contracts (mn)	5,109	3.238	37.81	0	1,227
Number of Employees*	1,444	1,152	1,966	18	19,655
Fixed Assets (mn)*	1,326	56	141	0	1,932
Operating Income (mn)*	1,445	313	523	1	4,612
Exports (mn)*	1,757	81	165	0	1,225

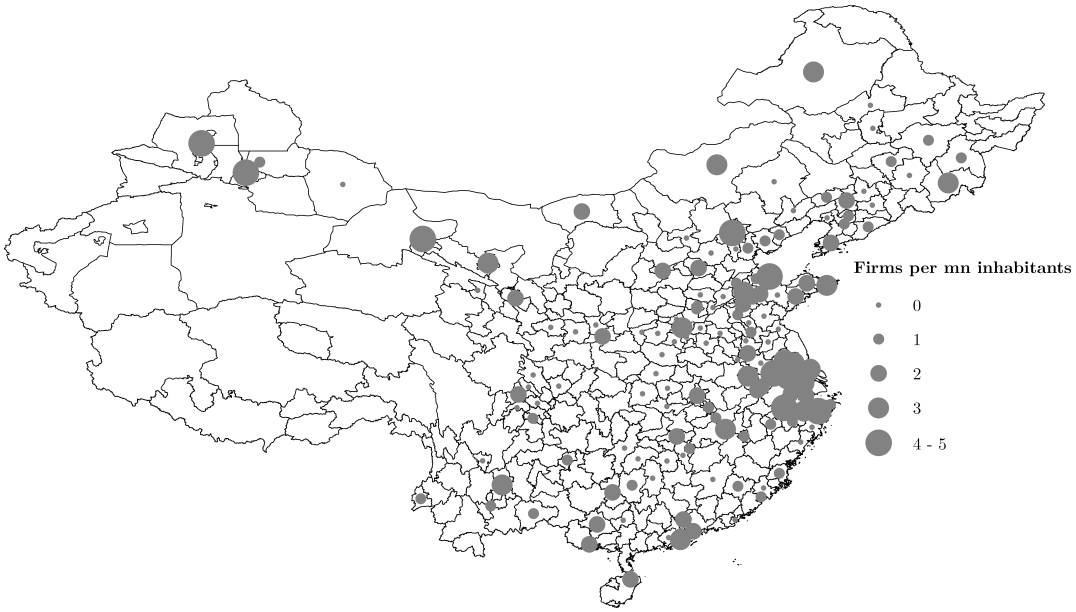
Note: Financial amounts are in constant 2014 USD. *Variables are from the firms in the 2007–2015 tax survey, which includes only a subsample of Chinese firms. See Appendix B.4 for details.

Figure A.12: Distribution of Central State-Owned Firms Across China



Note: This map shows the locations of central state-owned firms in the sample across Chinese prefectures. Each dot is proportional in size to the number of firms per million inhabitants in each prefecture.

Figure A.13: Distribution of Other Firms Across China



Note: This map shows the locations of firms other than central state-owned firms in the sample across Chinese prefectures. Each dot is proportional in size to the number of firms per million inhabitants in each prefecture.

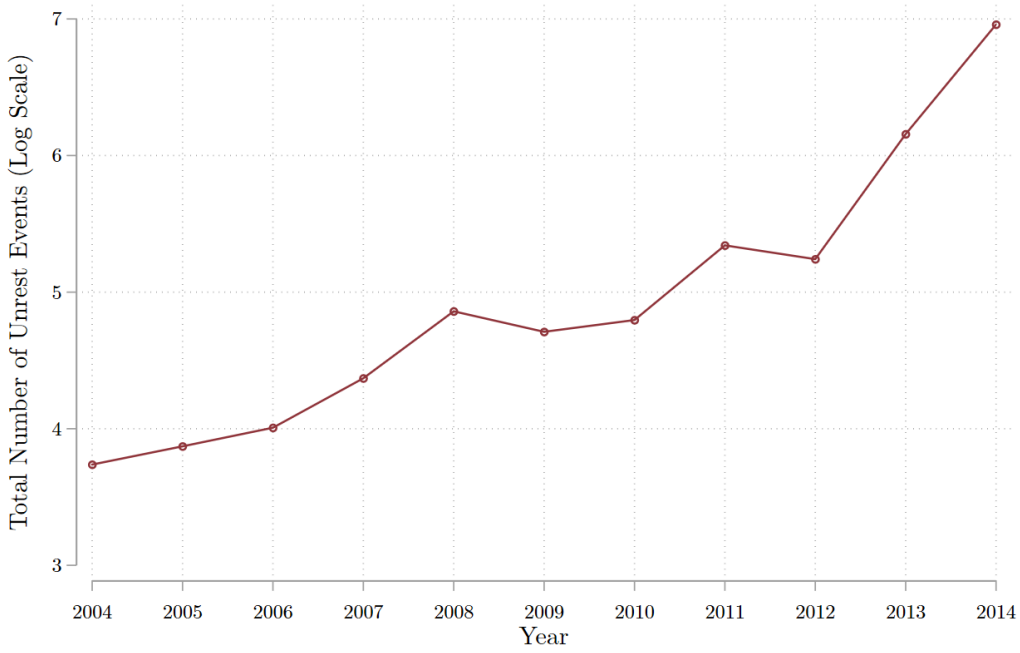
C.3. Prefecture-Level Data

Table A.8: Descriptive Statistics: Prefecture-Level Variables

Variable	N	Mean	SD	Min	Max
Number of Labor Unrest Events per Million Inhabitants	1,339	0.19	0.43	0.00	4.32
Population (million)	1,339	5.99	45.43	0.25	31.30
Urban Labor Force Employment Rate, Total (%)	1,251	96.90	1.90	59.02	99.99
Urban Labor Force Employment Rate, SOEs (%)	1,251	54.68	11.84	17.77	91.61
Urban Labor Force Employment Rate, Private (%)	1,251	42.22	12.10	4.78	81.31
Local Government Expenditures (billion USD)	1,270	62.22	94.31	1.18	1,007.84
Local Government Income (billion USD)	1,270	45.63	82.11	0.96	898.44
GDP per capita (USD)	1,269	7,784	4,521	1,028	31,049
Average Wage of Employees in Urban Areas (USD)	1,259	6,751	2,224	2,131	1,841
Exports per capita (USD)	1,271	3,633	11,080	3.03	129,577
Imports per capita (USD)	1,271	2,434	6,532	0.61	69,798

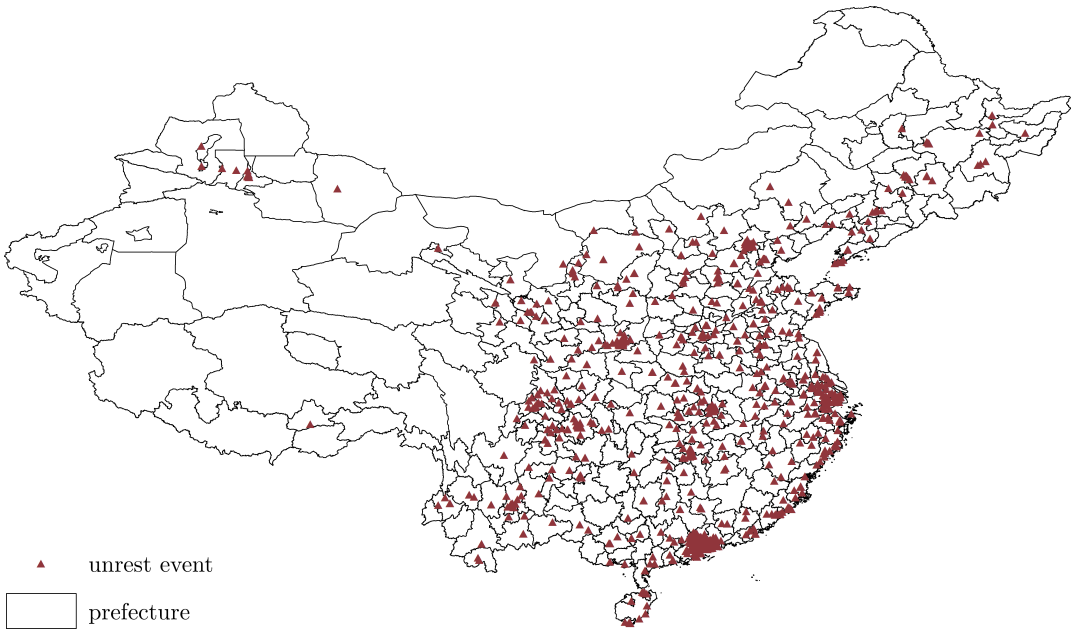
Note: This table shows descriptive statistics for prefecture-level variables for prefectures in the sample, 2004 to 2014. Labor unrest data for 2004 to 2011 is from the *China Strikes Crowdmap* and for 2012 to 2014 from the *China Labour Bulletin* (CLB). Data on exports and imports are from the *Chinese Customs Trade Statistics* (CCTS). All other variables are based on data from the *China City Statistical Yearbooks*. Financial values are in constant 2014 USD.

Figure A.14: Total Yearly Number of Labor Unrest Events in China Over Time



Note: This figure shows the log total number of labor unrest events in the sample by year. Data for 2004 to 2011 is from the *China Strikes Crowdmap* and data for 2012 to 2014 is from the *China Labour Bulletin* (CLB).

Figure A.15: Distribution of Labor Unrest Events Across China, 2004–2014



Note: This figure shows the locations of all labor unrest events in the sample, 2004 to 2014. Data for 2004 to 2011 is from the *China Strikes Crowdmap* and data for 2012 to 2014 is from the *China Labour Bulletin* (CLB). The black lines indicate prefecture borders.

Appendix D. Additional Results: Firm- and Prefecture-Level

D.1. Leads and Lags of Unrest

Table A.9: The Effects of Leads/Lags of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms

	Dependent Variable: Number of Aid Contracts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unrest, t-4	-0.023	0.005						
	(0.049)	(0.040)						
Unrest, t-3	0.016		0.057					
	(0.053)		(0.035)					
Unrest, t-2	0.024			0.027				
	(0.050)			(0.034)				
Unrest, t-1	0.109**				0.103**			
	(0.048)				(0.041)			
Unrest, t	-0.026					0.021		
	(0.029)					(0.013)		
Unrest, t+1	-0.007						0.003	
	(0.021)						(0.009)	
Unrest, t+2	0.010							0.015
	(0.016)							(0.015)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,175	2,767	3,044	3,299	3,532	3,532	3,152	2,767
Adjusted R2	0.595	0.573	0.587	0.568	0.575	0.574	0.599	0.608
Dependent Variable Mean	0.163	0.154	0.158	0.157	0.154	0.154	0.162	0.168
Dependent Variable SD	0.672	0.642	0.669	0.687	0.688	0.688	0.716	0.736
Unrest Mean	0.195	0.162	0.171	0.200	0.271	0.534	0.586	0.640
Unrest SD	0.200	0.186	0.187	0.230	0.330	0.862	0.900	0.947

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture. The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.2. Robustness to Additional Controls

A threat to the causal interpretation of the observed effect of unrest on contract allocation is omitted variables that vary across both firms and time and are correlated with both local unrest and aid allocation. I address such concerns here by controlling for a host of potential correlates at the prefecture-year and firm-year levels.

