

# CHINA'S FOREIGN AID: POLITICAL DETERMINANTS AND ECONOMIC EFFECTS<sup>\*</sup>

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## Abstract

There has been much speculation on the motives behind the large sums of foreign aid some countries provide to other countries. I address this question in the context of China, which is arguably the largest, most controversial, and most poorly understood donor. Using unique micro data, I find that the Chinese state's goal of domestic political stability drives a significant share of its aid allocation. I first document that in response to labor unrest in China, infrastructure aid contracts are allocated to state-owned firms in the affected areas, resulting in increased employment and future stability. Through existing connections between recipient countries and these firms, local unrest in China also significantly affects the allocation of Chinese aid to recipients. Finally, I exploit this granular variation to develop a novel shift-share instrument for identifying the causal effects of Chinese aid on recipients. I find large positive short-term effects on GDP but few signs of economic growth, household consumption or employment resulting from Chinese aid in the long term.

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## 1. Introduction

Governments have provided over 3.5 trillion USD in foreign aid to developing countries since 1960 ([World Bank, 2022](#)). Understanding what drives these large financial flows is not only important for policymakers but also for understanding the mixed and highly debated impacts of aid ([Easterly, 2003](#); [Sachs, 2006](#)). However, there is surprisingly little causal evidence on the exact drivers and processes behind foreign aid ([Qian, 2015](#)). While some influential studies suggest that the U.S. and other OECD donors allocate aid based on political or economic goals (e.g., [Alesina and Dollar, 2000](#); [Kuziemko and Werker, 2006](#); [Nunn and Qian, 2014](#)), this evidence is limited to cross-country data and excludes non-traditional but important donors such as China.

China has recently emerged as arguably the largest, most controversial, and least understood bilateral donor ([AidData, 2021](#)).<sup>1</sup> It mainly provides aid in the form of loans for infrastructure projects. Much of the controversy arises from a lack of understanding of the political processes and motives behind China's aid. Since selfless aid is politically unrealistic, many suspect ulterior motives. Western journalists and policymakers assert that China's aid is exclusively driven by geopolitical goals, including fostering diplomatic ties with autocrats, accessing natural resources, or creating strategic debt traps.<sup>2</sup> In contrast, prominent China scholars such as [Shirk \(2008\)](#) believe that China's foreign policy is primarily driven by its domestic goals, most importantly the need to secure political stability in China. There is currently no causal evidence on these potential motives and China's aid process largely remains a black box.

This paper presents novel and rigorous empirical evidence on the processes and motives behind China's aid allocation. It addresses two empirical challenges that have hindered prior research. The first is the lack of official data on Chinese

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<sup>1</sup>According to [AidData \(2021\)](#), China has provided over USD 840 billion in development finance since 2000, and in 2017 outspent the US government in Africa by 2:1. In this paper, the term aid includes grants and loans by Chinese government entities to government entities of low- and middle-income countries for development purposes. See also Section 2.

<sup>2</sup>See "Rogue Aid" on diplomatic efforts and natural resources in [Foreign Policy \(2009\)](#), or "The perils of China's debt-trap diplomacy" in [The Economist \(2018\)](#) and "How China Got Sri Lanka To Cough Up a Port" in [The New York Times \(2018\)](#) on debt traps.

aid and the involved actors. The second is causal identification. The primary goal of this study is to overcome these challenges.

To address these challenges, I first construct a novel dataset at the aid-project and contractor level. I leverage the data's granularity to document both internal and external allocation processes of China's aid. I find that the paramount policy goal of the Chinese state, domestic political stability ([Shirk, 2008](#); [Beraja et al., 2023](#); [Wen, 2023](#)), significantly influences both the allocation of contracts for aid projects to Chinese firms and the allocation of Chinese aid to recipient countries. The findings show that much of China's aid allocation is driven by domestic goals and not exclusively by geopolitical goals.<sup>3</sup> In addition, I use the resulting variation to identify the causal economic effects of Chinese aid on recipients and find economic benefits in the short but not long run.

The firm panel dataset includes the universe of potential Chinese infrastructure aid contractors at the subsidiary level in 2000–2017 according to previously unused administrative records by the Chinese Ministry of Commerce. To the best of my knowledge, this is the first comprehensive firm-level dataset that allows for systematically studying the Chinese aid allocation process at a micro level. It links 4544 firms to comprehensive data on 1347 Chinese aid projects from AidData 2.0 as well as detailed administrative data from China, including firm-subsidiary-level data on firm networks, procurement contracts, and customs and tax records. The aid projects contracted by Chinese firms constitute the majority of Chinese aid in terms of financial value and are primarily in the form of concessional loans for large-scale infrastructure.<sup>4</sup>

I use this dataset to first test whether the Chinese government uses foreign aid projects to help secure political stability in China. Qualitative 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,

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<sup>3</sup>Like all countries, China pursues multiple policy goals simultaneously. I show that domestic political stability is important for understanding China's aid allocation, while geopolitical motives are plausibly at play as well. In Section 4, I document for example that countries more politically aligned with China receive more Chinese aid. Quantifying the causal impact and relative importance of these other goals would require additional, different identification strategies and is beyond the scope of this one paper.

<sup>4</sup>Other aid does not involve contractors (e.g., stipends) or is supplied by foreign firms.

which the state sees as crucial for maintaining stability ([State Council, 2021](#)). Consistent with this motive, China typically provides aid in the form of loans to recipient countries that directly pay Chinese firms to deliver goods and services ([Brautigam and Hwang, 2020](#)). Naturally, the Chinese government also uses other measures to secure domestic stability, including domestic infrastructure investment and public security. Foreign aid has both additional costs and benefits compared to such measures; most importantly, it provides stimulus without adding to domestic debt and reduces the risk of moral hazard.<sup>5</sup>

Figure 1 is consistent with this hypothesis. It shows that the total value of aid given by China to other countries in a year closely tracks the number of unrest events in China in the previous year.<sup>6</sup> However, the observed relationship cannot be readily interpreted as causal because it could be driven by macroeconomic shocks that are correlated with both overall levels of unrest in China and other countries' demand for Chinese aid, such as the 2008/2009 global financial crisis. To address this challenge, I use my granular data to examine China's response to domestic unrest at a micro level.

To test whether the Chinese government uses foreign aid projects to help secure political stability in China, I regress the number and financial value of aid contracts allocated to Chinese contractors in a prefecture and year on the lagged number of labor unrest events in the prefecture, controlling for prefecture and province-year fixed effects, prefecture-specific trends, and prefecture-year varying controls.<sup>7</sup> Importantly, by exploiting variation at the prefecture and year level, this specification allows me to control for macroeconomic shocks that could be correlated with both overall levels of unrest in China and other countries' demand for Chinese aid.

An additional labor unrest event in a Chinese prefecture that gets aid con-

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<sup>5</sup>While the primary goal of this paper is to understand what drives China's aid rather than the strategies used by China to secure domestic stability more generally, I discuss other measures in Subsection 2.2 and provide empirical evidence in Subsection 3.5.

<sup>6</sup>An exception is 2014/2015, when aid was falling while unrest was rising. This can be explained by the Chinese anti-corruption campaign, which started in 2013 and led to a temporary slowdown of China's foreign aid program ([Zhang and Smith, 2017](#)).

<sup>7</sup>A prefecture is roughly a city. A province on average includes around 10 prefectures. The unrest data is from sources unaffiliated with the Chinese government (see Section 3.2).

tracts during the sample period is on average associated with 0.06 additional aid contracts allocated to firms in the prefecture in the following year. The cumulative effect is sizeable. The coefficient multiplied with the total average number of unrest events in China in a given year corresponds to 30 large-scale projects, or around 58% of China's yearly aid on average.

I address several potential concerns regarding the interpretation of this result: remaining omitted variables, reverse causality, spurious trends, and spillovers. First, the results are robust to instrumenting for local unrest using a set of IVs based on local weather conditions selected by LASSO (following [Beraja et al., 2023](#)). Second, I conduct a placebo exercise to further address the possible concern that aid contracts are explained by unobservable local economic shocks or policies. In response to an increase in local unrest, we should expect only firms incentivized by the central government to secure stability to bid on aid contracts differentially. If there were unobserved shocks, we should see a correlation between local unrest and aid allocation for all types of aid contractors. Reassuringly, lagged unrest only affects allocation of contracts to contractors controlled by central SOEs, which internalize the government's preferences.<sup>8</sup> Finally, the results are robust to different sets of fixed effects and controls; controlling for multiple leads and lags of unrest to mitigate concerns related to reverse causality and spurious trends; controlling for unrest in neighboring prefectures to rule out local spillovers; and controlling for firm-specific shocks.

Having shown that the Chinese government's objective of securing domestic stability significantly influences its internal aid project allocation, I next address several follow-up questions.

How effective is allocating aid contracts to Chinese firms in helping to secure domestic stability? First, I find that central SOEs contracting aid projects (but not other firms) increase employment in response to local unrest. This is consistent with foreign aid projects creating employment for Chinese workers

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<sup>8</sup>A systematic text analysis of aid contractors' annual reports reveals that indeed, central state-owned firms, but not other aid contractors, internalize the state's goal of moderating unrest. The central government allegedly uses the firms under its direct control to implement national policy goals, including securing social stability through job provision, as has been documented by the literature on the political economy of China ([Bai, Lu and Tao, 2006](#); [Wen, 2023](#)). It is easier for the state to manipulate employment for these firms than others.

during periods of unrest. Second, I examine whether aid projects help reduce unrest in the future. Precisely because aid project allocation is endogenously determined by past unrest, instead of regressing future unrest on aid projects, I examine whether past aid allocation mitigates the effect of exogenous shocks that could lead to unrest (following [Beraja et al., 2023](#)). I find that weather conditions conducive to unrest have a 15% lower impact on future unrest for each standard deviation of aid contracts received by firms in a prefecture in the past. This implies that aid contract allocation is effective in helping to secure future political stability even compared to other measures.

Do aid contracts substitute or complement other measures to secure political stability? I show that Chinese firms not only receive more foreign aid contracts but also more domestic government procurement contracts in response to local unrest. The effect of local unrest on aid contracts is driven by prefectures where the local government is fiscally constrained in its ability to increase public spending, helping to explain why the state uses foreign aid to address domestic unrest in addition to domestic stimulus.

Does the internal response to unrest in China affect the allocation of Chinese aid to other countries? The answer is not obvious *ex ante*. The allocation to specific countries could be fixed, and the response to unrest could only determine which Chinese firms receive a given set of contracts. However, qualitative evidence suggests that Chinese firms play a significant role in shaping China's aid allocation. Interviews with Chinese bureaucrats and firms ([Zhang and Smith, 2017](#)) suggest that aid contractors use their existing relationships with a given set of countries to shape projects in those countries and influence the aid allocation. Hence, when firms see the need to contract foreign aid projects, they could lobby the Chinese government to direct funds to those countries.

I use a panel of 102 low- and middle-income countries to test this hypothesis. I test whether a given country receives more Chinese aid when there is more labor unrest in Chinese prefectures with firms that have existing connections to the country. I find that China's response to domestic unrest indeed influences a significant share of its foreign aid allocation to other countries. The average number of yearly unrest events across Chinese prefectures cumulatively implies a reallocation of 21% of yearly Chinese aid.

Finally, what are the economic effects of this aid on recipient countries? The answer is again not obvious. On one hand, Chinese aid could have large economic returns given the trillion-dollar infrastructure gap in developing countries ([G20, 2021](#)). On the other hand, one may be concerned that the returns are captured by political elites ([Andersen, Johannessen and Rijkers, 2022](#)) or that Chinese firms crowd out local labor, especially since the aid is driven by the interests of the Chinese government and without policy conditions attached ([Burnside and Dollar, 2000; Svensson, 2000](#)). Estimating the effect of foreign aid on recipients is typically challenging because of reverse causality and omitted variables. Donors may allocate aid based on recipient outcomes, such as income levels or future growth potential, which would result in reverse causality. Additionally, unobserved factors such as the recipient's institutional quality could jointly determine aid and outcomes.

I create a novel instrument to address the identification challenges. The empirical strategy exploits the country and time variation in the receipt of Chinese aid caused by the timing and spatial variation in exogenous unrest in Chinese prefectures to estimate the causal effect of Chinese aid on recipients.

The instrumental variable for the amount of aid received by a country in a given year is the sum, across all Chinese prefectures, of lagged local unrest shocks in each prefecture interacted with the share of aid received by the country from each prefecture in the past. The shift-share instrument leverages two sources of variation. First, local unrest shocks in Chinese prefectures (the shifters) predict the allocation of aid contracts to firms based in those prefectures. Second, countries tend to receive more aid implemented by firms in prefectures with which they have existing connections (the shares). For example, when there is more unrest in Shenzhen in a given year, countries that received a larger share of aid from firms in Shenzhen in the past will receive more aid.