Local economic factors such as local GDP, exports, employment, and wages may be negatively correlated with the occurrence of labor unrest, which is often caused by mass layoffs and wage arrears (Campante, Chor and Li, 2019). At the same time, these factors may affect the marginal costs of aid contractors. For example, if wages in a prefecture decrease due to an economic shock, this may lead to collective action by the affected workers. Moreover, lower wages may in equilibrium also decrease the labor costs of firms, causing firms to bid on aid contracts more aggressively. If this channel were important, this could be a non-political explanation for the observed relationship between local unrest and aid contract allocation to central state-owned firms.

To address this concern, Table A.10, which is otherwise identical to Table 1, controls for local economic factors (including lagged GDP per capita, exports per capita, average wages, employment, and population at the prefecture-year level). The results are highly robust to the inclusion of these controls. Table A.11 controls for more prefecture-level variables. Column (1) for comparison replicates the baseline specification with the number of contracts as the outcome variable. Column (2) controls for year fixed effects interacted with the prefecture's distance to important cities (Beijing, Shenzhen and Ürümqi)[82] to control for location-specific trends potentially correlated with variation in unrest over time. Column (3) includes year fixed effects that are allowed to vary by province to capture subnational macroeconomic shocks that may be correlated with unrest and contract allocation (a province is one administrative unit higher than a prefecture). Although this takes out some variation and halves the coefficient estimate (0.047) compared to the baseline (0.103), the coefficient remains statistically significant at the 5% level. Column (4) controls for average lagged unrest in neighboring prefectures. The coefficient of interest is unchanged compared to the baseline. Unrest in neighboring prefectures has no effect on contract allocation, strengthening the notion that aid projects are used to react to *local* unrest.

There may also be potential omitted variables at the firm-year level correlated with local unrest and contract allocation. For example, Dreher et al. (2021) argue that China gives foreign aid to other countries to reduce the overproduction of construction materials. At the same time, firms may be more likely to have overcapacity in terms of inputs during periods of unrest in their home prefectures. Table A.12 addresses such concerns

[82] Beijing is the seat of the central government and home to many central state-owned firms. Shenzhen is a major manufacturing hub with a high incidence of labor unrest. Ürümqi is the capital of the politically unstable Xinjiang Uyghur Autonomous Region.

by replicating the baseline analysis for the subset of firms linked to the tax survey data, controlling for firms' lagged number of employees, fixed assets, operating income, exports, and materials inventory. The coefficient of interest is robust to the inclusion of these controls.

Table A.10: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Controlling for Prefecture-Level Variables

Dependent Variable:	Number of Aid Contracts			Financial Value of Aid Contracts		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.098***	0.035***	0.045**	0.639**	0.362**	0.534**
	(0.032)	(0.012)	(0.018)	(0.266)	(0.147)	(0.220)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,434	3,335	3,335	3,403	3,316	3,331
Adjusted R2	0.575	0.336	0.181	0.422	0.227	0.169
Dependent Variable Mean	0.156	0.044	0.040	1.418	0.506	0.549
Dependent Variable SD	0.696	0.272	0.282	5.045	3.005	3.228
Unrest Mean	0.267	0.265	0.265	0.267	0.265	0.265
Unrest SD	0.318	0.319	0.319	0.319	0.320	0.319

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The prefecture-year level control variables are based on data from the *China City Statistical Yearbooks*. They include log GDP per capita, log exports per capita, urban employment rate, average wage, and log population (all in year $t-1$). The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.11: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Additional Controls

	Dependent Variable: Number of Aid Contracts			
Controlling for:	Baseline	Year × Distances to Major Cities	Province × Year FEs	Unrest in Neighboring Prefectures
	(1)	(2)	(3)	(4)
Unrest,t-1	0.103**	0.067**	0.047**	0.101***
	(0.041)	(0.031)	(0.021)	(0.035)
Unrest in Neighboring Prefectures, t-1				0.006
				(0.039)
Firm and Year FEs	Yes	Yes	Yes	Yes
Observations	3,532	3,532	3,505	3,532
Adjusted R2	0.575	0.573	0.556	0.575
Dependent Variable Mean	0.154	0.154	0.154	0.154
Dependent Variable SD	0.688	0.688	0.690	0.688
Unrest Mean	0.271	0.271	0.271	0.271
Unrest SD	0.330	0.330	0.325	0.330

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. Major cities in the specification in Column (2) include Beijing, Shenzhen, and Ürümqi. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.12: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Controlling for Firm-Level Variables

	Dependent Variable: Number of Aid Contracts				
Controlling for:	Number of Employees, t-1	Fixed Assets, t-1	Operating Income, t-1	Exports, t-1	Inventory, t-1
	(1)	(2)	(3)	(4)	(5)
Unrest,t-1	0.114**	0.112**	0.084*	0.072**	0.133*
	(0.051)	(0.049)	(0.048)	(0.035)	(0.079)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,213	1,139	1,173	1,214	861
Adjusted R2	0.606	0.575	0.569	0.596	0.639
Dependent Variable Mean	0.248	0.198	0.205	0.200	0.231
Dependent Variable SD	0.855	0.762	0.770	0.708	0.833
Unrest Mean	0.303	0.297	0.300	0.320	0.205
Unrest SD	0.345	0.339	0.332	0.362	0.212

Note: The unit of observation is a firm-year. The sample includes central state-owned firms with >10 employees that were selected to participate in the 2007–2015 tax surveys by the State Tax Administration. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year t-1. All firm-level controls are in logs. The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.3. Differences Between Central State-Owned and Other Firms

A potential concern with the placebo check is that central state-owned firms differ from other firms in characteristics other than their role in implementing the central government's policy goals. Table A.13 addresses such concerns. It uses the subsample of firms that are publicly listed or subsidiaries of publicly listed firms, for which I have more detailed information on firm characteristics than for the full sample. Column (1) of regresses the number of contracts allocated to a firm in a year on the lagged number of local unrest events as well as the interaction between the lagged number of local unrest events and a time-invariant dummy that equals 1 if the firm is owned by the central government. In addition to the usual firm fixed effects, it also controls for year fixed effects that are allowed to differ between central state-owned and other firms. The interpretation of the interaction coefficient is analogous to the difference between the coefficients of Column (1) of Tables 1 and 2. Column (1) of Table A.13 shows that the interaction coefficient for this subsample of firms is very similar to the difference between the coefficients in Column (1) of Tables 1 and 2 which use the full sample.

In Columns (2) to (5) of Table A.13, I control for the interaction between unrest and fixed firm characteristics that are potentially correlated with the central state-owned firm dummy.[83] In Column (2), this is a dummy that equals 1 if the firm is in a sector in which the central government has a monopoly. These are sectors that also supply a significant fraction of China's aid (e.g., oil exploration and processing). Hence, the ineligibility of firms not owned by the central government for certain aid projects due to their sector could also explain why I find no effect of local unrest on these firms. However, Column (2) shows that this is not the case. If anything, the estimated difference in the effect of unrest for central state-owned and other firms is larger when controlling for the interaction between unrest and the sector dummy.

In Column (3), I control for the interaction of unrest and a dummy that equals 1 if the firm has political connections to high-ranking members of the central government. If central state-owned firms are more politically connected to high-ranking government officials than other firms, this could also explain why aid projects are more likely to be allocated to central state-owned firms during periods of unrest, even if no political motive is present. However, Column (3) shows that this cannot explain the differential effect of unrest for central state-owned and other firms. Column (4) controls for the interaction between unrest and the total number of aid contracts a firm supplies in 2005 to 2015. As Column (4) shows, although central state-owned firms on average implement more aid projects than other firms, again this cannot explain the differential effect of unrest for the two types of firms. Finally, Column (5) controls for the interactions between unrest and the three firm characteristics in

[83] The uninteracted variables are absorbed by the firm fixed effects.

Columns (2) to (4) in the same specification. The main result remains robust.

Table A.13: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Firms, Controlling for Differences Between Central State-Owned and Other Firms

	Dependent Variable: Number of Aid Contracts				
	(1)	(2)	(3)	(4)	(5)
Unrest,t-1	0.006	0.012	-0.022	0.007	-0.012
	(0.010)	(0.010)	(0.020)	(0.009)	(0.016)
Unrest, t-1 × Central State-Owned Firm	0.122**	0.162**	0.196**	0.128*	0.214**
	(0.055)	(0.071)	(0.082)	(0.065)	(0.101)
Unrest, t-1 × Monopoly Sector		-0.090*			-0.057
		(0.052)			(0.039)
Unrest, t-1 × Political Connections			-0.051**		-0.041*
			(0.025)		(0.022)
Unrest, t-1 × Total Number of Aid Contracts				-0.017	-0.018
				(0.053)	(0.052)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes
Central State-Owned Firm × Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	3,909	3,909	3,909	3,909	3,909
Adjusted R2	0.573	0.573	0.573	0.573	0.574
Dependent Variable Mean	0.117	0.117	0.117	0.117	0.117
Dependent Variable SD	0.585	0.585	0.585	0.585	0.585
Unrest Mean	0.273	0.273	0.273	0.273	0.273
Unrest SD	0.379	0.379	0.379	0.379	0.379

Note: The unit of observation is a firm-year. The sample includes listed firms and their subsidiaries. All regressions control for firm, year, and *Central State-Owned Firm* × year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The data on listed firm characteristics are from the CSMAR database. *Central state-owned firm* is a dummy that equals 1 if the firm is a central state-owned firm, and 0 otherwise. *Monopoly sector* is a dummy that equals 1 if the firm is in one of the state monopoly sectors: 1) oil and gas exploration, 2) petroleum processing, 3) coking and nuclear fuel processing, 4) tobacco, 5) electricity, heat, gas and water production, and supply, 6) railway transport, 7) postal service, 8) telecommunications and other information transmission services, 9) financial services, 10) non-ferrous and ferrous metals exploration and processing, and 0 otherwise. *Political connections* is a dummy that equals 1 if at least one of the firm's top executives or members of the board is ever a full or alternate member of the Central Committee during or after being affiliated with the firm, and 0 otherwise. *Total contracts* is equal to the total number of Chinese foreign aid contracts the firm implements during all years it is in the sample. The standard errors are clustered at the prefecture level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.4. Alternative Specifications and Other Robustness Checks

D.4.1. Contract Allocation and Employment at the Prefecture Level

Table A.14 repeats the analysis at the prefecture instead of the firm level. Columns (1) and (2) show that unrest significantly increases the total number of aid contracts allocated to central state-owned firms in a prefecture but has no effect on aid contracts allocated to other firms. Column (3) pools both types of firms and shows that lagged unrest has a positive net effect on the total number of contracts allocated to firms in the prefecture. One additional unrest event per million inhabitants is estimated to increase the number of contracts per million inhabitants by around 23% of the mean ($0.012 \div 0.053 = 0.226$). These results are consistent with a re-allocation of contracts across prefectures rather than a re-allocation from other to central state-owned firms within a prefecture. Recall that the main specification includes year fixed effects, so the effect of unrest on contracts is always relative to China's total amount of aid in a year – in other words, a re-allocation of contracts within the country.

Columns (4) to (6) repeat this exercise for employment. The closest available measure at the prefecture level is the employment rate among the urban labor force from the *China City Statistical Yearbooks* data, distinguishing between employment in SOE-like and private firms.[84] Consistent with the mechanism, while state-owned enterprises collectively increase employment by 1.11 percentage points ($0.414 \times 0.027 = 0.011$) following a one standard deviation increase in unrest in their prefecture, private firms decrease employment by the same amount (Columns (5) and (6)). This is consistent with Wen (2020) who shows that state-owned firms, but not private firms, hire ethnic minority males in response to local political unrest related to ethnic grievances. The result could be explained by unrest co-moving with local economic downturns which decrease labor demand by private firms. However, such downturns do not affect the allocation of aid contracts to private firms. Finally, Column (6) shows that the net effect of lagged unrest on the employment rate is zero, precisely because state-owned firms stabilize employment (partly through foreign aid projects).

[84] SOE-like firms in this data include not only central state-owned firms but also a few other types of firms, such as collective firms and firms administered by lower-ranked local governments.

Table A.14: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Firms and Employment, Prefecture Level

Dependent Variable:	Number of Contracts per Mn Inhabitants Including Contracts From:			Urban Labor Force Employment Rate (%) Among:		
	State-owned Firms	Other Firms	All Firms	State-owned Firms	Other Firms	All Firms
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.014**	-0.001	0.012*	0.027**	-0.028**	-0.001
	(0.006)	(0.003)	(0.007)	(0.011)	(0.011)	(0.001)
Prefecture and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,339	1,339	1,339	1,248	1,248	1,248
Adjusted R2	0.795	0.314	0.692	0.678	0.679	0.502
Dependent Variable Mean	0.028	0.024	0.053	0.539	0.431	0.970
Dependent Variable SD	0.178	0.109	0.218	0.118	0.121	0.0182
Unrest Mean	0.192	0.192	0.192	0.193	0.193	0.193
Unrest SD	0.426	0.426	0.426	0.414	0.414	0.414

Note: The unit of observation is a prefecture-year. All regressions control for prefecture and year fixed effects. Number of contracts: total number of Chinese foreign aid contracts allocated to firms in the prefecture in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The data on the urban labor force employment rate in a prefecture is from the *China City Statistical Yearbooks*. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p < 0.10, ** p < 0.05, *** p < 0.01.

D.4.2. Alternative Functional Form

The main specification is estimated using OLS. On the one hand, linear regression estimates are transparent and have a natural interpretation. On the other hand, estimates may be inconsistent since the main outcome variables have many zeroes and the number of contracts is a count variable (Angrist and Pischke, 2008). The many zeroes might be an issue, especially in the log-linear model, with log(1 + financial value of contracts) as the outcome variable, because heteroskedasticity may lead to inconsistent point estimates (Silva and Tenreyro, 2006). I assess the importance of such concerns by replicating the main results using a non-linear Poisson Pseudo-Maximum Likelihood (PPML) specification. PPML is widely used in the trade literature (Silva and Tenreyro, 2006) and increasingly also in the empirical aid literature (see, e.g., Fuchs and Vadlamannati, 2013) to address precisely this issue. Table A.15 Columns (3) and (4) report the estimates of the marginal effects of lagged unrest on the number and financial value of contracts allocated to a firm in a year. Note that the number of observations is smaller than in the main sample because, unlike with linear two-way fixed effects models, firms in the sample that never actually contract aid projects do not contribute to the non-linear PPML estimates (Correia, Guimarães and Zylkin, 2020). For comparison, in

Columns (1) and (2) I report the linear estimates for this sample.[85] The estimated marginal effects are very similar for the linear and the non-linear specification and highly statistically significant. This suggests that using the linear specification is unproblematic.

Table A.15: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, PPML Specification

	OLS		PPML	
Dependent Variable:	Number of Aid Contracts	Financial Value of Aid Contracts	Number of Aid Contracts	Financial Value of Aid Contracts
	(1)	(2)	(3)	(4)
Unrest,t-1	0.734***	6.213***	0.844***	6.284***
	(0.119)	(1.857)	(0.145)	(1.873)
Firm and Year FEs	Yes	Yes	Yes	Yes
Observations	843	768	843	768
Adjusted R2	0.518	0.227		
Pseudo R2			0.349	0.242
Dependent Variable Mean	0.645	6.384	0.645	6.384
Dependent Variable SD	1.292	9.108	1.292	9.108
Unrest Mean	0.274	0.276	0.274	0.276
Unrest SD	0.239	0.244	0.239	0.244
Wild Bootstrap p-value	0.001	0.026	0.001	0.026

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. PPML stands for Poisson Pseudo-Maximum Likelihood. The standard errors are clustered at the prefecture level. Wild Bootstrap p-values are reported to account for the small number of clusters. Statistical significance is represented by * p < 0.10, ** p < 0.05, *** p < 0.01.

D.4.3. Omitting Outliers, Prefectures and Time Periods

Although not threatening the internal validity of the results, another potential concern is that a few observations, locations, or time periods drive the results. I address these concerns by systematically dropping important observations to see if the results remain similar without them. In Table A.16, I drop the observations in the top percentile of the sample in terms

[85] Note that the coefficients are larger than in the main results in Table 1. This is expected given that only firms that ever contract aid projects are included in the sample. In addition, note that the number of prefectures in this sample drops to 23 prefectures. Since standard errors are clustered at the prefecture level, this may be a problem due to a small number of clusters (Cameron, Gelbach and Miller, 2008). I address this issue by reporting Wild Bootstrap p-values at the bottom of Table A.15. All coefficients remain statistically significant at the 5% or 1% level.

of Cook's distance, a measure of outliers. The coefficient estimates are very similar to the baseline estimates in Table 1.[86]

In Table A.17, I regress local unrest on the number of contracts allocated, dropping important prefectures one by one. I drop Beijing, Shanghai, and Tianjin since they are among the largest cities in China. I drop Shenzhen and Xi'an since many central state-owned firms supplying aid projects are located there. I drop Ürümqi since it is the capital of the politically unstable Xinjiang Uyghur Autonomous Region. The results are also robust to dropping other cities (results on request). Excluding Beijing from the sample in Column (1) leads to a lower coefficient on unrest (0.052) compared to the full sample (0.103). However, note that the mean of the dependent variable is also smaller because many central state-owned firms that supply aid projects are located in Beijing. In terms of relative magnitudes, the effect is comparable to the baseline. Similarly, the effects are robust to dropping other important Chinese prefectures, as Columns (2) to (5) show.

In Table A.18, I cut the sample into four time periods, including the global financial crisis in 2007 to 2009 and Xi Jinping's term starting in 2013, and drop each of these periods from the sample one by one. The estimated coefficients are remarkably similar for the four different samples.

Table A.16: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Omitting Outliers

Dependent Variable:	Number of Aid Contracts			Financial Value of Aid Contracts		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.089**	0.033**	0.040**	0.636**	0.317*	0.572***
	(0.035)	(0.014)	(0.016)	(0.267)	(0.174)	(0.207)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,518	3,424	3,424	3,487	3,405	3,419
Adjusted R2	0.588	0.336	0.147	0.405	0.213	0.164
Dependent Variable Mean	0.136	0.042	0.035	1.337	0.477	0.512
Dependent Variable SD	0.577	0.265	0.227	4.905	2.920	3.121
Unrest Mean	0.271	0.270	0.270	0.271	0.270	0.270
Unrest SD	0.330	0.332	0.332	0.332	0.332	0.332

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. Observations with a Cook's Distance in the top percentile of the sample (outliers) are excluded from the sample. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Financial value of aid contracts: log(1 + total financial value of Chinese foreign aid contracts allocated to a firm in year t). ODA: Official Development Assistance. OOF: Other Official Finance. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p < 0.10, ** p < 0.05, *** p < 0.01.

[86] The results are also robust to using alternative measures of the observations' influence on the estimation results, such as DFBETA (results on request).

Table A.17: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Dropping Major Prefectures

	Dependent Variable: Number of Aid Contracts					
Excluding:	Beijing	Shanghai	Tianjin	Shenzhen	Xi'An	Ürümqi
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.052**	0.100**	0.105**	0.127***	0.095**	0.104**
	(0.024)	(0.039)	(0.041)	(0.044)	(0.039)	(0.041)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,230	3,326	3,450	3,501	3,429	3,525
Adjusted R2	0.357	0.576	0.575	0.575	0.586	0.575
Dependent Variable Mean	0.059	0.162	0.157	0.155	0.153	0.154
Dependent Variable SD	0.336	0.707	0.696	0.691	0.691	0.689
Unrest Mean	0.269	0.275	0.275	0.265	0.265	0.271
Unrest SD	0.398	0.332	0.332	0.305	0.325	0.330

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.18: Contract Allocation and Local Unrest, Dropping Time Periods

	Dependent Variable: Number of Aid Contracts			
Excluding:	2004-2006	2007-2009	2010-2012	2013-2015
	(1)	(2)	(3)	(4)
Unrest,t-1	0.097**	0.104**	0.102**	0.103**
	(0.040)	(0.044)	(0.040)	(0.044)
Firm and Year FEs	Yes	Yes	Yes	Yes
Observations	3044	2656	2464	2381
Adjusted R2	0.588	0.546	0.563	0.613
Dependent Variable Mean	0.158	0.141	0.151	0.167
Dependent Variable SD	0.669	0.657	0.684	0.750
Unrest Mean	0.299	0.306	0.302	0.169
Unrest SD	0.346	0.358	0.369	0.184

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are clustered at the prefecture level. Statistical significance is represented by * p < 0.10, ** p < 0.05, *** p < 0.01.