In shift-share instruments, causal identification can come from either exogenous shifters ([Borusyak, Hull and Jaravel, 2022](#)) or shares ([Goldsmith-Pinkham, Sorkin and Swift, 2020](#)). I follow [Borusyak, Hull and Jaravel \(2022\)](#) (BHJ) and assume that the shifters (unrest shocks) are conditionally orthogonal to future recipient countries outcomes, allowing the shares (lagged country-prefecture connections) to be endogenous. The baseline specification conditions on country

fixed effects to account for the fact that some countries generally receive more aid; and on continent-specific year fixed effects to account for regional economic shocks correlated with recipient country outcomes and unrest in China. Following BHJ, I reshape and estimate the IV specification at the shock level (prefecture-year level), which allows me to additionally control for prefecture and province-year fixed effects and other controls, analogous to the first part of this paper. The specification thus isolates the variation based on exogenous shocks to the distribution of local unrest over Chinese prefectures and time. Moreover, the BHJ framework allows for transparent tests of the identifying assumptions and correct statistical inference ([Adão, Kolesár and Morales, 2019](#)).

Causal identification of the IV estimates assumes that the instrument affects outcomes of the recipient countries only through the provision of Chinese aid, conditional on the baseline controls. 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 prefectures, for example, due to prefecture-country-specific trade shocks. Several robustness checks and falsification tests support the exclusion restriction.

The IV estimates show that an additional aid project on average increases GDP by 1.16 to 1.45% two to six years after commitment. The estimates imply that Chinese aid has positive spillovers and its economic returns exceed its cost in the short term. This finding challenges the view held by policymakers and influential studies (e.g. [Nunn and Qian, 2014](#)) that foreign aid allocated according to domestic needs of the donor and without policy conditions is mainly deleterious to recipients. This is important for policymakers since selfless aid is politically unrealistic. However, I find few benefits of Chinese aid for recipient populations in terms of consumption, employment or economic growth in the longer run (six years after commitment).

This paper contributes to the large literature on foreign aid, which has mostly focused on the U.S. and other OECD donors (see the reviews by [Easterly, 2003](#); [Qian, 2015](#)). Earlier cross-country studies documented that foreign aid was allocated according to the strategic needs of the donor government rather than the economic needs of the recipients ([Alesina and Dollar, 2000](#); [Kuziemko and Werker, 2006](#)). More recent studies have shown that such aid has strong

negative effects for recipient countries ([Crost, Felter and Johnston, 2014](#); [Nunn and Qian, 2014](#)). Given that all donors pursue policy goals with their foreign aid, understanding their goals and domestic political processes is important for understanding foreign aid as a whole. This is true for all donors but particularly so for China, which is now one of the largest but most poorly understood donors.

This study is the first to provide rigorous causal evidence for any determinant of Chinese aid and the underlying processes, which have been largely unknown. It is also one of the first to do so using contractor-level data for any large donor. A growing set of recent papers on Chinese aid mostly study its impacts.<sup>9</sup> The finding that Chinese aid has a positive short-term impact on recipients corroborates a recent cross-country study by [Dreher et al. \(2021a\)](#), which instruments Chinese aid with the interaction of a country's probability of receiving aid and changes in China's annual construction materials production or foreign exchange reserves. My study provides a novel, rigorous instrument for Chinese aid based on granular micro data. Documenting the processes behind the first stage at the firm level also increases the credibility of my instrument for examining the impact of aid on recipients in the second stage.<sup>10</sup>

This paper more generally contributes to research on how governments use economic policy to address political needs. A vast literature in economics speaks to governments' responses to domestic instability, including monetary policy (e.g., [Blanchard and Galí, 2010](#)), fiscal policy (e.g., [Michaillat and Saez, 2019](#)), trade policy (e.g., [Melitz and Redding, 2014](#)) and lending to other countries

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<sup>9</sup>[Bluhm et al. \(2018\)](#); [Martorano, Metzger and Sanfilippo \(2020\)](#); [Dreher et al. \(2021a\)](#); [Guo and Jiang \(2021\)](#) focus on economic impacts of Chinese aid on recipients; [Isaksson and Kotsadam \(2018\)](#); [Eichenauer, Fuchs and Brückner \(2021\)](#); [Wellner et al. \(2022\)](#); [Gehring, Kaplan and Wong \(2022\)](#); [Baehr, BenYishay and Parks \(2022\)](#) study impacts of Chinese aid on corruption, China's image, the stability of states, and deforestation; and [Dreher et al. \(2019, 2021b\)](#); [Isaksson \(2020\)](#) study the role of ethnic identity in Chinese aid to Africa.

<sup>10</sup>For example, interpreting [Dreher et al. \(2021a\)](#)'s estimates as causal requires the strong assumption that foreign exchange reserves only affect regular aid recipients of China through foreign aid, and not through other trade channels at the country level (which are presumably themselves affected by foreign exchange rates). See Section 4 for more discussion.

(Horn, Reinhart and Trebesch, 2020).<sup>11</sup> Recent studies find that government employment policies contribute to social stability by moderating domestic political conflict (Blattman and Annan, 2016; Fetzer, 2019; Wen, 2023). To the best of my knowledge, this paper is the first to show that foreign aid constitutes a further tool for governments to help secure domestic social stability.

Finally, this paper contributes to the recent literature on the political economy of civil participation in China (e.g., Cantoni et al., 2019; Bursztyn et al., 2021; Buntaine et al., 2022; Tan, Steinberg and McDowell, 2022; Campante, Chor and Li, 2023; Beraja et al., 2023). I add to this literature by demonstrating how China’s response to domestic unrest not only affects internal outcomes but – through its foreign aid – also those of other countries. Even though the effect of Chinese aid and the domestic political economy of unrest mitigation in China have been studied separately, their combination is new and important. This paper thus bridges the fields of domestic political economy and foreign policy, which so far have been studied largely separately in this literature.

The paper proceeds as follows. Section 2 provides background on Chinese foreign aid and its allocation process. Section 3 introduces the micro data and shows how China uses foreign aid projects to help address domestic unrest. Section 4 examines how the Chinese government’s political need to address domestic unrest influences its foreign aid allocation to other countries and quantifies the impact of Chinese aid on recipients. Section 5 concludes.

## 2. Background

### 2.1. Chinese Foreign Aid

China has provided record amounts of 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 has started ex-

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<sup>11</sup>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 (e.g., Cong et al., 2019), public employment and welfare payments (Wen, 2023), and fiscal transfers and public security spending (Campante, Chor and Li, 2023).

ceeding the United States' spending in developing countries ([AidData, 2021](#)).<sup>12</sup> There were over 400,000 Chinese overseas workers in low- and middle-income countries by the end of 2015 according to the Chinese National Bureau of Statistics. China has further intensified its financial engagement in developing countries with the Belt and Road Initiative launched in 2013.<sup>13</sup>

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.<sup>14</sup> In contrast to Western foreign aid (which also includes loans), Chinese aid does not attach policy conditions ([State Council, 2011](#)). However, it usually requires that at least 50%, usually more, of goods and labor used in the projects are supplied by Chinese firms ([Gelpern et al., 2021](#)).

The scope and characteristics of China's aid have attracted much controversy and speculation about its goals and benefits. China is generally thought to embody many negative features of major donors that undermine foreign aid efficacy. China regularly provides aid to countries with poor institutions, such as Angola and Sudan. Its bilateral nature and lack of policy conditions have raised concerns about Chinese aid being captured by elites and undermining Western donors' efforts. Many worry that China's use of own goods and labor may crowd out local firms and labor in recipient countries. Chinese loans are also said to lead to unsustainable debt levels that may hamper economic development by curtailing public funds, deterring foreign investment or leading to foreign exchange shortages ([Dreher et al., 2021a](#)).

On the other hand, countries with poor institutions may have the most urgent need for aid since they are underdeveloped and have difficulty financing

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<sup>12</sup>This number includes all bilateral official finance by Chinese government entities to government entities of low- and middle-income countries, including ODA-like (Official Development Assistance) and OOF-like (Other Official Finance) funding. The Chinese government itself does not clearly define foreign aid and does not provide disaggregated data. In this paper, I use the term *foreign aid* for all bilateral official finance with an economic development (non-commercial) purpose as classified by AidData. See Online Appendix A.1 for discussion.

<sup>13</sup>The Belt and Road Initiative is an umbrella term for Chinese state-sponsored economic activities abroad. It may include foreign aid projects but also private investment, trade promotion, etc., which are not in the scope of this paper.

<sup>14</sup>There are several Chinese government entities that extend aid to other countries. Online Appendix A.2 gives an overview on the most important entities and provides further details.

themselves on international markets. Developing countries have trillions of dollars in unmet demand for infrastructure ([G20, 2021](#)). Supporters argue that Chinese aid relieves critical financing bottlenecks for infrastructure that is crucial for economic development (e.g., [Moyo, 2011](#)). Chinese SOEs have the scale and expertise to build large-scale infrastructure, and a large supply of workers at low cost compared to contractors from developed countries, which makes them very competitive ([Huang and Chen, 2016](#)).

Much of this debate arises from a lack of understanding of the political processes and motives behind China's aid. Selfless aid is politically unrealistic for any donor. The broad involvement of Chinese SOEs fuels suspicions that aid is being wielded as a political tool. Many Western observers therefore believe that China's foreign aid is driven *exclusively* by geopolitical goals, including fostering ties with autocrats, gaining access to natural resources, or entrapping recipients with loans to seize strategic assets upon default (e.g. [Naim, 2007](#)). In contrast, prominent China scholars believe that China's foreign policy is driven primarily by domestic goals, most importantly securing political stability to ensure the regime's survival ([Shirk, 2008](#)). The Chinese state has emphasized the economic benefits of giving aid for China itself to its citizens ([Sun, 2015](#)).

Given the secrecy surrounding China's aid, the actual goals and processes behind China's aid are largely unknown. There is no rigorous existing empirical evidence on the causal determinants of China's aid allocation. In what follows, I argue that domestic political stability is an important driver of China's aid allocation, both internally and to other countries. I then provide empirical support for this hypothesis and examine its consequences.

## ***2.2. Domestic Stability and Chinese Foreign Aid***

The Chinese central government oversees the Chinese foreign aid program. Its overarching policy goal is domestic political stability ([Shirk, 2008; State Council, 2021](#)). Labor unrest, which is common across China, signals potential threats to domestic stability. The central government thus has incentives to both tolerate labor unrest to a certain degree and also to prevent local events from becoming

larger movements that could threaten national stability (Lorentzen et al., 2013).

See Online Appendix A.3 for more background on unrest in China.

Qualitative and recent empirical evidence shows that the Chinese state uses public employment as an important tool to help address domestic unrest. Public employment as a pacification policy has several advantages over other tools at the disposal of the government, including direct transfers, censorship, and repression (for an excellent discussion, see Wen, 2023).<sup>15</sup>

The Chinese central government first and foremost encourages local governments to use domestic spending to create public employment, shore up public support and address unrest. Local governments in China are responsible for 85% of government budgetary spending and responsible for most domestic infrastructure investment (Wingender, 2018). Due to potential moral hazard, it is in the interest of the central government to let local governments primarily address local unrest using their own funds. However, government spending has decreasing returns (Brandt et al., 2020), and high spending may lead to unsustainable local government debt levels (Cong et al., 2019).<sup>16</sup> Moreover, unrest tends to take place when domestic demand is low.

Infrastructure foreign aid projects offer a potential solution. First, aid projects generate counter- or acyclical demand for Chinese goods, thereby both creating jobs in Chinese factories and allowing for sending Chinese workers (including protesters) overseas. Second, since most of China's aid comes in the form of loans that are repayable by other countries, it does not add to China's domestic debt in the long term. Third, providing foreign aid to other countries likely benefits China in other ways (e.g., by promoting trade and political alliances (Dreher et al., 2018)). Finally, unlike domestic infrastructure programs, aid projects tend not to benefit local government officials directly and thus reduce the likelihood of moral hazard. From the Chinese central

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<sup>15</sup>By providing a wage income, workers' opportunity cost of protesting increases, decreasing protest participation (Becker, 1968). Direct transfers may be susceptible to fraud, seen as unfair, and create moral hazard. Violent repression of unrest increases the risk of uprising (Acemoglu, Ticchi and Vindigni, 2010).

<sup>16</sup>For example, China's central government in response to the 2008 Great Recession encouraged local governments to expand their balance sheets to encourage domestic infrastructure construction. Local governments consequently indebted themselves to record levels, impairing their ability to stimulate demand using fiscal spending in the future (Copper, 2016).

government's perspective, the net return to providing foreign aid may thus equal or even exceed the long-term net return to domestic, more direct measures aimed at securing domestic stability. Allocating foreign aid projects is thus a viable tool to complement other measures aimed at securing domestic stability such as domestic infrastructure construction. It makes sense for the Chinese government to employ different measures to address unrest at the same time until their marginal returns are equalized.