D.4.4. Alternative Standard Errors

Table 1 with the main results reports robust standard errors clustered at the prefecture level since this is the unit of variation of the explanatory variable (Bertrand, Duflo and

Mullainathan, 2004). Clustered standard errors account for correlation in outcomes within prefectures as well as serial correlation in local unrest over time. However, assignment of the "treatment" may also be correlated within groups along different dimensions, for example, if unrest is correlated across prefectures. Table A.19 reports alternative standard errors for the preferred specification to address this possibility. Column (2) reports heteroskedasticity-robust Huber-White standard errors that do not account for clustering for comparison. Column (3) reports standard errors two-way clustered at the prefecture and conglomerate level (Cameron, Gelbach and Miller, 2011).[87] Column (4) two-way clusters at the prefecture and year level. Column (5) clusters at the province level (one administrative unit above the prefecture) to account for potential correlation in outcomes and unrest across prefectures. Column (6) reports two-way Conley (2010) standard errors allowing for spatial auto-correlation up to 5000km and temporal auto-correlation up to 10 years using a Bartlett kernel. The standard errors in Columns (2) to (6) are very similar to, or smaller, than the baseline standard errors clustered at the prefecture level shown in Column (1).

Table A.19: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Alternative Standard Errors

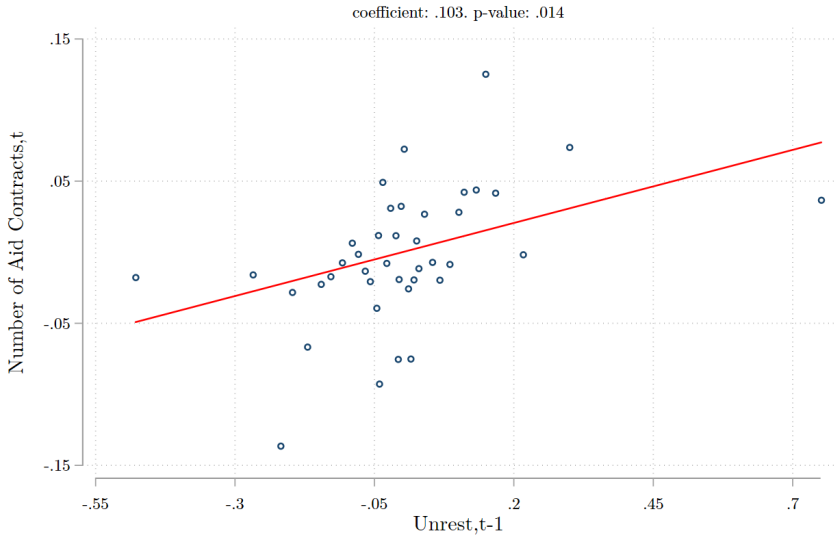
	Dependent Variable: Number of Aid Contracts					
Standard Errors:	Clustering at Prefecture (Baseline)	Huber-White (Robust)	Clustering at Prefecture + Conglomerate	Clustering at Prefecture + Year	Clustering at Province	Conley (2008)
	(1)	(2)	(3)	(4)	(5)	(6)
Unrest,t-1	0.103**	0.103***	0.103**	0.103**	0.103**	0.103***
	(0.041)	(0.025)	(0.045)	(0.043)	(0.045)	(0.032)
Firm and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,532	3,532	3,532	3,532	3,532	3,532
Adjusted R2	0.575	0.575	0.575	0.575	0.575	0.575
Dependent Variable Mean	0.154	0.154	0.154	0.154	0.154	0.154
Dependent Variable SD	0.688	0.688	0.688	0.688	0.688	0.688
Unrest Mean	0.271	0.271	0.271	0.271	0.271	0.271
Unrest SD	0.330	0.330	0.330	0.330	0.330	0.330

Note: The unit of observation is a firm-year. The sample includes central state-owned firms only. All regressions control for firm and year fixed effects. Number of aid contracts: total number of Chinese foreign aid contracts allocated to a firm in year t. Unrest: number of labor unrest events per million inhabitants in a firm's prefecture in year $t-1$. The standard errors are as indicated in the column headings (clustered at the prefecture level for the baseline). Two-way Conley standard errors (Conley, 2008) account for spatial auto-correlation up to 5000km (Bartlett kernel) and serial correlation up to 10 years. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$..

[87] A conglomerate is a group of firms that contains multiple subsidiaries. 474 central state-owned firms in the main sample belong to 76 conglomerates.

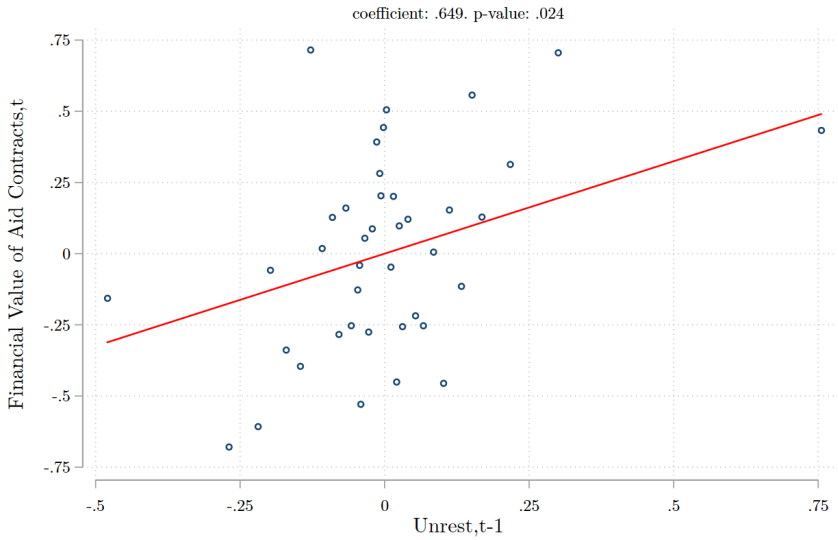
D.5. Additional Figures

Figure A.16: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Number of Contracts



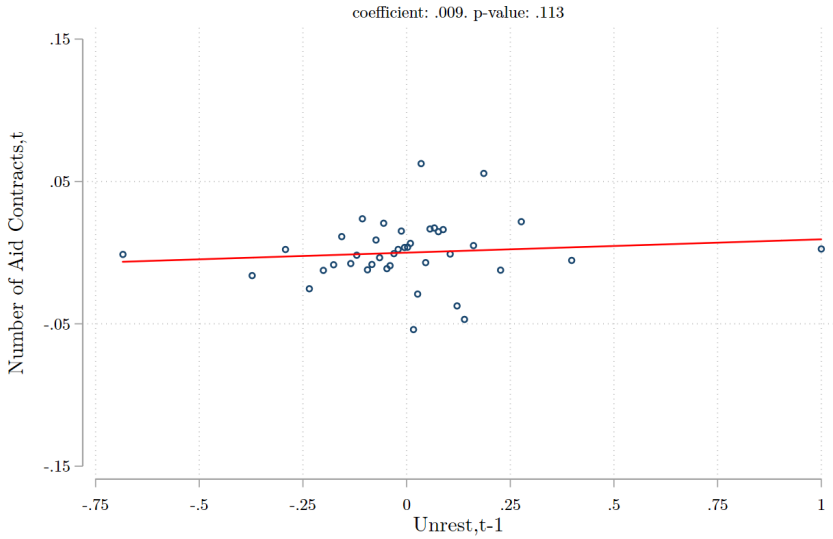
Note: The unit of observation is a firm-year. The red line shows the line of fit from a linear regression of the number of Chinese foreign aid contracts allocated to a central state-owned firm in year t on the lagged number of labor unrest events per million inhabitants in the firm's prefecture in year $t-1$, residualizing by firm and year fixed effects. The blue dots show the mean residuals for each of 40 bins. The standard errors are clustered at the prefecture level.

Figure A.17: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Central State-Owned Firms, Financial Value of Contracts



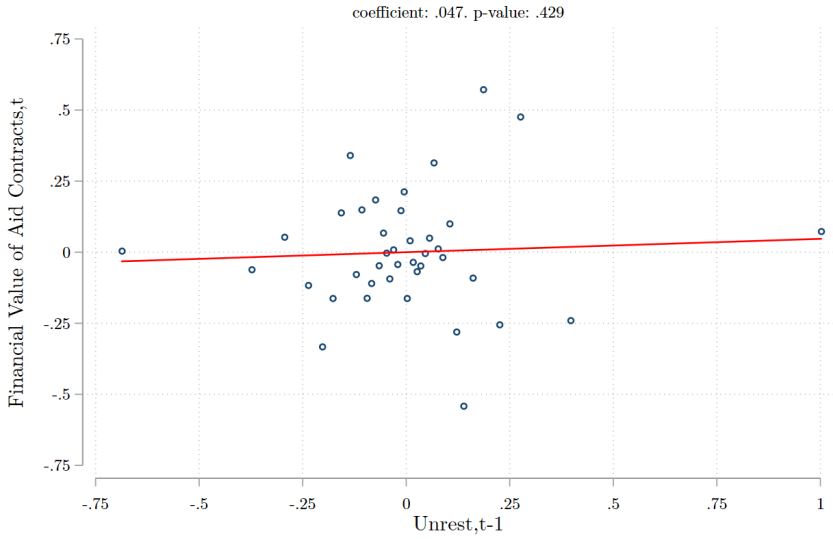
Note: The unit of observation is a firm-year. The red line shows the line of fit from a linear regression of log(1 + the total financial value of Chinese foreign aid contracts allocated to a central state-owned firm in year t) on the lagged number of labor unrest events per million inhabitants in the firm's prefecture in year $t-1$, residualizing by firm and year fixed effects. The blue dots show the mean residuals for each of 40 bins. The standard errors are clustered at the prefecture level.