Qualitative evidence supports the idea that domestic political stability is an important goal behind China's aid. For example, [Copper \(2016\)](#) comments 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 of aid.*

The Chinese aid allocation process is consistent with this motive. The Ministry of Commerce (MOFCOM), rather than the Ministry of Foreign Affairs, manages China's aid program. MOFCOM's mandate includes formulating policy to foster domestic economic growth and employment stability ([Zhang and Smith, 2017](#)). It reports to the State Council, the highest organ of the Chinese central government, which provides the general aid strategy. The Chinese government does not disburse loans and other aid directly to recipient countries, but instead usually pays the Chinese contractors to deliver goods and services to the recipient countries. The government contractually ensures that the majority of goods and labor are sourced from China, as financing agreements between the Chinese and recipient governments show ([Gelpern et al., 2021](#)).

The Chinese central state-owned firms have a dual mandate: they are profit-oriented but also designated to help the government implement its policy goals. [Liu, Schindler and Liu \(2020\)](#) argue that central SOEs abroad primarily pursue strategic objectives while local SOEs and other firms mainly pursue profits. Central SOEs should thus help secure social stability in China by providing employment during times of unrest, not the least through promoting foreign aid

projects. In Subsection 3.4, I use systematic text analysis to demonstrate that these firms indeed internalize this policy goal.

Qualitative evidence based on interviews suggests that the state-owned foreign aid contractors play a substantial role in the allocation of aid projects. MOFCOM’s Department of Foreign Aid often relies on the subsidiaries of Chinese firms in recipient countries to select projects (Zhang and Smith, 2017). Central state-owned firms 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. Their relationships allow these firms to create and shape aid projects in recipient countries they typically operate in (Zhang and Smith, 2017). Hence, when firms see the need to contract aid projects, they can direct public funds to projects in countries they typically work with. This process allows the Chinese state to allocate aid projects, through the firms under its direct control, relatively fast and unbureaucratically in response to its needs (Brautigam and Hwang, 2020).<sup>17</sup> Figure A.2 in the Online Appendix summarizes this process.

### 3. Domestic Stability and Aid Contract Allocation

In this section, I test the hypothesis that the Chinese state – through its firms – uses foreign aid it provides to other countries to help address unrest in China. I then investigate how effective this strategy is in securing future political stability and how it complements other measures to address unrest. In Section 4, I then examine how the need to secure domestic stability influences China’s aid allocation to other countries and how such aid affects the recipients.

#### 3.1. *Empirical Strategy*

The main threats to identification are reverse causality and joint determination of aid and unrest. For example, an increase in China’s aid budget may increase

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<sup>17</sup>Swedlund (2017, pg. 128-129) writes: “One donor official recounted ... having it explained to him that, if a traditional donor wants to build a road in 2012, the process needs to start in 2007. If the Chinese are going to build the same road, they start in 2011, and it is finished in 2012.”

the demand for Chinese labor, raising workers' opportunity cost of engaging in future unrest. Alternatively, aid and unrest could be jointly determined by a third factor, such as a global recession that simultaneously increases the levels of unrest across China and the amount of aid given by China in a year.

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 more contracts for foreign aid projects are allocated to firms that are based in Chinese prefectures experiencing local labor unrest. I estimate the following specification at the prefecture-year level:<sup>18</sup>

$$\text{aid}_{p,t} = \sum_s^S (\text{unrest}_{p,t-s} \beta_s + X'_{p,t-s} \Gamma_s) + \alpha_p + \delta_{prov,t} + \zeta_p t + \epsilon_{p,t}, \quad (1)$$

where  $\text{aid}_{p,t}$  is the total number or financial value of aid contracts allocated to firms in prefecture  $p$  in year  $t$ , and  $\text{unrest}_{p,t}$  is the number of labor unrest events in prefecture  $p$  in year  $t$ .  $X'_{p,t}$  denotes a vector of control variables at the prefecture-year level (lagged local GDP, population and government revenues in the baseline).  $\alpha_p$  and  $\delta_{prov,t}$  denote the vectors of prefecture and province-year fixed effects.  $\zeta_p t$  denotes prefecture-specific linear time trends.  $\epsilon_{p,t}$  denotes standard errors, which are clustered at the prefecture level. In the results section, I also report regressions with different sets of fixed effects, controls, and leads and lags of unrest. In the robustness section, I also re-estimate the regressions at the firm-year level and additionally include firm-specific controls.<sup>19</sup>

The province-year fixed effects control for changes over time that affect all prefectures within a Chinese province similarly. Their inclusion prevents omitted variable bias from unobserved potential joint determinants of the yearly levels of overall Chinese aid and unrest within a province, including macroeconomic variables such as Chinese reserves (Dreher et al., 2021a) or provincial

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<sup>18</sup>The recent econometrics literature has pointed to potential issues with heterogeneous treatment effects in two-way fixed effects specifications. Approaches to address this issue have focused on staggered difference-in-differences specifications (for an overview see Roth et al., 2023). Equation 1 is a distributed lag model with continuous, repeated treatments and not a staggered difference-in-differences specification. To my knowledge, there is currently no estimator robust to heterogeneous treatment effects that is applicable to this specific case.

<sup>19</sup>My preferred specification is at the prefecture-year level because my main explanatory variable, unrest, is at the prefecture-year level, it allows for entry and exit of firms, and does not overweight prefectures with many firms.

policies. The prefecture fixed effects control for time-invariant differences across prefectures. Omitted variables correlated with both the average amount of aid contracts allocated to firms and unrest intensity in a prefecture would bias the estimates of  $\beta_s$ . For example, firms in manufacturing hubs may tend to experience more unrest but also contract more aid projects on average, biasing  $\beta_s$  upwards. The prefecture fixed effects prevent such bias.

The coefficient of interest is  $\beta_{-1}$ . It captures the effect of local unrest on the amount of aid contracts allocated to firms in the prefecture in the next calendar year. I hypothesize that  $\beta_{-1} > 0$  and  $\beta_s = 0$  (or  $\beta_s < \beta_{-1}$ ) for all other  $s$ , i.e., that local unrest lagged by one year, but less so at other leads and lags, affects aid contract allocation to local firms.<sup>20</sup> I interpret  $\beta_{-1} > 0$  as evidence for the Chinese government using foreign aid to help address domestic labor unrest.

To mitigate potential concerns related to reverse causality and spurious co-movement of local unrest and aid over time (e.g., because aid contract allocation may influence future unrest), I also control for other leads and lags of local unrest. Conditional on prefecture and year fixed effects, as well as other leads and lags of local unrest and controls, the amount of foreign aid contracts committed to firms in a prefecture should not influence local unrest in the previous year. Note that the vast majority of unrest in my sample does not involve aid contractors and is unrelated to the conditions in aid-recipient countries (see Subsection 3.2), further mitigating reverse causality concerns.

The remaining threats to identification are prefecture-specific, time-varying variables that are spuriously correlated with both lagged local labor unrest and the amount of aid contracts allocated to local firms. Note that many potential confounders are not a concern because unrest is usually associated with domestic *local* issues, whereas aid project allocation is in the hands of the *central* government. Nevertheless, 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

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<sup>20</sup>As explained in Section 2, the Chinese aid allocation process can rapidly react to local unrest. However, unrest may have little effect on aid allocation in the same calendar year since aid budget and allocation are typically determined in the previous calendar year.

on aid contracts. 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  $\beta_{-1}$  coefficient would have a different interpretation than aid contracts being allocated specifically to address local unrest.

I address such alternative interpretations in several ways. First, I control for potential time-varying covariates of local unrest and aid contract allocation.

Second, I instrument for local unrest using local weather conditions following [Beraja et al. \(2023\)](#). The instrument is based on 18 weather variables collected daily by weather stations across China. Additionally, the variables are interacted with each other and allowed to vary by whether unrest occurred in at least one other prefecture on a given day. To restrict the researcher's degrees of freedom and reduce the dimensionality of the vector of potential instruments, predictors of unrest are then selected by LASSO and aggregated to the yearly level. Local weather conditions are exogenous to potential unobserved shocks that could be correlated with both local unrest and aid contract allocation to local firms, conditional on prefecture and year fixed effects.

Finally, I use systematic text analysis on firms' annual reports to show that central state-owned firms, but not other aid contractors internalize the state's goal of maintaining social stability. This motivates an important placebo check. In response to an increase in local unrest, firms not under the control of the central government should only bid on aid contracts differentially if there are unobserved local shocks that are correlated with both unrest and aid allocation. If, as hypothesized, political motives drive aid contract allocation to central state-owned firms, we should see no such effect for other aid contractors.

### ***3.2. Data and Descriptive Statistics***

The Chinese government does not publish official, disaggregated data on its foreign aid or on unrest. Existing unofficial databases that collect information on Chinese aid projects do not allow for systematic linking of aid projects to local Chinese contractors. This subsection introduces the novel dataset I construct to address these difficulties and provides descriptive statistics.

**Project-level aid data.** I use AidData’s Geocoded Global Chinese Official Finance Database Version 2.0 ([Tierney et al., 2011](#)), abbreviated as AidData 2.0, which is the most comprehensive public database on Chinese aid projects in 2000–2017. The data is based on tens of thousands of government reports, news articles, policy documents and other sources. I include all projects that are financed by a Chinese government agency or policy bank, involve a Chinese contractor, are in a low- or middle-income country, have a development purpose, have not been cancelled, and are recommended by AidData for research. The data include the year of commitment,<sup>21</sup> financial value, recipient country, type of finance, sector, funding agency, and a short description for each project. See Online Appendix [B.1](#) for a detailed description of the data.

The resulting dataset includes 1347 projects in 102 countries committed between 2000 and 2017. The average project is worth 48 million USD (in constant 2017 USD). Most of the projects are classified as ODA-like (89%) and include grants, concessional loans, and other financing. The vast majority of aid projects implemented by Chinese firms are in the form of hard infrastructure, such as roads and power plants. Figure [2](#) shows the global distribution of aid projects in the sample; Online Appendix Table [A.1](#) lists the largest projects; and Online Appendix [B.1](#) provides descriptive statistics for the main estimation sample.<sup>22</sup>

**Firm-level data.** I construct a firm-year level dataset by 1) systematically identifying the set of potential Chinese aid contractors from official but previously unused records by the Chinese Ministry of Commerce, 2) linking the contractors to administrative firm-level datasets from China, including tax records, and 3) linking the contractors to the aid projects described above. The result is a panel of the quasi-universe of Chinese firms licensed by the government to contract overseas infrastructure projects. For most specifications, I aggregate the data to the prefecture-year level.

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<sup>21</sup>This is standard in the literature (e.g., [Dreher et al., 2021a](#)). Information about the year of disbursement is unavailable for a large share of projects in the data.

<sup>22</sup>While I do not collect information about projects without Chinese contractors, a comparison using [Dreher et al. \(2021a\)](#) shows that Chinese firms implement around 80% of the financial value of Chinese aid projects. The aid projects not included in the sample are typically small and do not involve a contractor (e.g., in-kind donations and stipends) or are supplied by foreign firms (e.g., SOEs of the recipient country).

While AidData 2.0 provides the names of involved Chinese firms, the names are often conglomerates or holding companies with multiple subsidiaries across China. This has so far prevented researchers from linking data on Chinese aid projects to administrative firm data and from conducting analysis at the firm or prefecture level. To address this challenge, for each aid project, I systematically identify the local subsidiary in China that implemented the project using administrative data from the Chinese Ministry of Commerce and Chinese business registration records. Online Appendix B.1 describes the data construction process and sources in detail.

The main outcome variables are the number and financial value of aid contracts allocated to firms in a prefecture and year. The number of contracts is my preferred measure since it suffers less from measurement error than the financial value, which is missing for 16% of all projects.<sup>23</sup> I additionally link data from the Chinese tax surveys to calculate firm employment and firm-level control variables, as well as several other datasets such as domestic procurement contracts for additional analyses. See Online Appendix B.1.

The panel includes 4544 firms, of which 1182 are subsidiaries of central SOEs.<sup>24</sup> 313 firms supply Chinese aid projects at least once during my sample period, of which 161 are central SOEs. Table A.4 in the Online Appendix provides firm-level descriptive statistics for the main estimation sample. The 4544 firms are located in 235 different prefectures across China. Figures A.3 and A.4 show the spatial distribution of Chinese aid contractors across China.

**Unrest data.** I measure local unrest intensity as the number of labor unrest events in a prefecture and year. I combine data on strikes and worker protests across China from two unofficial sources: *China Strikes* (Elfstrom, 2017), covering 2003 to 2011, and *China Labour Bulletin* (CLB) (China Labour Bulletin, 2019), covering 2012 to 2019.<sup>25</sup> These data are crowd-sourced from

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<sup>23</sup>I calculate the financial value of a contract as the value of the entire project divided by the number of Chinese firms involved in the project. I do not observe the details of the contracts underlying the projects such as the exact payment made to each firm.

<sup>24</sup>Other firms include private firms and (former) local SOEs. I exclude joint ventures, collective firms and foreign firms, which constitute only a small fraction of aid contractors.

<sup>25</sup>I thank Manfred Elfstrom for providing the *China Strikes* data. CLB is an NGO based in Hong Kong. The CLB data generally follow the same scope and method as *China Strikes*.

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 (e.g., Qin, Strömberg and Wu, 2019; Campante, Chor and Li, 2023). For each unrest event, the data include its date, prefecture, sector, and a short description. Online Appendix A.3 provides background on unrest in China; Online Appendix B.4 provides details on the unrest data.

There are 12625 reported unrest events during 2003–2019 in the original data. Figure 3 in the Online Appendix shows a map of the average unrest intensity for each prefecture. Unrest takes place in all of China’s densely populated regions. Most unrest events take place at aid-unrelated firms since aid contractors in my sample make up only a small subset of all Chinese firms. The majority of unrest events are related to wage arrears in private firms. For example, in 2012 over 500 construction workers protested against a real estate developer in Xi’An who had not paid wages in two years.

The Chinese government largely tolerated reporting on labor unrest events during the study period, presumably to serve as signal for where it needs to allocate resources to secure political stability (Lorentzen, 2014; Campante, Chor and Li, 2023). Nevertheless, selective reporting is a potential concern. *China Strikes* and *CLB* acknowledge that they cannot record all unrest events. In addition, the increasing availability of the internet may have led to more reporting of unrest events over time. For the purposes of this paper, such concerns are not major: First, I include prefecture fixed effects, province-year fixed effects, and prefecture-specific trends to capture classical measurement error and local trends in reporting over time. Second, the results are robust to instrumenting for unrest using local weather shocks (see Subsection 3.4). Third, selective reporting would only lead to bias if it were systematically correlated with the allocation of aid contracts to firms, which is implausible.

**Other micro data.** I collect a set of socioeconomic variables at the prefecture-year level from the China City Statistical Yearbooks. I harmonize all prefecture-level variables to 2003 prefecture borders. See Online Appendix Table A.5 for prefecture-level descriptive statistics. Other micro data used for complementary analyses is described in Online Appendix B.4.

### ***3.3. Main Estimates***

Tables 1 and 2 show the first main result. They show the effect of unrest lagged by one year in a prefecture on the number of aid contracts allocated to firms in the prefecture for different sets of fixed effects and controls, which do not qualitatively affect the result. The estimation samples are balanced to facilitate comparison across columns. The most rigorous specification is column (5), which controls for prefecture and province-year fixed effects, prefecture-specific trends, and baseline controls. Table 1 column (5) shows that one additional unrest event in a Chinese prefecture is associated with the allocation of 0.02 more aid contracts to firms in the prefecture in the following year. The coefficient is statistically significant at the 5% level.

Tables A.6 and A.7 in the Online Appendix restrict the sample to prefectures with at least one firm that ever successfully contracts an aid project during the sample period. For these prefectures, one additional unrest event in a Chinese prefecture is associated with the allocation of 0.06 more aid contracts to firms in the prefecture in the following year. The coefficient is statistically significant at the 1% level. To interpret the magnitude of the estimated effect, note that a one standard deviation increase in unrest increases the number of contracts allocated to firms in a prefecture by 0.38 SD or 68% of its mean.<sup>26</sup>

The cumulative effect is also sizeable. The coefficient multiplied with the total average number of unrest events in China in a given year corresponds to 30 projects, or around 58% of China's yearly aid on average.<sup>27</sup> 30 aid contracts on average have a total value of 1.45 bn USD, as much as around 10% of average annual public security spending by the central government in the sample period (Ministry of Finance of the People's Republic of China, 2012).

### ***3.4. Robustness and Falsification Tests***

**Instrumenting for unrest.** Table 3 shows that the main result is robust to instrumenting for local unrest using exogenous local weather conditions in

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<sup>26</sup> $10.2 \cdot 0.0615 / 0.926 = 0.677$

<sup>27</sup>There are 493 lagged unrest events and 52 aid contracts allocated across China in a year on average during the sample period.  $493 \cdot 0.0615 / 52 \approx 0.58$ .

Chinese prefectures. As explained in Subsection 3.1, the IV specification selects a set of weather conditions predictive of unrest using LASSO following Beraja et al. (2023).<sup>28</sup> The IV coefficients are larger than the OLS estimates, possibly due to attenuation bias caused by measurement error in the unrest variable or because they reflect a specific LATE. This test provides further evidence that the effect of unrest on aid contract allocation is causal.

**Leads and lags.** One may be worried that aid contract allocation was already increasing in prefectures with unrest before unrest took place. Figure A.5 in the Online Appendix shows the coefficients from Equation (1) for different leads and lags of unrest with the number of contracts as the outcome variable. Online Appendix Table A.8 shows the corresponding estimates. One additional unrest event in a Chinese prefecture is again associated with the allocation of 0.02 more aid contracts to firms in the prefecture in the following year. Reassuringly, the coefficients on other leads and lags of unrest are small and statistically insignificant at the 5% level. These results are consistent with aid reacting to the occurrence rather than the anticipation of unrest.

**Robustness to firm-level controls.** The main specification is estimated at the prefecture-year level because that is the unit of variation of the main explanatory variable, local unrest. Online Appendix Table A.9 shows the corresponding results for firm-year level regressions. The main conceptual difference is that the firm-level regressions effectively weigh each prefecture by the number of firms in them. The firm-level estimates are qualitatively comparable to the prefecture-year level estimates. Online Appendix Table A.10 additionally controls for firm-level variables that could be correlated with local unrest and aid contract allocation to a firm: the lagged number of employees and firm operating income. This analysis uses a subset of the sample since these variables are only available for firms that participated in the 2007–2015 tax

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<sup>28</sup>The weather conditions are allowed to interact with each other and unrest elsewhere in China on a given day. Daily variation in local weather, unrest elsewhere and their interactions are then aggregated to the year level. See Beraja et al. (2023) for details. The LASSO-selected instruments are (the absence of) fog interacted with hail; frost interacted with gusts and unrest elsewhere on the same day; tornado conditions interacted with haze and unrest elsewhere; and haze interacted with itself and unrest elsewhere. The IV specification controls for year instead of province-year fixed effects as in the main specification because there is insufficient variation in weather conditions among prefectures within a given province.

surveys. The results with these additional controls are very similar to those in Online Appendix Table A.9, implying that firm-specific economic factors do not confound the observed relationship between unrest and aid contract allocation.

**Firm ownership and placebo check.** Aid contractors not owned by the central government are mainly profit-oriented and do not internalize the social stability motive (Bai, Lu and Tao, 2006). They should thus only bid on aid projects when there is local unrest if there were local economic shocks or policies correlated with both local unrest and aid allocation. This motivates a placebo check: Table 4 shows the effect of local labor unrest on aid contract allocation to central SOEs and other firms separately.<sup>29</sup> Reassuringly, the relationship between unrest and aid allocation is entirely driven by the firms under the direct control of the central government.<sup>30</sup> This placebo check provides further evidence that the state's need to address local unrest, rather than other factors, explains the relationship between unrest and aid contract allocation.

To verify that central SOEs, but not other firms, internalize the state's goal of moderating unrest, I systematically analyze listed firms' annual reports. For each firm and year, I count how frequently firms' annual reports mention each of several keywords related to maintaining social stability relative to the total word count. I then re-estimate the baseline specification using the keyword count as the outcome variable. I use the first principal component of all key words to summarize the outcomes in a single index.<sup>31</sup> Figure A.8 shows the results. Each black dot is the standardized coefficient from a regression of the frequency of the keywords listed on the left-hand side of the figure on lagged local unrest, controlling for firm and province-year fixed effects as well as prefecture-specific trends, for central state-owned firms. The gray dots are the standardized coefficients for other firms. The figure shows that central state-owned firms, but

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<sup>29</sup>The sum of the number of central SOEs and other firms does not equal the number of firms in the main sample because data on firm ownership is not available for some firms.

<sup>30</sup>Note that unrest has no effect on aid contract allocation to local SOEs; this makes sense since China's aid is administered by the central government. Moreover, allocating contracts to local SOEs in response to unrest is undesirable from the central government's perspective because it could create moral hazard.

<sup>31</sup>For unlisted firms, I use the reports of listed firms in the same conglomerate and prefecture. I use all keywords related to social stability, security and responsibility that across firms appear at least once per year in firms' annual reports on average.

not other firms, mention keywords related to maintaining social stability and responsibility significantly more frequently in response to local unrest.

**Spillovers.** To address the potential concern that the effects are confounded by local spillovers across prefectures, Online Appendix Table A.11 controls for lagged unrest in neighboring prefectures. Unrest in neighboring prefectures is uncorrelated with aid contract allocation to firms in a given prefecture, and does not qualitatively affect the estimated relationship between local unrest and aid contract allocation in the prefecture.

**Excluding specific prefectures and years.** Figures A.6 and A.7 in the Online Appendix show the coefficients for the preferred specification, dropping each year and prefecture one-by-one, but analogous to the main specification otherwise. The figures show that the main result is not driven by any one particular prefecture or year.

**Placebo outcomes.** Online Appendix Table A.12 shows the effect of lagged unrest on other prefecture-level outcomes. All coefficients are standardized for ease of interpretation. The results show that unrest does not affect local population growth, GDP, wages, public income or expenditures in the next period. These results are again consistent with aid contracts being driven by unrest itself rather than economic shocks that may be correlated with unrest. Alternatively, the economy may not be affected precisely because of the government's measures taken in response to unrest (including aid contract allocation to firms in prefectures experiencing unrest).

### ***3.5. What is the Role of Other Measures to Address Unrest?***

The primary goal of this paper is to understand what drives China's aid rather than how China secures domestic stability in general. Nevertheless, I here examine whether foreign aid projects are a substitute or complement for other, domestic measures aimed at securing stability. I focus on government procurement for domestic projects, which like foreign aid projects are presumably aimed at stimulating domestic employment.

Table A.13 in the Online Appendix regresses the number of domestic government procurement contracts allocated to firms in my main sample on lagged

local unrest.<sup>32</sup> The specification is identical to the main specification. The coefficient is positive and statistically significant for the specifications without prefecture-specific time trends.<sup>33</sup> To interpret the magnitudes, on average one standard deviation increase in unrest in a prefecture leads to the allocation of additional domestic procurement contracts worth around 70 mn USD and aid contracts worth around 10 mn USD to the firms in the prefecture for the sample including all firms.<sup>34</sup> Note that domestic procurement contracts may not only include domestic infrastructure construction but also investments in public security and so forth. It is also worth noting that this effect is driven by procurement contracts of local governments but not the central government. As explained in the Background section, due to potential moral hazard by local governments, it makes sense for the central government to allocate foreign aid contracts rather than domestic procurement contracts in response to unrest.

Overall, these results suggest that foreign aid and domestic spending – both presumably aimed at stimulating employment – are complements rather than substitutes. It makes sense for the Chinese state to simultaneously use multiple tools to address unrest. Allocating foreign aid contracts is one of these tools.

### ***3.6. Heterogeneity***

To further inform channels, Table 5 shows heterogeneity in the effects of local unrest on aid contract allocation to firms in a prefecture depending on characteristics of the prefecture.

**Local government spending.** As explained in the Background section, the net return to allocating aid contracts is higher in prefectures with high existing local government spending from the perspective of the central government. Domestic stimulus has lower returns in those areas and, unlike loans for foreign

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<sup>32</sup>The data are based on official records by the Chinese government’s China Government Procurement website. See Online Appendix B.3 for details.

<sup>33</sup>The coefficients are smaller and statistically insignificant when controlling for prefecture-specific time trends, likely due to a lack of variation. The sample for the procurement contracts is much smaller because data is only available from 2013 to 2017.

<sup>34</sup>Domestic contracts are worth 5 mn on average.  $10 \cdot 1.407 \cdot 5 \approx 70$ . Aid projects are worth 48 mn on average.  $10 \cdot 0.06 \cdot 48 \approx 10$ .

aid projects, contributes further to local government debt. We therefore expect aid contracts to react stronger in prefectures with high existing local spending.

To test this hypothesis, Table 5 column (1) interacts lagged unrest with the prefecture's past public expenditure/GDP ratio. As expected, unrest has a significantly higher effect on aid contract allocation where the local government is more constrained in its ability to stimulate demand using its own expenditures. This helps explain why the Chinese state uses aid projects to help secure stability in addition to domestic measures. As expected, aid contracts do not respond to unrest in prefectures with low existing local government spending.

**Local GDP growth.** Column (2) regresses aid contracts on past GDP growth and its interaction with unrest. The small and insignificant coefficients on GDP growth and the interaction term indicate that aid contracts are independent of local GDP growth, conditional on unrest. This result is a further indication that aid contract allocation is driven by threats to political instability rather than economic shocks or economic interests of local governments.