Figure A.18: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Firms Other than Central State-Owned Firms, Number of Contracts



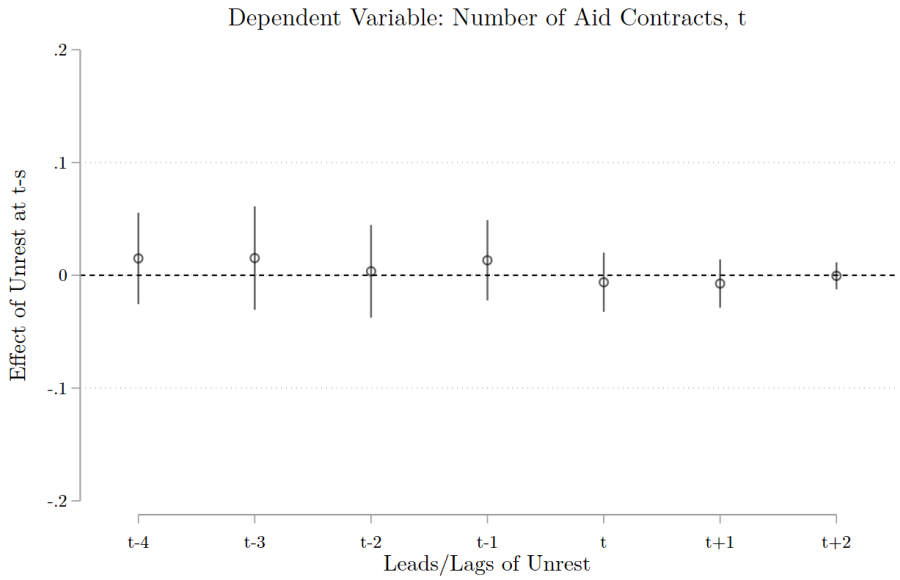
Note: The unit of observation is a firm-year. The red line shows the line of fit from a linear regression of the number of Chinese foreign aid contracts allocated to a non central state-owned firm in year t on the lagged number of labor unrest events per million inhabitants in the firm's prefecture in year $t-1$, residualizing by firm and year fixed effects. The blue dots show the mean residuals for each of 40 bins. The standard errors are clustered at the prefecture level.

Figure A.19: Effect of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Firms Other than Central State-Owned Firms, Financial Value of Contracts



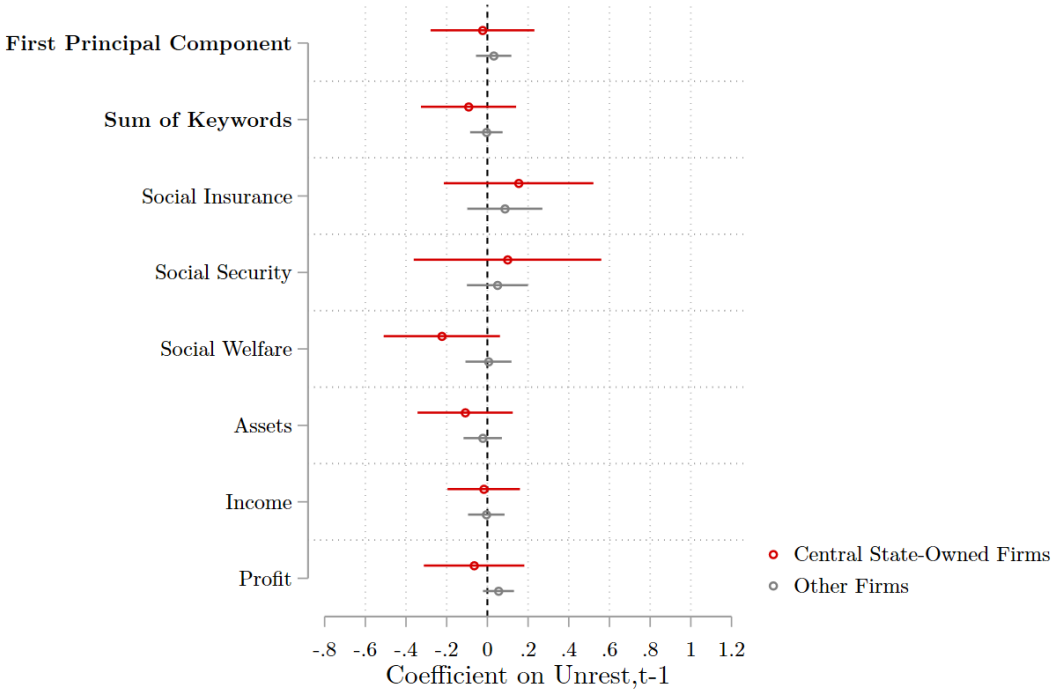
Note: The unit of observation is a firm-year. The red line shows the line of fit from a linear regression of log(1 + the total financial value of Chinese foreign aid contracts allocated to a non central state-owned firm in year t) on the lagged number of labor unrest events per million inhabitants in the firm's prefecture in year $t-1$, residualizing by firm and year fixed effects. The blue dots show the mean residuals for each of 40 bins. The standard errors are clustered at the prefecture level.

Figure A.20: Effects of Leads/Lags of Local Unrest in China on Chinese Foreign Aid Contract Allocation to Firms Other than Central State-Owned Firms



Note: The unit of observation is a firm-year. Each dot shows the coefficients from a linear regression of the number of Chinese foreign aid contracts allocated to firms other than central state-owned firms in year t on the number of labor unrest events per million inhabitants in the firm's prefecture at all leads and lags shown on the x-axis, controlling for firm and year fixed effects. The vertical lines show 90% confidence intervals. The mean of the dependent variable is 0.049. The standard errors are clustered at the prefecture level.

Figure A.21: Effect of Local Unrest in China on the Frequency of Placebo Keywords in Firms' Annual Reports



Note: The unit of observation is a firm-year. Each dot shows the coefficients from separate linear regressions of the frequency of the keywords labeled on the y-axis in a firm's annual report in year t on the number of labor unrest events per million inhabitants in the firm's prefecture in year $t-1$, controlling for firm and year fixed effects. The horizontal bars show 90% confidence intervals. All variables are standardized to have a mean of 0 and a standard deviation of 1. The standard errors are two-way clustered at the conglomerate and prefecture level. The sample includes Chinese listed firms and their subsidiaries included in the main sample.

Appendix E. Data and Descriptive Statistics: Country Level

Table A.20: List of Countries

Panel A. Countries that Ever Received Chinese Aid Projects Implemented by Central State-Owned Firms		
Afghanistan	Gabon	Nepal
Algeria	Ghana	Niger
Angola	Grenada	Nigeria
Argentina	Guinea	Pakistan
Bangladesh	Guinea-Bissau	Philippines
Belarus	Guyana	Russia
Benin	Indonesia	Rwanda
Bolivia	Iran	Senegal
Bosnia and Herzegovina	Jamaica	Seychelles
Botswana	Kazakhstan	Sierra Leone
Brazil	Kenya	Sri Lanka
Burundi	Kyrgyz Republic	Sudan
Cambodia	Laos	Tajikistan
Cameroon	Liberia	Tanzania
Central African Republic	Macedonia	Togo
Chad	Madagascar	Tonga
Congo	Malawi	Tunisia
Costa Rica	Malaysia	Turkey
Cote d'Ivoire	Maldives	Turkmenistan
Democratic Republic of Congo	Mali	Uganda
Djibouti	Mauritania	Ukraine
Dominica	Mauritius	Uzbekistan
Ecuador	Micronesia	Vanuatu
Egypt	Montenegro	Venezuela
Equatorial Guinea	Morocco	Vietnam
Eritrea	Mozambique	Yemen
Ethiopia	Myanmar	Zambia
Fiji	Namibia	Zimbabwe

Panel B. Other Low- and Middle-Income Countries		
Albania	Honduras	Peru
Armenia	Hungary	Poland
Azerbaijan	India	Romania
Belize	Iraq	Saint Kitts and Nevis
Bhutan	Jordan	Saint Lucia
Bulgaria	Kiribati	Saint Vincent and the Grenadines
Burkina Faso	Latvia	Samoa
Cape Verde	Lebanon	Sao Tome and Principe
Chile	Lesotho	Saudi Arabia
Colombia	Libya	Slovak Republic
Comoros	Lithuania	Solomon Islands
Croatia	Marshall Islands	South Africa
Cuba	Mexico	Suriname
Czech Republic	Moldova	Swaziland
Dominican Republic	Mongolia	Syria
El Salvador	Nicaragua	Thailand
Estonia	Oman	Trinidad and Tobago
Gambia	Palau	Tuvalu
Georgia	Panama	Uruguay
Guatemala	Papua New Guinea	
Haiti	Paraguay	

Note: Panel A lists all countries that ever received Chinese foreign aid projects implemented by central state-owned firms. Panel B lists all other non-high income, non-OECD countries (as defined by the World Development Indicators).

E.1. Descriptive Statistics: Recipient Country-Level Data

Table A.21: Descriptive Statistics: Recipient Country-Level Variables

Variable	N	Mean	SD	Min	Max
Number of Aid Projects	1,518	0.33	1.01	0.00	14.00
Number of ODA Projects	1,518	0.12	0.43	0.00	5.00
Number of OOF Projects	1,518	0.13	0.62	0.00	11.00
Financial Value of Aid Projects (log)	1,518	3.08	7.07	0.00	22.62
Financial Value of ODA Projects (log)	1,518	1.47	5.01	0.00	20.92
Financial Value of OOF Projects (log)	1,518	1.34	4.97	0.00	22.56
Lagged Weighted Labor Unrest	1,518	0.00	1.00	-4.51	6.84
Imports from China per capita (USD)	1,507	4.04	8.41	0.00	65.94
FDI from China (bn USD)	1,518	0.23	1.00	0.00	17.47
GDP growth (%)	1,485	4.34	4.46	-36.39	34.47
GDP per capita (USD)	1,481	4,954	4,732	221	21,561
Government Consumption per capita (USD)	1,203	842	956	16	5,415
Household Consumption per capita (USD)	1,203	2,964	2,542	190	10,264
Capital Formation per capita (USD)	1,202	1,248	1,305	-2,744	6,577
Imports per capita (USD)	1,503	4,384	18,900	41	294,719
Exports per capita (USD)	1,503	2,315	3,909	5	27,150
Imports from China per capita (USD)	1,503	427	2,749	1	60,070
Exports to China per capita (USD)	1,503	138	418	0	5,068
Unemployment Rate	1,430	7.98	6.23	0.21	37.25
Number of Diplomatic Visits	1,507	1.72	4.39	0.00	52.00
Polity Score	1,317	3.36	5.94	-10.00	10.00

Note: This table shows recipient country-level descriptive statistics for the sample used in Table 7. Financial amounts are in constant 2014 USD. The data sources are described in Section 4.2.