**Local officials' incentives.** Local government officials' incentives to prioritize political stability over economic growth have been said to increase significantly once they reach the age above which they are no longer promoted (56 years according to [He, Wang and Zhang \(2020\)](#)). If the aid contract allocation to firms in response to unrest were driven by local officials rather than the central government and its firms, we should therefore see a stronger response in prefectures with older local officials. Columns (3) and (4) show that this is not the case: aid contract allocation does not respond stronger to unrest in prefectures with a mayor or party secretary above 56 years old.

### ***3.7. Do Aid Contracts Help Secure Future Stability?***

**Effect of aid contract allocation on employment.** Table 6 examines the effect of local unrest on firm employment for different types of firms. Column (1) shows that central SOEs that ever contract an aid project during the sample period on average increase employment by approximately 4% for every additional unrest event. The effect is statistically significant at the 1% level.

This result is consistent with aid projects generating employment in Chinese aid contractors under the control of the central government.

In contrast, unrest has no positive effect on employment in firms that do not contract aid projects or are not owned by the central government. This reassuring result goes against the possibility that the relationship between unrest and employment for centrally owned aid contractors is driven by aid-unrelated effects of unrest or omitted variables.

**Effect of aid contract allocation on unrest.** I next test more directly whether aid contract allocation contributes to future stability. Given that aid contracts are a function of unrest in the previous year, a regression of aid contracts on future unrest would be biased if there is auto-correlation over time in local unrest. I instead follow [Beraja et al. \(2023\)](#) and test whether past aid contracts mitigate the effects of exogenous weather shocks conducive to unrest on the occurrence of future unrest. To do so, I regress the number of unrest events in a prefecture and year on local weather shocks, allowing the effect of weather shocks on unrest to vary with the number of aid contracts allocated to firms in the prefecture in the past (controlling for the usual fixed effects). The intuition is as follows: as the LASSO IV result above demonstrates, certain exogenous weather conditions usually lead to unrest. If these weather shocks are less likely to lead to future unrest in prefectures that received more aid contracts in the past, this implies that aid contracts help suppress future unrest.<sup>35</sup>

Table 7 column (5) shows the results for the specification with the complete set of fixed effects and controls. See columns (1) and (4) for alternative sets of controls, which do not qualitatively affect the results. The results show that weather shocks conducive to unrest are indeed strongly associated with unrest, consistent with the LASSO IV first stage. However, for each standard deviation increase in the number of aid contracts allocated to the prefecture in the past, the effect of weather shocks on unrest is 15% smaller ( $0.043/0.282 \approx 0.152$ ). For comparison, using a similar specification, [Beraja et al. \(2023\)](#) find that each

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<sup>35</sup>Conducive weather is constructed as the number of unrest events in a prefecture  $p$  and year  $t$  predicted by the LASSO-selected IVs from Section 3.4, partialing out prefecture and year fixed effects. Aid stock is constructed as the number of aid contracts allocated to firms in prefecture  $p$  up to  $t - 1$ , partialing out prefecture and year fixed effects.

standard deviation increase in AI technology investments mitigates the effect of weather shocks on unrest by approximately 25%. Taken together, these results suggest that aid contract allocation significantly contributes to future stability, even compared to measures more directly aimed at suppressing unrest.

One potential concern with this exercise is that while weather shocks are exogenous, past aid is not. For example, if past aid is correlated with higher local government spending, future unrest may be mitigated not because of aid but because of this other spending. To address this possibility, I add past local government expenditure as well as its interaction with weather shocks as additional controls. Reassuringly, Table A.14 in the Online Appendix shows that this does not qualitatively affect the estimate of the interaction between weather shocks and past aid. That is, past aid contributes to future stability beyond local government expenditure.

## 4. Consequences for Recipient Countries

Section 3 showed that the Chinese state’s political need to address domestic unrest influences the allocation of contracts for foreign aid projects to Chinese firms. I now examine the consequences for recipient countries. I introduce a novel instrumental variable for the amount of aid received by a country from China in a given year. The strong first stage both shows that China’s domestic goals significantly influence the allocation of Chinese aid to other countries, and allows me to quantify causal effects of Chinese aid on recipient countries.

### 4.1. Empirical Strategy

The main challenges for estimating the causal effects of foreign aid on recipients are the issues of reverse causality and joint determination. To help understand the identification challenges, first consider a simple regression of country  $i$ ’s outcome on the level of aid received by China  $s$  years prior:

$$Y_{i,t} = \beta \text{aid}_{i,t-s} + \mathbf{X}_{i,t-s}\Gamma + \alpha_i + \delta_{rt} + \epsilon_{i,t}, \quad (2)$$

where  $Y_{i,t}$  is an outcome of country  $i$  in year  $t$  (e.g., GDP) and  $\text{aid}_{i,t-s}$  is the number of Chinese aid projects received by country  $i$  in year  $t-s$ .  $\mathbf{X}_{i,t-s}$  denotes

a vector of controls (population and outcome variable at the beginning of the period in the baseline).  $\alpha_i$  and  $\delta_{rt}$  denote country and region-year fixed effects.

$\beta$  is the effect of an additional Chinese aid project on the recipient country outcome  $s$  years later. However, the coefficient captures reverse causal effects if China allocates aid based on recipient outcomes. For example, if China allocated more aid to poorer countries, 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 construct an instrumental variable for the amount of aid received by a country in a given year. The shift-share instrument leverages two sources of variation. First, local unrest shocks in Chinese prefectures (the shifters) predict the allocation of aid contracts to firms based in those prefectures. Second, countries tend to receive more aid implemented by firms in prefectures with which they have existing connections (the shares). For example, when there is more unrest in Shenzhen compared to other Chinese prefectures in a given year, countries that received a larger share of aid from firms in Shenzhen in the past will receive more aid.

The logic is as follows. When there is more labor unrest in a prefecture, firms based in those prefectures look for opportunities to implement foreign aid projects in countries they usually work with.<sup>36</sup> The Chinese central government then tends to allocate the contracts for these aid projects to those firms. Hence, variation in local unrest across Chinese prefectures generates variation in the amount and timing of Chinese aid received by other countries.

The second and first stages of the 2SLS specification are, respectively:

$$Y_{i,t} = \beta \widehat{\text{aid}}_{i,t-s} + \mathbf{X}_{i,t-1-s}\Gamma + \alpha_i + \delta_{rt} + \epsilon_{i,t} \quad (3)$$

$$\text{aid}_{i,t} = \gamma Z_{i,t-1} + \mathbf{X}_{i,t-1}\Theta + \alpha_i + \delta_{rt} + \mu_{i,t}. \quad (4)$$

The instrument  $Z_{i,t-1}$  for  $\text{aid}_{i,t}$  is the sum, across all Chinese prefectures, of the number of local unrest events in a prefecture at  $t - 1$  interacted with the

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<sup>36</sup>Since the launch of the central government’s “Go Out” policy in 2000, Chinese firms have specialized in different sets of countries to avoid competition with each other and exploit returns to scale ([Zhang and Smith, 2017](#)).

share of aid received by the country from firms in the prefecture up to  $t - 1$ :

$$Z_{i,t-1} = \sum_p (\text{unrest}_{p,t-1} \cdot \omega_{i,p,t-1}), \quad (5)$$

where

$$\omega_{i,p,t-1} = \frac{\sum_{\tau=0}^{t-1} \text{aid}_{i,p,\tau}}{\sum_{\tau=0}^{t-1} \sum_p \text{aid}_{i,p,\tau}}. \quad (6)$$

The shares sum up to 1 across prefectures for a given country.

In shift-share instruments, causal identification can come from either exogenous shifters ([Borusyak, Hull and Jaravel, 2022](#)) or shares ([Goldsmith-Pinkham, Sorkin and Swift, 2020](#)), conditional on controls. I follow [Borusyak, Hull and Jaravel \(2022\)](#) (BHJ) and assume that the shifters (unrest shocks) are conditionally orthogonal to future recipient countries outcomes, allowing the shares (existing country-prefecture connections) to be endogenous.

Following BHJ's state-of-the-art method, I reshape the data and estimate the IV specification at the prefecture-year level (shock level) rather than country-year level. The second and first stages I estimate in practice are thus:

$$\tilde{Y}_{p,t} = \beta \widehat{\text{aid}}_{p,t-s} + X'_{p,t-1-s} \Gamma + \alpha_p + \delta_{prov,t} + \zeta_p t + \epsilon_{p,t} \quad (7)$$

$$\tilde{\text{aid}}_{p,t} = \gamma \text{unrest}_{p,t-1} + X'_{p,t-1} \Theta + \alpha_p + \delta_{prov,t} + \zeta_p t + \epsilon_{p,t}. \quad (8)$$

The regressions are weighted using the BHJ weights, which account for countries' exposure to the prefecture-year level unrest shocks. Prior to reshaping, the country-level variables are residualized on country fixed effects to account for the fact that some countries generally receive more aid; and on continent-specific year fixed effects to account for regional economic shocks correlated with recipient country outcomes and unrest in China.

Estimating the specification at the prefecture-year level allows me to additionally control for prefecture and province-year fixed effects and other controls, analogous to the analysis in [Section 3](#). The specification thus isolates the variation based on local unrest shocks in Chinese prefectures, which are assumed to be conditionally orthogonal to future outcomes of aid recipient countries. A second advantage of the BHJ method is that it uses correct statistical inference

by allowing for clustering the standard errors at the shock (prefecture) rather than outcome (country) level.<sup>37</sup>

Causal identification of the IV estimates assumes that the instrument affects outcomes of the recipient countries only through the provision of Chinese aid, conditional on the baseline controls. 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 prefectures, for example, due to aid-unrelated trade or FDI. Several robustness and falsification tests in Section 4.6 address this possibility and support the exclusion restriction.

Note that a conceptually different approach to construct an IV for the amount of aid received by a country in a given year would be to interact aggregate shifters of total aid in a year with the cross-sectional probability of a country to receive aid (as in [Nunn and Qian, 2014](#); [Dreher et al., 2021a](#)). In contrast, I hold aggregate variation (such as macroeconomic shocks) constant and exploit variation in the internal re-allocation of Chinese aid projects across prefectures in a given year, resulting in credible identification.<sup>38</sup>

#### ***4.2. Country-level Data and Descriptive Statistics***

Table A.15 in the Online Appendix lists the country-year level variables used in this section and provides descriptive statistics. I describe these variables

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<sup>37</sup> [Adão, Kolesár and Morales \(2019\)](#) note that in the case of shift-share instruments, clustering at the country level may result in incorrect standard errors. 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 countries. [Borusyak, Hull and Jaravel \(2022\)](#) show that estimating the specification at the shock level with standard errors clustered at the shock level addresses this issue.

<sup>38</sup> [Nunn and Qian \(2014\)](#) exploit variation in yearly US wheat production to predict US food aid. [Dreher et al. \(2021a\)](#) exploit changes in China's yearly construction materials production and foreign exchange reserves to predict Chinese aid. This approach relies on the assumption that the aggregate changes only differentially affect more frequent aid recipients through aid. This assumption is particularly strong in the case of [Dreher et al. \(2021a\)](#), who interact aggregate variables that are jointly determined by strategic decisions of the Chinese central government and its SOEs. For example, the Chinese government could decide to increase construction materials production in anticipation of providing more foreign aid to regular aid recipients. Alternatively, country-wide policies may affect both foreign exchange reserves and regular aid recipients through other trade channels (which are presumably affected by foreign exchange rates). In contrast, my approach exploits variation in local unrest driven by local shocks in China that are exogenous to recipients (such as local weather shocks).

here. The sample includes 102 aid-recipient low- and middle-income countries in 2008–2021.<sup>39</sup>

**Outcomes.** I use data from the World Development Indicators ([World Bank, 2022](#)) to measure various recipient outcomes, including GDP and its components (capital formation, consumption, exports and imports). As an additional outcome, I use the unemployment rate of a country in a given year from the ILOSTAT database ([International Labour Organization, 2020](#)).

**Controls.** To construct controls and placebo outcomes, I use data on population, OECD-DAC aid receipt and FDI from the World Development Indicators, as well as Chinese customs data at the country-prefecture-year level to construct the weighted amount of exports in Chinese prefectures connected to a country in a given year.<sup>40</sup>

**Aid.** My preferred measure of Chinese aid is the total number of aid projects, implemented by Chinese firms, received by a country in a given year. I alternatively calculate the total financial value of Chinese aid projects. As explained in Subsection 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 Subsection 3.2 to the country-year level. Each country in the sample on average receives around 1 aid project per year. Ethiopia, Congo and Sri Lanka are the largest recipients of projects implemented by Chinese firms.

#### 4.3. *Country-level Correlates with Chinese Aid*

In Online Appendix Table A.16, I investigate correlations between the amount of aid received and recipient country characteristics that have been said to be associated with Chinese aid (using data from [Dreher et al., 2021a](#)). China

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<sup>39</sup>In the Results Subsection 4.5 below, I estimate effects of aid on outcomes up to six years later and one year prior. I restrict the sample to a balanced sample of prefectures with aid contracts between 2009 and 2015 (i.e., country-level outcomes between 2008 and 2021). I do not use earlier years because the instrument for a given country is by construction missing for all years before the country’s first project in the sample period. I do not use later years because of data availability for the outcome variables.

<sup>40</sup>I construct a variable analogous to weighted unrest, but replacing the number of unrest events with the value of exports in a prefecture.

provides more aid to countries that are poorer, more politically aligned with China, and whose official language is English. However, there is no positive association between Chinese aid and whether a country is a petroleum exporter, less democratic, or has higher sovereign debt. The correlations are inconsistent with access to natural resources and debt traps being primary motives for China’s aid. However, these correlations do not indicate causality.

I now turn to testing for the causal impact of domestic unrest on China’s aid allocation to other countries. The main goal of this paper is to test whether domestic goals are important drivers of China’s aid, in contrast to geo-political goals driving China’s aid exclusively as has been claimed by several prominent outlets. I do not rule out that China’s aid may in part also be determined by geopolitical goals such as shoring up international support for the One-China policy. Like all countries, China pursues multiple policy goals, but there is currently no rigorous causal evidence for any of these motives driving Chinese aid. I advance this research agenda by providing the first evidence for one important motive. Examining other motives in detail would require different data and empirical strategies and is left to future research.

#### ***4.4. Country-level First Stage Estimates***

Figure 5 shows the relationship between lagged unrest in Chinese prefectures and the number of aid projects received by connected countries. Both measures are residualized on country and region-year fixed effects, as well as prefecture and province-year fixed effects and prefecture-specific trends. The slope of the regression line is equivalent to the coefficient  $\hat{\gamma}$  from the first stage Equation (8). Table 8 shows the corresponding coefficients. An increase in the number of unrest events in a prefecture by 10 (1 standard deviation) is associated with approximately one additional aid project received by a country fully exposed to that prefecture. The effect is statistically significant at the 1% level. The Kleibergen-Paap F-statistic is 55.

In other words, a country receives significantly more aid following years during which the Chinese prefectures it is connected to experience more local unrest. A back-of-the-envelope calculation shows that the average number of

yearly unrest events across Chinese prefectures implies a cumulative reallocation of 21% of yearly Chinese aid projects on average.<sup>41</sup> The results imply that China's political need to address domestic unrest drives a significant part of its global aid allocation. This is the second main result.

#### *4.5. Effects of Chinese Aid on Recipients*

Table 9 shows the 2SLS estimates of the causal effect of an additional Chinese aid project on the outcome variable indicated in the column header  $s$  years after commitment, where aid is instrumented by lagged weighted unrest (coefficient  $\hat{\beta}$  in Equation (7)). Online Appendix Tables A.17 and A.18 show the corresponding reduced form and OLS estimates.

Column (1) of Table 9 shows the 2SLS estimates of the effect of Chinese aid on recipient country GDP for various leads and lags. Each row is the coefficient from a separate regression. Figure 6 illustrates the corresponding impulse response function. One additional Chinese aid project on average increases recipient country GDP by 1.16 to 1.45% two to six years after commitment. Reassuringly, future aid at  $t + 1$  is not correlated with GDP at  $t$ , alleviating concerns regarding potential reverse causality and spurious trends.

These estimates imply that the aggregate economic returns to China's aid exceed its cost. They are plausible given that China's projects tend to be sizeable relative to recipient countries' economies and have large potential returns given the infrastructure gap in many developing countries (G20, 2021).<sup>42</sup> The estimates are also consistent with case studies such as Ochieng (2016) and the returns to infrastructure investment found in other contexts (e.g., Gertler et al., 2022). Consistent with large-scale infrastructure construction driving the results, I find sizeable effects on capital formation, as Table 9 Column (3) shows. Column (5) shows a sizeable increase in imports in the first three years,

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<sup>41</sup>There are 192 lagged unrest events across China and 83 aid projects in a year on average during the sample period.  $192 \cdot 0.092/83 \approx 0.21$ .

<sup>42</sup>Consistent with this, in unreported results I find larger economic effects of Chinese aid to countries that have lower levels of existing infrastructure, and that the returns to infrastructure aid are decreasing in the number of existing aid projects.

consistent with delivery of Chinese goods to recipient countries following aid. Column (6) shows an increase in exports, but it is imprecisely estimated.

The level increases do not necessarily translate into persistent growth effects. Column (2) of Table 9 shows that while economic growth temporarily increases two years after commitment, the effect on growth six years after commitments is close to 0 and statistically insignificant.<sup>43</sup> While there is a short-term decrease in the unemployment rate in the recipient population (column (7)), I detect no significant effects on employment or consumption (column (4)) six years after commitment. In sum, the results show that China’s goal to secure domestic political stability does not undermine the short-term benefits of its aid to recipients. However, it is not evident from these results that the effects are sustainable or benefit recipient populations in the long run.

The analysis in this section illustrates that China’s domestic goals significantly influence the allocation of its aid to other countries, and that this variation can be exploited to obtain credible estimates of the impacts of Chinese aid on recipients. I leave detailed investigations of impacts of Chinese aid on other outcomes and underlying channels to future research.

#### ***4.6. Robustness and Falsification Tests***

**Leads and lags of unrest.** Figure 4 and Table A.19 in the Online Appendix show the first stage coefficients for different leads and lags of the instrument. Reassuringly, the instrument is a strong predictor of aid one year later, but not two or three years later. This is important for estimating the dynamic effects of aid on recipient outcomes (if aid at  $t$  were a function of the instrument not only at  $t - 1$  but also  $t - 2$ , the effects of future outcomes could come not only from aid at  $t$  but also at  $t - 1$ ). Moreover, aid at  $t$  does not predict future unrest, mitigating concerns related to reverse causality or spurious trends.

**Falsification tests.** The exclusion restriction would be violated if unrest in a prefecture predicted not only more aid flowing to countries more connected to the prefecture, but also other financial flows. To address this possibility, Online Appendix Table A.20 presents the results of falsification tests for the first stage.

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<sup>43</sup>I calculate growth rates as first differences of the logarithm of the outcome variables.

In columns (1) to (3), I regress (aid-unrelated) imports from China, FDI inflow, and OECD-DAC aid received by a country on the instrument. Reassuringly, lagged weighted unrest does not predict these variables. Column (4) replicates the baseline first stage but controls for lagged country-prefecture specific trade (weighted by the country-prefecture connections analogous to the instrument). The coefficient on this placebo instrument is close to 0 and goes against the possibility that the results are driven by prefecture-specific trade shocks. These results provide support for the validity of the exclusion restriction.

**Excluding outliers.** Online Appendix Figure A.9 is a residual plot of the first stage. It demonstrates that no particular prefecture or year is driving the results. However, Zibo prefecture in 2010 and Ganzhou prefecture in 2012 appear to be outliers. Online Appendix Figure A.10 shows that the first stage is unaffected by dropping these observations.

## 5. Conclusion

Foreign aid is one of the most important policy tools with which countries can transfer resources to poorer countries. Yet, what drives aid and whether it benefits not only recipients but also donors themselves remain highly debated questions. In particular, we have surprisingly little empirical evidence on the political processes and donor motives that influence aid allocation. China's recent rise as the largest provider of bilateral development finance has fueled new debates and much speculation, but little rigorous evidence on the actual goals of its aid. This paper makes progress on these questions by using novel micro data to dive deep into the processes underlying China's aid allocation.

I show that a significant fraction of China's foreign aid is driven by the Chinese government's political need to secure domestic stability. The evidence goes against the priors of many journalists, scholars and policymakers who believe that China's aid is driven exclusively by geopolitical goals. This paper thus connects the fields of domestic political economy and international development, which have been studied largely separately in the economics literature.

Exploiting the resulting variation in a novel instrument, I find that the Chinese government's political goals do not necessarily go against the recipients'

interests, who benefit from Chinese aid at least in the short term. This is important for policymakers and implies that foreign aid allocated according to the domestic needs of the donor country need not have mainly deleterious effects on recipients as previously suggested by several influential studies.

However, the economic short-term benefits of Chinese aid should be weighed against potential unaccounted costs, such as conflict, environmental degradation, and sovereign debt. The average effects may mask substantial heterogeneity in who benefits and loses from Chinese aid, and it is important to understand the underlying channels. 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 are unlikely to be optimally allocated to foster long-term growth. However, it is possible that the returns from infrastructure construction will appear once the data allows us to study the impacts of China's aid over longer time horizons.

These are all important questions for future research. 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 pressing research agenda.

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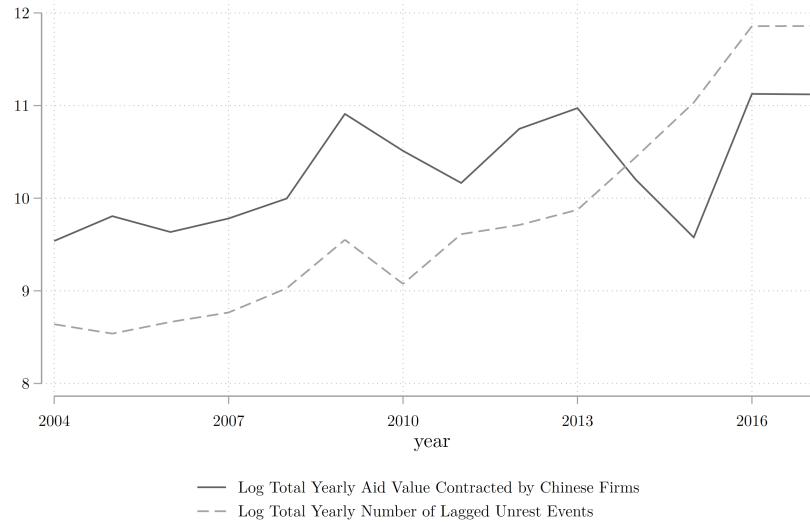
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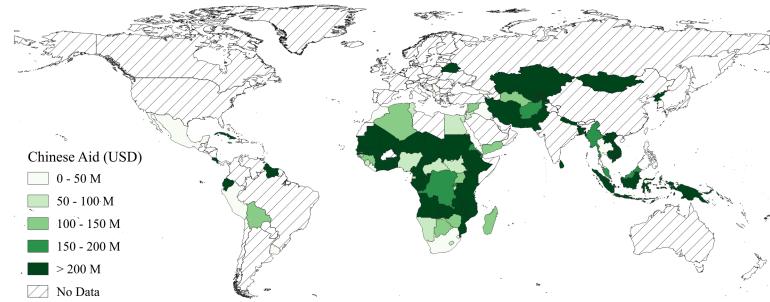
## Figures and Tables

Figure 1: Chinese Aid and Unrest Over Time



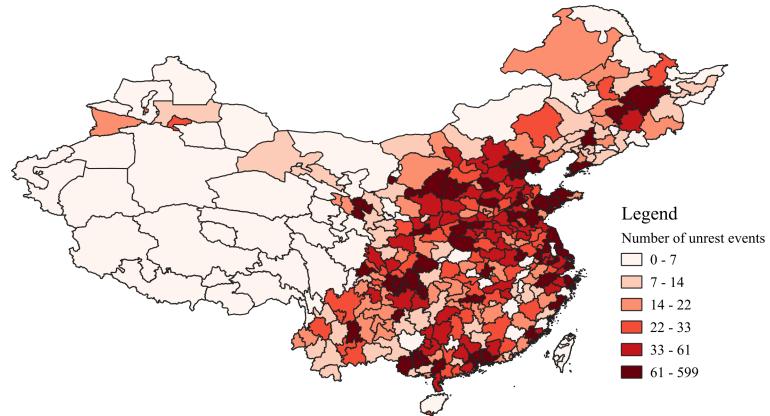
*Note:* The solid line shows the logarithm of the total financial value of Chinese foreign aid projects (in 100k constant 2017 USD) contracted by Chinese firms in the baseline estimation sample in each year. The dashed line shows the logarithm of the total number of labor unrest events in China in the baseline estimation sample in each year, lagged by one year. See Subsection 3.2 for a detailed description of the underlying data.