Table A.22: Descriptive Statistics: Correlates with Chinese Foreign Aid Allocation to Other Countries

Variable	N	Mean	SD	Min	Max
UN General Assembly Voting Alignment	1,213	0.96	0.07	0.60	1.00
Diplomatic Relations with Taiwan (dummy)	1,213	0.12	0.33	0.00	1.00
Trade with China (log)	1,213	20.49	2.16	12.04	25.32
Petroleum Exporter (dummy)	1,213	0.50	0.50	0.00	1.00
Government Debt (% of GDP)	1,213	49.58	40.79	1.98	487.45
Democracy (Polity Score)	1,213	13.06	5.73	0.00	20.00
GDP per capita (log)	1,213	7.51	1.12	4.81	9.62
Population (log)	1,213	16.18	1.52	13.03	20.97
English is Official Language (dummy)	1,213	0.26	0.44	0.00	1.00

Note: This table shows descriptive statistics for the sample used in Table A.23. The data are from Dreher et al. (2021).

E.2. Correlates of Chinese Aid With Recipient Country Characteristics

In this section, I analyze the factors associated with the global allocation of Chinese aid. Table A.22 shows descriptive statistics for the country characteristics included in the analysis. Table A.23 shows correlations between recipient country characteristics (data from Dreher et al., 2021) and the amount of Chinese aid received by countries (aid implemented by Chinese central state-owned firms in my sample during 2005 to 2015). Each column in Table A.23 shows the coefficient of an OLS regression of the measure of Chinese aid indicated in the column heading on the listed lagged country characteristics, controlling for year fixed effects. Standard errors are clustered at the country level.

Consistent with Dreher et al. (2021), I observe that conditional on other characteristics, countries are more likely to receive Chinese aid if their voting in the UN General Assembly is more aligned with China and less likely to receive Chinese aid if they have diplomatic relations with Taiwan. This result is consistent with Alesina and Dollar (2000) who show that Western donors reward recipient countries for political alliances. Countries with deeper trade relationships with China, and countries whose official language is English, receive more aid. This is consistent with China using its aid to create commercial opportunities for the Chinese export economy. Poorer countries receive more concessional Chinese finance (ODA-like aid), perhaps due to a greater need for aid. Other country characteristics, including whether a country is more populous, more democratic or a petroleum exporter, have no large or statistically significant correlation with Chinese aid. The absence of a relationship with democracy and petroleum exports is especially interesting since it is inconsistent with conventional wisdom and claims in the press that China uses aid to prop up autocratic regimes or to secure access to natural resources (e.g., Naim, 2007).

Nevertheless, these correlations are consistent with the notion that China may choose the countries it gives aid to based on economic and foreign policy goals. However, there may be alternative explanations for these patterns, and there may also be motives that affect the *timing* of Chinese aid to recipient countries. In Section 4, I go beyond descriptive evidence and show how a *domestic* political objective of the Chinese government influences the timing and size of its aid to other countries.

Table A.23: Correlates of Chinese Aid With Recipient Country Characteristics

Dependent Variable:	Number of Aid Projects			Financial Value of Aid Projects		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
UN General Assembly Voting Alignment	1.270**	0.495*	0.419	8.822**	5.710*	2.226
	(0.559)	(0.293)	(0.268)	(3.567)	(2.957)	(2.431)
Diplomatic Relations with Taiwan	-0.617***	-0.336***	-0.170***	-5.345***	-3.547***	-1.782***
	(0.158)	(0.099)	(0.059)	(0.897)	(0.762)	(0.469)
Trade with China (log)	0.177**	0.041	0.066	0.686*	0.195	0.362
	(0.089)	(0.034)	(0.053)	(0.388)	(0.283)	(0.259)
Petroleum Exporter	-0.178	-0.139	-0.056	-1.608	-1.184	-0.858
	(0.240)	(0.124)	(0.122)	(1.150)	(0.873)	(0.945)
Government Debt (% of GDP)	-0.001	-0.002*	0.000	-0.011	-0.014**	-0.000
	(0.002)	(0.001)	(0.001)	(0.008)	(0.006)	(0.006)
Democracy (Polity Score)	-0.013	0.000	-0.008	-0.117*	0.016	-0.086
	(0.013)	(0.006)	(0.006)	(0.067)	(0.047)	(0.053)
GDP per capita (log)	-0.316***	-0.177***	-0.054	-1.863***	-1.592***	-0.362
	(0.107)	(0.043)	(0.059)	(0.539)	(0.354)	(0.358)
Population (log)	-0.031	-0.013	0.014	0.089	-0.015	0.371
	(0.103)	(0.038)	(0.058)	(0.496)	(0.344)	(0.333)
English is Official Language	0.267	0.249**	0.053	1.949*	2.713***	0.905
	(0.197)	(0.105)	(0.088)	(0.985)	(0.739)	(0.736)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,213	1,213	1,213	1,213	1,213	1,213
Adjusted R2	0.105	0.132	0.032	0.163	0.154	0.063
Dependent Variable Mean	0.689	0.315	0.213	5.339	3.161	2.082
Dependent Variable SD	1.554	0.765	0.839	8.578	6.907	6.053

Note: The unit of observation is a country-year. Each column shows an OLS regression of the measure of Chinese foreign aid indicated in the column heading on the country-level variables listed on the left hand side, controlling for year fixed effects. The time-varying independent variables are lagged by one period. Number of aid projects: total number of Chinese foreign aid projects received by a country in year t. Financial value of aid projects: log(1 + total financial value of Chinese foreign aid projects received by a country in year t). ODA: Official Development Assistance. OOF: Other Official Finance. The country-level data other than Chinese aid are from Dreher et al. (2021). The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix F. Additional Results and Robustness: Country Level

Table A.24: First Stage, by Sector of Project

	Dependent Variable: Number of Aid Projects					
	All	Transport	Energy Generation and Supply	Industry, Mining	Communications	Services, Health, Emergency Assistance, Other
	(1)	(2)	(3)	(4)	(5)	(6)
Weighted Unrest,t-1	0.249***	0.103***	0.098***	0.016*	0.005	0.015
(Standardized)	(0.051)	(0.037)	(0.036)	(0.009)	(0.005)	(0.015)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,518	1,518	1,518	1,518	1,518	1,518
Adjusted R2	0.348	0.193	0.201	0.121	0.017	0.254
Kleibergen-Paap F-Statistic	23.71	7.650	7.455	2.947	0.868	1.025
Dependent Variable Mean	0.326	0.109	0.109	0.034	0.011	0.044
Dependent Variable SD	1.012	0.507	0.514	0.206	0.138	0.278

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Number of aid projects: total number of Chinese foreign aid projects, implemented by central state-owned firms, committed to a country in year t. Weighted unrest is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.25: First Stage Placebo Checks

Dependent Variable:	Number of Aid Projects				Imports from China	FDI from China	OECD-DAC Aid
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Weighted Unrest,t-2	-0.083				0.066	-0.003	0.005
(Standardized)	(0.058)				(0.132)	(0.023)	(0.019)
Weighted Unrest,t-1		0.248***					
(Standardized)		(0.052)					
Weighted Unrest,t			0.064				
(Standardized)			(0.058)				
Weighted Unrest,t+1				0.038			
(Standardized)				(0.046)			
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,507	1,380	1,380	1,242	1,507	1,518	1,372
Adjusted R2	0.348	0.304	0.338	0.348	0.890	0.390	0.382
Kleibergen-Paap F-Statistic	22.39	2.028	1.236	0.684	0.248	0.0156	0.0724
Dependent Variable Mean	0.322	0.339	0.342	0.344	4.041	0.251	0.629
Dependent Variable SD	1.011	1.020	1.048	1.070	8.407	0.806	1.670

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Number of aid projects: total number of Chinese foreign aid projects, implemented by central state-owned firms, committed to a country in year t. Imports from China: total imports from China received by a country in billion USD (WDI data). FDI from China: total FDI from Chinese firms received by a country in billion USD (AEI Global Investment Tracker data). OECD-DAC aid: total foreign aid received by OECD Development Assistance Committee donors received by a country in billion USD (WDI data). All financial amounts are in constant 2014 USD. Weighted unrest is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.26: Effects of Chinese Foreign Aid on Recipient Countries, Robustness to Controls

Dependent Variable at t+3:	GDP per capita	GDP Growth per capita (%)	Unemploy-ment Rate (%)	Number of Diplomatic Visits	Polity Score
	(1)	(2)	(3)	(4)	(5)
	Panel A: IV Estimates				
Instrumented Number of Aid Projects,t	121.192**	0.503*	-0.375**	1.047**	0.008
	(51.079)	(0.297)	(0.180)	(0.421)	(0.349)
	Panel B: Reduced Form Estimates				
Weighted Unrest,t-1	30.930**	0.128	-0.095**	0.266***	0.002
	(12.970)	(0.080)	(0.040)	(0.094)	(0.093)
	Panel C: OLS Estimates				
Number of Aid Projects,t	0.650	0.161**	-0.023	0.171**	0.023
	(12.641)	(0.079)	(0.032)	(0.085)	(0.044)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,474	1,479	1,423	1,500	1,316
Kleibergen-Paap F-Statistic	23.17	23.12	22.78	23.14	22.76
Dependent Variable Mean	5130	2.209	7.598	1.393	3.668
Dependent Variable SD	4,597	2.941	5.358	2.666	5.630
Number of Aid Projects Mean	0.333	0.334	0.345	0.330	0.353
Number of Aid Projects SD	1.024	1.024	1.041	1.017	1.072

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, population, imports from China per capita in year t, FDI from China in year t, as well as weighted exports from Chinese prefectures in year $t-1$. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.27: Effects of Chinese Foreign Aid on Recipient Countries (Components of GDP), Robustness to Controls

Dependent Variable at t+3:	GDP per capita	Capital Formation per capita	Government Consumption per capita	Household Consumption per capita	Imports per capita	Exports per capita
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: IV Estimates					
Instrumented Number of Aid Projects,t	163.419**	79.811**	40.120***	65.521*	92.800*	62.983
	(62.520)	(32.660)	(12.031)	(38.647)	(54.336)	(46.353)
	Panel B: Reduced Form Estimates					
Weighted Unrest,t-1	41.777**	20.403**	10.256***	16.750*	24.142	16.448
	(16.030)	(8.524)	(3.095)	(9.180)	(16.187)	(13.812)
	Panel C: OLS Estimates					
Number of Aid Projects,t	4.196	10.196	0.662	1.146	17.319	11.389
	(13.300)	(6.579)	(1.582)	(5.504)	(13.205)	(14.687)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,189	1,189	1,189	1,189	1,189	1,189
Kleibergen-Paap F-Statistic	16.08	16.08	16.08	16.08	16.08	16.08
Dependent Variable Mean	5,097	1,275	855.2	3,140	2,386	2,235
Dependent Variable SD	4,669	1,176	888.2	2,610	2,563	2,737
Number of Aid Projects Mean	0.348	0.348	0.348	0.348	0.348	0.348
Number of Aid Projects SD	1.071	1.071	1.071	1.071	1.071	1.071