Figure 2: Global Distribution of Chinese Aid Contracted by Chinese Firms



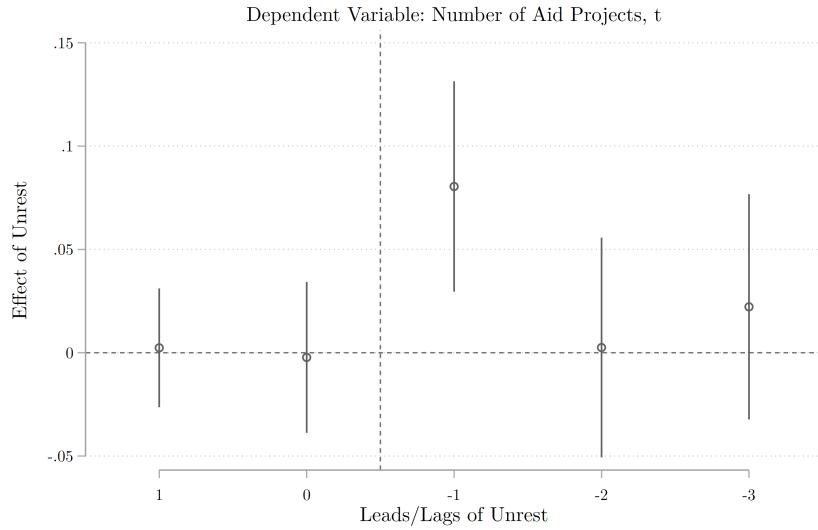
*Note:* This figure shows the total financial value of Chinese foreign aid projects committed to low- and middle-income countries and contracted by Chinese firms in the baseline estimation sample during 2004 and 2017. Financial amounts are in constant 2017 USD. Source: author's illustration based on data described in Subsections 3.2 and 4.2.

Figure 3: Distribution of Unrest Events Across China



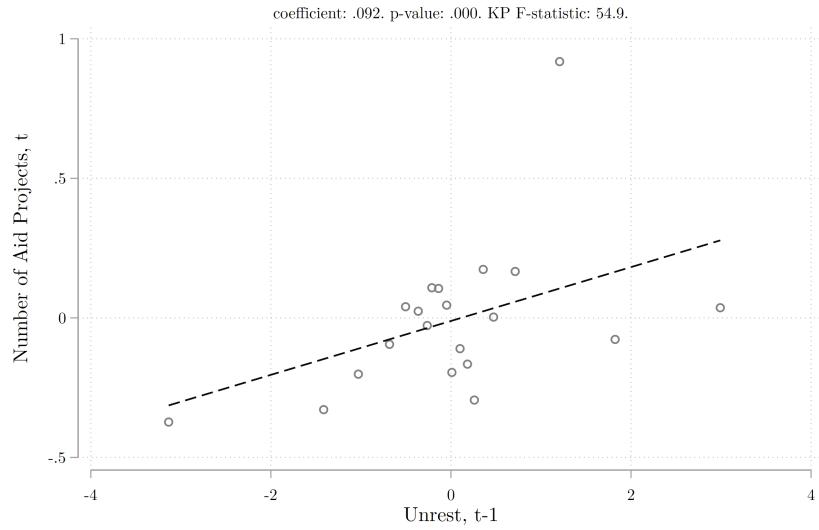
*Note:* This map shows the number of labor unrest events in each Chinese prefecture in 2003–2019. Source: author's illustration based on data from the China Strikes Crowdmap and China Labour Bulletin. See Subsection 3.2 for a detailed description of the underlying data. The map contains territories claimed by China in 2023 but only data for Mainland China is available and included.

Figure 4: Country-level First Stage Coefficients, Leads and Lags



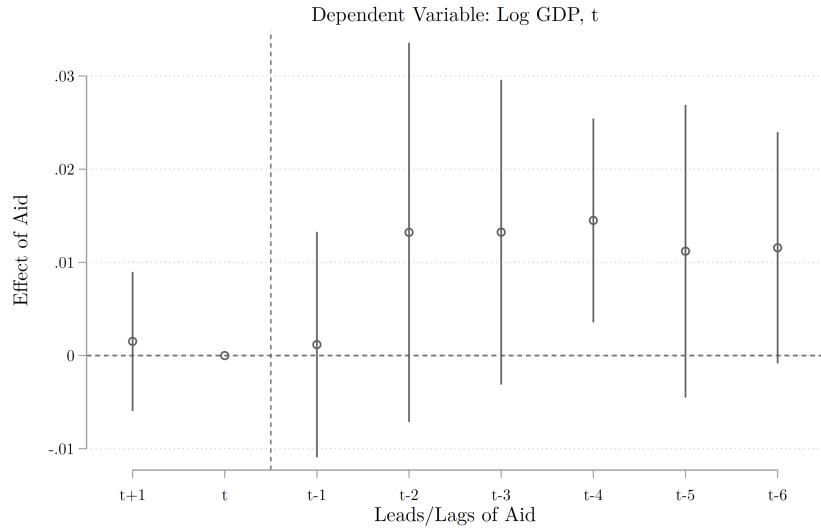
*Note:* The dots show the coefficients from a regression of the number of Chinese foreign aid projects received by countries in year  $t$  on unrest shocks in Chinese prefectures in the years indicated on the x-axis. The regression is estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to  $t-2$ . Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regression controls for prefecture and province-year fixed effects and prefecture-specific linear time trends. The vertical bars indicate 95% confidence intervals. Standard errors are clustered at the prefecture level. See Subsection 4.2 for a description of the underlying data.

Figure 5: Country-level First Stage Binscatter Plot



*Note:* The dashed line shows the line of fit from a regression of the number of Chinese foreign aid projects received by countries in year  $t$  on unrest shocks in Chinese prefectures in year  $t - 1$ . The regression is estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to  $t-2$ . Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regression controls for prefecture and province-year fixed effects and prefecture-specific linear time trends. The dots show mean residuals. See Subsection 4.2 for a description of the underlying data.

Figure 6: Effect of Chinese Aid on GDP in Recipient Countries (IV)



*Note:* Each dot shows the coefficient estimate of a separate IV regression of recipient country log GDP at  $t$  on the number of Chinese foreign aid projects received by the country in the year indicated on the x-axis, where the number of aid projects is instrumented by weighted unrest shocks in Chinese prefectures lagged by one year. The regression is estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to two years prior. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends, as well as recipient population and the outcome variable in the base period. The vertical bars indicate 95% confidence intervals. Standard errors are clustered at the prefecture level. See Subsection 4.2 for a description of the underlying data.

Table 1: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms

	(1)	(2)	(3)	(4)	(5)
	# of Contracts	# of Contracts	# of Contracts	# of Contracts	# of Contracts
Unrest, t-1	0.0166** (0.00746)	0.0184*** (0.00695)	0.0191** (0.00814)	0.0206*** (0.00780)	0.0210** (0.00823)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	3126	3126	3126	3126	3126
Adjusted R Squared	0.627	0.660	0.627	0.657	0.657
Dependent Variable Mean	0.234	0.234	0.234	0.234	0.234
Dependent Variable SD	0.898	0.898	0.898	0.898	0.898
Unrest Mean	2.210	2.210	2.210	2.210	2.210
Unrest SD	6.455	6.455	6.455	6.455	6.455

Note: This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table 2: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Contract Value

	(1) Log Value of Aid Contracts	(2) Log Value of Aid Contracts	(3) Log Value of Aid Contracts	(4) Log Value of Aid Contracts	(5) Log Value of Aid Contracts
Unrest, t-1	0.0139** (0.00544)	0.0115* (0.00607)	0.0181*** (0.00614)	0.0158** (0.00640)	0.0170** (0.00671)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	3126	3126	3126	3126	3126
Adjusted R Squared	0.559	0.571	0.564	0.572	0.573
Dependent Variable Mean	0.311	0.311	0.311	0.311	0.311
Dependent Variable SD	1.102	1.102	1.102	1.102	1.102
Unrest Mean	2.210	2.210	2.210	2.210	2.210
Unrest SD	6.455	6.455	6.455	6.455	6.455

Note: This table reports the coefficients of regressions of the log of total financial value of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data. Financial values are in constant 2017 USD.

Table 3: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms,  
Robustness to LASSO IV

	(1)	(2)	(3)	(4)
	# of Contracts	# of Contracts	Log Value of Aid Contracts	Log Value of Aid Contracts
Unrest, t-1	0.0261** (0.0118)	0.0388* (0.0208)	0.0109** (0.00507)	0.0239* (0.0144)
Prefecture and Year FEs	Yes	Yes	Yes	Yes
Observations	3290	3290	3290	3290
Dependent Variable Mean	0.361	0.361	0.369	0.369
Dependent Variable SD	1.867	1.867	1.230	1.230
Unrest Mean	2.337	2.337	2.337	2.337
Unrest SD	6.835	6.835	6.835	6.835
Method	OLS	LASSO IV	OLS	LASSO IV

*Note:* This table reports the coefficients of regressions of the number or log financial value of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. In columns (1) and (3), the regressions are estimated using OLS. In columns (2) and (4), lagged unrest is instrumented with instrumental variables based on local weather conditions selected by LASSO following [Beraja et al. \(2023\)](#). The candidate instruments include weather variables interacted with themselves and an indicator for whether an unrest event occurred elsewhere in China on the day, aggregated to the year level. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data. Financial values are in constant 2017 USD.

Table 4: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, by Type of Firm

	(1) # of Contracts	(2) # of Contracts	(3) # of Contracts	(4) # of Contracts	(5) # of Contracts
Unrest, t-1	0.00119 (0.00166)	0.00175 (0.00205)	0.00225 (0.00156)	0.00314 (0.00236)	0.00325 (0.00236)
Unrest, t-1*Central SOE	0.0199* (0.0120)	0.0147** (0.00664)	0.0209* (0.0118)	0.0151** (0.00674)	0.0150** (0.00678)
Unrest, t-1*Local SOE	0.000554 (0.00257)	-0.000929 (0.00266)	-0.000868 (0.00214)	-0.00248 (0.00277)	-0.00249 (0.00277)
Prefecture-Type and Year-Type FE	Yes	Yes	Yes	Yes	Yes
Prefecture-Type-Specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year-Type FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	5877	5877	5877	5877	5877
Adjusted R Squared	0.507	0.566	0.505	0.561	0.560
Dependent Variable Mean	0.103	0.103	0.103	0.103	0.103
Dependent Variable SD	0.509	0.509	0.509	0.509	0.509
Unrest Mean	2.665	2.665	2.665	2.665	2.665
Unrest SD	7.491	7.491	7.491	7.491	7.491

Note: This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to firms of a given type (central SOE, local SOE, other) in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, as well as its interaction with a central SOE and a local SOE dummy, controlling for the fixed effects and controls indicated in the table. The uninteracted dummies are accounted for by the fixed effects. The unit of observation is a prefecture-firm type-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table 5: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms,  
Heterogeneity by Prefecture Characteristics

	(1) # of Contracts	(2) # of Contracts	(3) # of Contracts	(4) # of Contracts
Unrest, t-1	-0.00731 (0.0116)	0.00635 (0.0171)	0.0277* (0.0159)	0.0176 (0.0116)
Unrest, t-1*Public Expenditure to GDP Ratio, t-2	0.227** (0.101)			
Public Expenditure to GDP Ratio, t-2	0.530 (0.721)			
Unrest, t-1*GDP Growth, t-2		0.00129 (0.00163)		
GDP Growth, t-2		-0.00116 (0.00608)		
Unrest, t-1*Mayor above 56, t-1			-0.000400 (0.0157)	
Mayor above 56, t-1			0.00818 (0.0861)	
Unrest, t-1*Party Secretary above 56, t-1				0.0127 (0.0134)
Party Secretary above 56, t-1				-0.0817 (0.0745)
Prefecture and Year FE	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	Yes	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes	Yes
Prefecture-level Controls	Yes	Yes	Yes	Yes
Observations	2973	2973	1290	1290
Adjusted R Squared	0.652	0.649	0.699	0.701
Dependent Variable Mean	0.230	0.230	0.249	0.249
Dependent Variable SD	0.881	0.881	0.972	0.972
Unrest Mean	2.077	2.077	4.288	4.288
Unrest SD	5.521	5.521	7.670	7.670

Note: This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, as well as its interaction with the prefecture-year level variables indicated in the table, controlling for the fixed effects and controls indicated in the table. The regression in column (1) additionally controls for uninteracted local public expenditure and local GDP lagged by two years (coefficients not reported). Public expenditure, GDP, the public expenditure to GDP ratio, and GDP growth are trimmed at the 1% and 99% level. Data on mayors and party secretaries is only available for 2013–2017. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table 6: Effect of Local Unrest on Employment in Chinese Firms

	(1) Log Employment (Central SOE with Aid Contract)	(2) Log Employment (Central SOE without Aid Contract)	(3) Log Employment (Other Firms with Aid Contract)	(4) Log Employment (Other Firms without Aid Contract)
Unrest, t-1	0.0410*** (0.00710)	-0.00332 (0.00392)	-0.0225 (0.0730)	-0.00133 (0.00427)
Firm and Year FE	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	Yes	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes	Yes
Prefecture-level Controls	Yes	Yes	Yes	Yes
Observations	217	2564	266	6770
Adjusted R Squared	0.767	0.838	0.615	0.743
Dependent Variable Mean	2676.9	1695.8	1403.0	1139.4
Dependent Variable SD	2950.3	3075.7	3074.9	2760.4
Unrest Mean	5.018	4.703	2.989	3.773
Unrest SD	5.428	9.570	8.042	10.15

Note: This table reports the coefficients of regressions of the log number of workers employed by a Chinese firm in a year on the lagged number of labor unrest events in the firm's prefecture and year, controlling for the fixed effects and controls indicated in the table. Column (1) includes central SOEs that had an aid contract during the sample period, (2) includes central SOEs that did not have an aid contract during the sample period, (3) includes other firms that had an aid contract during the sample period, and (4) includes other firms that did not have an aid contract during the sample period. The unit of observation is a firm-year. Standard errors are clustered at the prefecture level and reported in parentheses. The firm-level data on employment is from the 2007-2015 tax survey and available for a subsample of firms in the main sample. See Subsection 3.2 for a description of the data.