Note: The unit of observation is a country-year. The sample includes observations that are non-missing for all outcome variables. All regressions control for country and year fixed effects, population, imports from China per capita in year t, FDI from China in year t, as well as weighted exports from Chinese prefectures in year $t-1$. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.28: Effects of Chinese Foreign Aid on Recipient Countries, Controlling for Lagged Outcome

Dependent Variable at t+3:	GDP per capita	GDP Growth per capita (%)	Unemployment Rate (%)	Number of Diplomatic Visits	Polity Score
	(1)	(2)	(3)	(4)	(5)
	Panel A: IV Estimates				
Instrumented Number of Aid Projects,t	108.060**	0.445	-0.328*	1.052**	-0.031
	(43.233)	(0.297)	(0.176)	(0.435)	(0.337)
	Panel B: Reduced Form Estimates				
Weighted Unrest,t-1	27.623**	0.114	-0.083**	0.267***	-0.008
	(11.002)	(0.080)	(0.040)	(0.096)	(0.090)
	Panel C: OLS Estimates				
Number of Aid Projects,t	7.757	0.132	-0.001	0.169*	0.016
	(9.234)	(0.086)	(0.031)	(0.088)	(0.049)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,339	1,339	1,293	1,363	1,188
Kleibergen-Paap F-Statistic	26.31	26.29	26.02	26.62	26.45
Dependent Variable Mean	5,163	2.111	7.639	1.464	3.726
Dependent Variable SD	4,609	2.917	5.392	2.743	5.614
Number of Aid Projects Mean	0.347	0.347	0.360	0.343	0.370
Number of Aid Projects SD	1.033	1.033	1.050	1.026	1.083

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, population, as well as the outcome variable indicated in the column heading in year $t-1$. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.29: Effects of Chinese Foreign Aid on Recipient Countries (Components of GDP), Controlling for Lagged Outcome

Dependent Variable at t+3:	GDP per capita	Capital Formation per capita	Government Consumption per capita	Household Consumption per capita	Imports per capita	Exports per capita
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: IV Estimates					
Instrumented Number of Aid Projects,t	133.406**	63.279*	31.955***	49.339*	89.444	70.739
	(52.191)	(33.380)	(10.324)	(28.979)	(56.388)	(46.461)
	Panel B: Reduced Form Estimates					
Weighted Unrest,t-1	34.822**	16.718*	8.474***	13.033*	23.558	18.678
	(13.820)	(9.029)	(3.072)	(7.199)	(16.824)	(14.132)
	Panel C: OLS Estimates					
Number of Aid Projects,t	9.334	7.527	0.587	1.596	14.960	11.209
	(10.040)	(6.143)	(1.591)	(3.956)	(11.208)	(13.410)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,077	1,045	1,049	1,049	1,050	1,050
Kleibergen-Paap F-Statistic	18.13	18.46	18.66	18.60	18.43	18.16
Dependent Variable Mean	5,137	1,291	874	3,205	2,404	2,256
Dependent Variable SD	4,687	1,181	899	2,637	2,575	2,753
Number of Aid Projects Mean	0.359	0.367	0.365	0.365	0.366	0.366
Number of Aid Projects SD	1.075	1.089	1.087	1.087	1.087	1.087

Note: The unit of observation is a country-year. The sample includes observations that are non-missing for all outcome variables. All regressions control for country and year fixed effects, population, as well as the outcome variable indicated in the column heading in year $t-1$. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.30: Effects of Chinese Foreign Aid on Recipient Countries, Other Leads and Lags (2SLS Estimates)

Dependent Variable at t+3:	GDP per capita	GDP Growth per capita (%)	Unemployment Rate (%)	Number of Diplomatic Visits	Polity Score
	(1)	(2)	(3)	(4)	(5)
Instrumented Number of Aid Projects,t	123.359**	0.510*	-0.381**	1.059**	0.011
	(50.612)	(0.300)	(0.179)	(0.433)	(0.349)
Instrumented Number of Aid Projects,t+1	118.902**	0.566*	-0.400**	-0.263	0.219
	(48.780)	(0.308)	(0.163)	(0.301)	(0.294)
Instrumented Number of Aid Projects,t+2	78.629*	1.039**	-0.165	0.069	-0.091
	(42.735)	(0.404)	(0.152)	(0.390)	(0.236)
Instrumented Number of Aid Projects,t+3	27.078	0.793*	-0.143	-0.038	-0.026
	(43.416)	(0.442)	(0.152)	(0.324)	(0.135)
Instrumented Number of Aid Projects,t+4	-8.070	-0.013	0.027	-0.300	-0.378
	(58.195)	(0.336)	(0.162)	(0.254)	(0.285)
Instrumented Number of Aid Projects,t+5	-7.118	0.453	-0.049	-0.184	-0.636
	(66.590)	(0.375)	(0.263)	(0.305)	(0.417)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,474	1,479	1,423	1,500	1,316
Kleibergen-Paap F-Statistic	24.41	24.36	23.88	24.30	23.84
Dependent Variable Mean	5,130	2.209	7.598	1.393	3.668
Dependent Variable SD	4,597	2.941	5.358	2.666	5.630
Number of Aid Projects Mean	0.333	0.334	0.345	0.330	0.353
Number of Aid Projects SD	1.024	1.024	1.041	1.017	1.072

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Each row shows the coefficient estimates from separate 2SLS regressions of the outcome variable indicated in the column heading in year $t + 3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in the indicated year, where the number of aid projects is instrumented by weighted unrest in China one year prior to the indicated year. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.31: Effects of Chinese Foreign Aid on Recipient Countries (Components of GDP), Other Leads and Lags (2SLS Estimates)

Dependent Variable at t+3:	GDP per capita	Capital Formation per capita	Government Consumption per capita	Household Consumption per capita	Imports per capita	Exports per capita
	(1)	(2)	(3)	(4)	(5)	(6)
Instrumented Number of Aid Projects,t	164.867***	82.034**	40.414***	68.228*	95.185*	63.112
	(61.594)	(32.660)	(12.168)	(39.585)	(56.131)	(46.910)
Instrumented Number of Aid Projects,t+1	145.088**	95.599***	39.046***	61.933	149.199***	77.914*
	(56.713)	(31.954)	(12.600)	(41.126)	(51.514)	(41.300)
Instrumented Number of Aid Projects,t+2	94.372*	35.484*	29.891***	25.711	51.732	67.270*
	(49.046)	(20.638)	(11.121)	(38.887)	(40.447)	(38.991)
Instrumented Number of Aid Projects,t+3	38.394	21.029	20.451*	7.607	13.919	29.064
	(50.529)	(23.267)	(10.705)	(46.387)	(30.369)	(28.201)
Instrumented Number of Aid Projects,t+4	4.050	-18.776	11.763	-1.306	-21.602	-19.621
	(66.269)	(31.482)	(11.490)	(51.570)	(40.833)	(32.603)
Instrumented Number of Aid Projects,t+5	3.757	13.704	0.964	-0.751	37.501	-5.871
	(75.141)	(40.905)	(12.173)	(58.200)	(48.172)	(27.432)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,189	1,189	1,189	1,189	1,189	1,189
Kleibergen-Paap F-Statistic	16.74	16.74	16.74	16.74	16.74	16.74
Dependent Variable Mean	5,097	1,275	855	3,140	2,386	2,235
Dependent Variable SD	4,669	1,176	888	2,610	2,563	2,737
Number of Aid Projects Mean	0.348	0.348	0.348	0.348	0.348	0.348
Number of Aid Projects SD	1.071	1.071	1.071	1.071	1.071	1.071

Note: The unit of observation is a country-year. The sample includes observations that are non-missing for all outcome variables. All regressions control for country and year fixed effects, as well as population. Each row shows the coefficient estimates from separate 2SLS regressions of the outcome variable indicated in the column heading in year $t + 3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in the indicated year, where the number of aid projects is instrumented by weighted unrest in China one year prior to the indicated year. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.32: Effects of Chinese Foreign Aid on Recipient Country GDP, Different Measures of Foreign Aid

Measure of Aid:	Dependent Variable at t+3: GDP per capita					
	Number of Aid Projects			Financial Value of Aid Projects		
	All	ODA	OOF	All	ODA	OOF
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: IV Estimates					
Instrumented Aid,t	123.359**	448.660*	263.369**	35.570*	55.549	32.943*
	(50.612)	(266.080)	(105.776)	(19.441)	(37.198)	(18.658)
	Panel B: Reduced Form Estimates					
Weighted Unrest,t-1	31.267**	31.267**	31.267**	31.267**	31.267**	31.267**
	(12.659)	(12.659)	(12.659)	(12.659)	(12.659)	(12.659)
	Panel C: OLS Estimates					
Aid,t	0.302	-18.794	4.722	-1.422	-1.358	-2.725
	(11.920)	(18.796)	(25.348)	(1.652)	(1.878)	(2.341)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,474	1,474	1,474	1,474	1,474	1,474
Kleibergen-Paap F-Statistic	24.41	7.480	18.75	11.56	4.394	15.91
Dependent Variable Mean	5,130	5,130	5,130	5,130	5,130	5,130
Dependent Variable SD	4,597	4,597	4,597	4,597	4,597	4,597
Aid Mean	0.333	0.125	0.128	3.131	1.505	1.356
Aid SD	1.024	0.435	0.623	7.120	5.056	4.990

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population. Panel A shows the coefficient estimates from 2SLS regressions of GDP per capita in year $t+3$ on the measure of Chinese aid indicated in the column heading, implemented by central state-owned firms, received by a country in year t, where aid is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of GDP per capita in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of GDP per capita in year $t+3$ on the measure of Chinese aid indicated in the column heading, implemented by central state-owned firms, received by a country in year t. Number of aid projects: total number of Chinese foreign aid projects, implemented by central state-owned firms, committed to a country in year t. Financial value of aid projects: log(1 + total financial value of Chinese foreign aid projects, implemented by central state-owned firms, committed to a country in year t). ODA: Official Development Assistance. OOF: Other Official Finance. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.33: Effects of Chinese Foreign Aid on Recipient Countries, Historical Weights

Dependent Variable at t+3:	GDP per capita	GDP Growth per capita (%)	Unemployment Rate (%)	Number of Diplomatic Visits	Polity Score
	(1)	(2)	(3)	(4)	(5)
	Panel A: IV Estimates				
Instrumented Number of Aid Projects,t	186.959**	0.871**	-0.384	0.799	-0.042
	(80.017)	(0.374)	(0.285)	(0.670)	(0.603)
	Panel B: Reduced Form Estimates				
Weighted Unrest,t-1	26.770**	0.126**	-0.055	0.115	-0.006
	(11.123)	(0.057)	(0.034)	(0.096)	(0.087)
	Panel C: OLS Estimates				
Number of Aid Projects,t	-4.000	0.155*	-0.021	0.175**	0.027
	(12.202)	(0.079)	(0.033)	(0.086)	(0.046)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,474	1,479	1,423	1,500	1,316
Kleibergen-Paap F-Statistic	10.61	10.79	10.41	10.70	9.472
Dependent Variable Mean	5,130	2.209	7.598	1.393	3.668
Dependent Variable SD	4,597	2.941	5.358	2.666	5.630
Number of Aid Projects Mean	0.333	0.334	0.345	0.330	0.353
Number of Aid Projects SD	1.024	1.024	1.041	1.017	1.072

Note: The unit of observation is a country-year. All regressions control for country and year fixed effects, as well as population and uninteracted time-varying weights. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 until $t-1$ during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.34: Effects of Chinese Foreign Aid on Recipient Countries (Components of GDP), Historical Weights

Dependent Variable at t+3:	GDP per capita	Capital Formation per capita	Government Consumption per capita	Household Consumption per capita	Imports per capita	Exports per capita
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: IV Estimates					
Instrumented Number of Aid Projects,t	223.964**	130.708**	50.998**	112.034*	161.466**	113.857**
	(95.434)	(62.825)	(19.983)	(67.361)	(78.846)	(56.052)
	Panel B: Reduced Form Estimates					
Weighted Unrest,t-1	29.968**	17.490**	6.824**	14.991*	21.744*	15.394*
	(12.812)	(7.412)	(2.671)	(7.685)	(11.753)	(8.817)
	Panel C: OLS Estimates					
Number of Aid Projects,t	-2.643	9.636	-0.398	-2.956	13.437	7.209
	(13.297)	(5.980)	(1.608)	(5.096)	(12.992)	(15.311)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,189	1,189	1,189	1,189	1,189	1,189
Kleibergen-Paap F-Statistic	5.727	5.727	5.727	5.727	5.727	5.727
Dependent Variable Mean	5,097	1,275	855	3,140	2,386	2,235
Dependent Variable SD	4,669	1,176	888	2,610	2,563	2,737
Number of Aid Projects Mean	0.348	0.348	0.348	0.348	0.348	0.348
Number of Aid Projects SD	1.071	1.071	1.071	1.071	1.071	1.071

Note: The unit of observation is a country-year. The sample includes observations that are non-missing for all outcome variables. All regressions control for country and year fixed effects, as well as population and uninteracted time-varying weights. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 until $t-1$ during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.35: Effects of Chinese Foreign Aid on Recipient Countries, Excluding Outliers

Dependent Variable at t+3:	GDP per capita	GDP Growth per capita (%)	Unemployment Rate (%)	Number of Diplomatic Visits	Polity Score
	(1)	(2)	(3)	(4)	(5)
	Panel A: IV Estimates				
Instrumented Number of Aid Projects,t	91.670*	0.437	-0.384**	1.242**	0.008
	(48.737)	(0.310)	(0.187)	(0.480)	(0.386)
	Panel B: Reduced Form Estimates				
Weighted Unrest,t-1	21.908**	0.105	-0.091**	0.296***	0.002
	(10.592)	(0.072)	(0.041)	(0.104)	(0.095)
	Panel C: OLS Estimates				
Number of Aid Projects,t	-2.722	0.149*	-0.020	0.176**	0.023
	(11.308)	(0.084)	(0.031)	(0.087)	(0.044)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	1,471	1,476	1,420	1,497	1,313
Kleibergen-Paap F-Statistic	26.35	26.28	25.79	26.20	25.52
Dependent Variable Mean	5120	2.212	7.602	1.393	3.665
Dependent Variable SD	4,589	2.939	5.362	2.668	5.631
Number of Aid Projects Mean	0.333	0.334	0.345	0.330	0.353
Number of Aid Projects SD	1.025	1.025	1.042	1.018	1.073

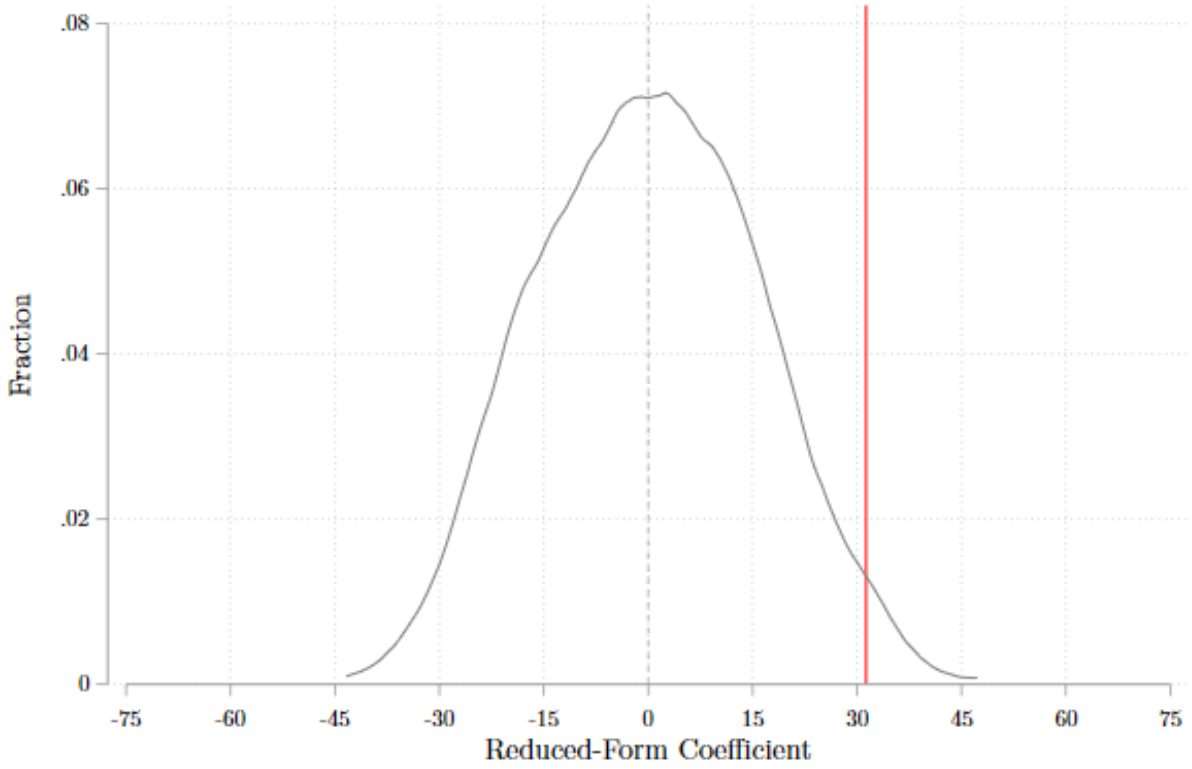
Note: The unit of observation is a country-year. The three observations with the highest DFBETA from Table 7 are excluded from the sample. All regressions control for country and year fixed effects, as well as population. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.36: Effects of Chinese Foreign Aid on Recipient Countries (Components of GDP), Excluding Outliers

Dependent Variable at t+3:	GDP per capita	Capital Formation per capita	Government Consumption per capita	Household Consumption per capita	Imports per capita	Exports per capita
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: IV Estimates					
Instrumented Number of Aid Projects,t	125.896**	67.694*	33.013***	60.413	64.990	37.099
	(62.911)	(35.217)	(12.270)	(43.051)	(50.310)	(44.054)
	Panel B: Reduced Form Estimates					
Weighted Unrest,t-1	29.705**	15.972**	7.789***	14.254	15.638	8.954
	(13.335)	(7.726)	(2.325)	(9.505)	(12.316)	(11.008)
	Panel C: OLS Estimates					
Number of Aid Projects,t	0.433	8.674	-0.240	0.275	14.214	8.869
	(11.869)	(6.072)	(1.932)	(5.392)	(11.294)	(13.326)
Country and Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,186	1,186	1,186	1,186	1,186	1,186
Kleibergen-Paap F-Statistic	17.84	17.84	17.84	17.84	17.84	17.84
Dependent Variable Mean	5,084	1,270	853.5	3,134	2,377	2,225
Dependent Variable SD	4,660	1,172	887.5	2,606	2,554	2,728
Number of Aid Projects Mean	0.348	0.348	0.348	0.348	0.348	0.348
Number of Aid Projects SD	1.072	1.072	1.072	1.072	1.072	1.072

Note: The unit of observation is a country-year. The sample includes observations that are non-missing for all outcome variables. The three observations with the highest DFBETA from Table 8 are excluded from the sample. All regressions control for country and year fixed effects, as well as population. Panel A shows the coefficient estimates from 2SLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t, where the number of aid projects is instrumented by weighted unrest in China in year $t-1$. Panel B shows the coefficient estimates from reduced form regressions of the outcome variable indicated in the column heading in year $t+3$ on weighted unrest in China in year $t-1$. Panel C shows the coefficient estimates from OLS regressions of the outcome variable indicated in the column heading in year $t+3$ on the number of Chinese foreign aid projects, implemented by central state-owned firms, received by a country in year t. The instrument, weighted unrest, is calculated as the sum (over all Chinese prefectures) of demeaned labor unrest in a Chinese prefecture multiplied with the fraction of years in 2005 to 2015 during which the country received any aid projects implemented by Chinese central state-owned firms in that prefecture. Weighted unrest is standardized to have a mean of 0 and a standard deviation of 1. The outcome variables are winsorized at the 5th and 95th percentiles. The standard errors are clustered at the country level. Statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.37: Falsification Test: Random Unrest Shocks



Note: The gray line displays the distribution of coefficients from 1,000 regressions of GDP per capita three years after commitment on weighted unrest, where the unrest shocks are randomly permuted within the sample and the exposure weights are held constant. The red line shows the coefficient from the actual reduced form regression of GDP per capita three years after commitment on weighted unrest in the sample (Table 7, Panel B, Column (1)).