Table 7: Effect of Conducive Weather on Local Unrest

	(1)	(2)	(3)	(4)	(5)
	Unrest, t-1	Unrest, t-1	Unrest, t-1	Unrest, t-1	Unrest, t-1
Conducive Weather, t-1	0.265*** (0.0436)	0.277*** (0.0540)	0.246*** (0.0475)	0.279*** (0.0620)	0.282*** (0.0576)
Aid Stock, t-2	-0.0236 (0.0159)	-0.0441** (0.0208)	-0.0339** (0.0169)	-0.0527** (0.0210)	-0.0531** (0.0214)
Conducive Weather, t-1*Aid Stock, t-2	-0.0553** (0.0229)	-0.0391*** (0.0131)	-0.0658*** (0.0231)	-0.0428*** (0.0130)	-0.0430*** (0.0125)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	2648	2648	2648	2648	2648
Adjusted R Squared	0.607	0.786	0.636	0.802	0.802
Dependent Variable Mean	0	0	0	0	0
Dependent Variable SD	1	1	1	1	1
Conducive Weather Mean	0	0	0	0	0
Conducive Weather SD	1	1	1	1	1

*Note:* This table reports the coefficients of regressions of the number of lagged unrest events in a prefecture and year on lagged conducive weather in the prefecture and year, as well as its interaction with the existing stock of aid project contracts allocated to firms in the prefecture up to two years prior, controlling for the fixed effects and controls indicated in the table. Conducive weather is the predicted number of unrest events from the LASSO specification discussed in the text, partialing out prefecture and year fixed effects (following [Beraja et al., 2023](#)). Aid stock is calculated as the number of aid contracts allocated to firms in a prefecture up to t-2 after partialing out prefecture and year fixed effects. All variables are standardized to have mean of 0 and standard deviation of 1 to facilitate interpretation. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table 8: Country-level First Stage Coefficients

	(1)	(2)
	# of Aid Projects	Log Value of Aid Projects
Unrest, t-1	0.0921*** (0.0124)	0.538*** (0.111)
Prefecture and Year FEs	Yes	Yes
Prefecture-specific Linear Time Trends	Yes	Yes
Province-Year FEs	Yes	Yes
Residualized on Country and Continent-Year FEs	Yes	Yes
F-statistics	54.90	23.65
Observations	168	168
Dependent Variable Mean	-0.00497	-0.0594
Dependent Variable SD	0.742	4.210
Unrest Mean	3.899	3.899
Unrest SD	9.976	9.976

*Note:* This table reports the coefficients of regressions of the number or financial value of foreign aid projects received by countries in year  $t$  on unrest shocks in Chinese prefectures in year  $t - 1$ . The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to  $t-2$ . Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.

Table 9: Effects of Chinese Foreign Aid on Recipient Countries, IV Estimates

	(1) Log GDP	(2) GDP Growth	(3) Log Capital Formation	(4) Log Total Consumption	(5) Log Imports	(6) Log Exports	(7) Unemployment Rate
# of Aid Projects, t-6	0.0116* (0.00600)	0.000848 (0.0102)	0.0600* (0.0319)	0.00307 (0.0107)	0.00426 (0.0215)	0.0228 (0.0443)	0.0455 (0.0941)
# of Aid Projects, t-5	0.0112 (0.00759)	-0.00423 (0.00591)	0.0680 (0.0416)	0.0155 (0.0117)	-0.0103 (0.0179)	0.0301 (0.0373)	0.0302 (0.0766)
# of Aid Projects, t-4	0.0145** (0.00529)	0.000375 (0.00831)	0.0621 (0.0500)	0.00482 (0.00536)	0.0132 (0.0158)	0.0147 (0.0362)	-0.260*** (0.0562)
# of Aid Projects, t-3	0.0132 (0.00790)	-0.000532 (0.00376)	0.105*** (0.0336)	0.00641 (0.0125)	0.0669*** (0.0216)	0.0514 (0.0318)	-0.0642 (0.0889)
# of Aid Projects, t-2	0.0132 (0.00983)	0.0131* (0.00715)	0.00468 (0.0291)	0.0214 (0.0128)	0.0285** (0.0116)	0.0291 (0.0177)	-0.148 (0.0900)
# of Aid Projects, t-1	0.00118 (0.00585)	0.00354 (0.00671)	0.0606* (0.0291)	-0.0117* (0.00596)	0.0428*** (0.0117)	0.00377 (0.0265)	-0.0182 (0.0516)
# of Aid Projects, t	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)
# of Aid Projects, t+1	0.00152 (0.00361)	-0.00181 (0.00953)	-0.0495 (0.0318)	-0.0143 (0.0158)	-0.00659 (0.0239)	-0.0201 (0.0150)	-0.142 (0.124)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Res. on Country and Region-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	168	168	134	155	156	156	168
Dependent Variable Mean	0.00174	-0.00175	-0.0120	-0.000806	-0.0205	-0.0138	-0.000452
Dependent Variable SD	0.0567	0.0309	0.276	0.0417	0.350	0.466	0.532
Aid Mean	0.257	0.257	0.0177	0.149	0.162	0.162	0.315
Aid SD	2.218	2.218	1.820	2.165	2.159	2.159	2.199

Note: This table reports the coefficients of separate IV regressions of the outcomes of countries indicated in the column headers at  $t$  on the number of Chinese foreign aid projects received by the countries in the years indicated in the table, where the number of aid projects is instrumented by weighted unrest shocks in Chinese prefectures lagged by one year. The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to the year prior to the unrest shocks. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends, as well as recipient population and the outcome variable in the base period. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.

# ONLINE APPENDIX (not for publication)

## Appendix A. Additional Background

### A.1. Definitions and Types of Foreign Aid

This paper uses the term *foreign aid* to include any bilateral official finance between government entities of China and other low- and middle-income countries for development purposes (in line with other scholars such as [Copper, 2016](#)). This definition does not include FDI (equity), international trade, or loans for projects with purely commercial or representative character.

Aid can be categorized into two categories: ODA (Official Development Assistance) and OOF (Other Official Finance). The former is concessional and meets the conventional notion of Western foreign aid (including grants and concessional loans). The latter is less concessional (e.g., loans at commercial rates). Note that a significant fraction of Western foreign aid is also in the form of loans. 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, 2011a](#)). Most of the aid projects in the sample of this paper are ODA-like as classified by AidData.

Table A.2 gives an overview of the different types of aid extended by Chinese government entities. Only the Ministry of Commerce (MOFCOM) is authorized to provide grants and interest-free loans, and only the China Export-Import Bank (CEXIM) extends concessional loans (i.e., loans at an interest rate below a competitive international rate such as the LIBOR). The third important player is the China Development Bank (CDB), which finances mostly commercial projects. Hence, most aid projects in the sample of this paper are financed by MOFCOM or CEXIM.

### A.2. Chinese Government Entities and the Aid Allocation Process

Figure A.1 provides a stylized overview of the most important Chinese government entities involved in China's foreign aid. The most important providers apart from the Chinese Ministry of Commerce are the central government's

two main policy banks: the China Export-Import Bank (CEXIM), and the China Development Bank (CDB). They are supervised by the State Council, the chief administrative authority of the People’s Republic of China (i.e., the central government). The 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](#)).<sup>44</sup>

CEXIM issues concessional loans (see Table A.2). 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.

The large state-owned commercial banks have also started extending overseas finance to developing countries, even though on a much smaller scale than the policy banks. They include the Bank of China, the Agricultural Bank of China, the Industrial and Commercial Bank of China, and the China Construction Bank. Finally, some other central state-owned enterprises extend financing to developing countries. However, their share of overall Chinese aid was small before 2017 and I exclude them from my analysis.

### **A.3. Labor Unrest in China**

Despite the autocratic nature of China’s regime, labor unrest (including collective worker action such as strikes) is common in China. [Lorentzen et al. \(2013\)](#) and others argue that the central government is primarily concerned about preserving political stability but not local strikes per se, insofar as they do not develop into larger, organized movements. Rather, local strikes serve as a signal to the central government for where it needs to allocate public resources to prevent local grievances from growing into broader organized movements that could threaten political stability. Furthermore, in contrast to firms and local governments, the central government has welcomed a certain degree of upward pressure on wages since the 2000s to support the re-balancing of the Chinese

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<sup>44</sup>Note that the political process described here corresponds to the period studied in this paper (2004 to 2017). The aid allocation process has changed in some aspects with the creation of China’s International Development Cooperation Agency (CIDCA) in 2018.

economy from an investment- to a consumption-led growth model ([Zhang, 2019](#)). As a consequence, the central government has mostly tolerated local labor unrest and reporting on them during the period I study.

Whereas in the 1990s unrest was mainly caused by the restructuring of SOEs, since the 2000s it has shifted to the private sector ([Elfstrom and Kuruvilla, 2014](#)). The main reasons for labor unrest include local issues such as factory closures and relocations, withholding of wages, and runaway bosses, and environmental and safety violations ([Li, Friedman and Ren, 2016](#)). The root causes for an increase in labor unrest since 2004 include several domestic factors. First, rising inequality and the re-balancing of the Chinese economy have fueled worker demands. At the same time, a growing migrant labor shortage in the low-skill sector due to China's birth control policy, rising education levels and the Hukou system have increased workers' bargaining position ([Friedman and Kuruvilla, 2015](#)). Second, the Chinese government has adopted various changes to its labor laws since 2008, which empowered workers to increasingly voice their demands ([Gallagher, 2012](#)). Local NGO engagement and domestic policy changes in agriculture have also contributed to unrest ([Friedman and Kuruvilla, 2015](#)). Finally, negative export shocks from developed countries have been shown to trigger some unrest ([Campante, Chor and Li, 2023](#)).

Responses by the Chinese state to local unrest have included repression, wage concessions, welfare payments, legal reform, stimulus through domestic public infrastructure construction ([Cong et al., 2019](#)), SOE employment ([Wen, 2023](#)), and increasing foreign aid to create demand for Chinese firms and workers ([Copper, 2016](#)). See [Li, Friedman and Ren \(2016\)](#) for in-depth case studies of labor unrest events in China. Subsection 3.2 and Online Appendix B.4 provide details on the unrest data used in this paper. Online Appendix Table A.3 provides examples of unrest events in the data.

## Appendix B. Data Appendix

In Section 3, the main dataset is a prefecture-year level panel dataset based on administrative data on Chinese firms and prefectures, unofficial data on Chinese aid projects, and data on unrest in China. This section provides additional

details on these datasets. In Section 4, the main dataset is a country-year level panel dataset based on outcome variables from the World Development Indicators ([World Bank, 2022](#)) and data from the prefecture-year panel aggregated to the country-year level as described in the main text.

### ***B.1. Aid Project Data***

Since the Chinese government does not provide disaggregated data on its foreign aid, I use AidData’s Geocoded Global Chinese Official Finance Database, Version 2.0 database ([Tierney et al., 2011](#)) to construct a project-level dataset on Chinese aid projects. AidData 2.0 is the most comprehensive and widely used public database on Chinese aid projects in 2000–2017. AidData systematically collects data on Chinese aid projects by scraping tens of thousands government reports, news articles, policy documents and other sources. Details on the scope and methodology of the data can be found at [china.aiddata.org](http://china.aiddata.org) and in [AidData Research and Evaluation Unit \(2017\)](#).

I include all projects from the database that are financed by a Chinese government agency or bank, involve a Chinese private or state-owned contractor, are in a low- or middle-income country, have a development purpose (as opposed to commercial or representational), have not been cancelled or suspended, and are recommended by AidData for research. The data include the year of commitment, financial value, recipient country, type of finance, sector, funding agency, and a short description for each project.

I identify 2097 project-firm combinations in the original AidData 2.0 dataset that fit these criteria. During the matching process described in Subsection B.2 below, I drop project-firm combinations that I find to be implemented by firms not located in China, that are not implemented by firms related to construction, or that cannot be linked with a local subsidiary-level firm in the Chinese administrative records described below.

The resulting dataset includes 1347 projects in 102 countries committed between 2000 and 2017. The average project is worth 48 million USD (in constant 2017 USD). Most of the projects are classified as ODA-like (89%) and include grants, concessional loans, or other financing. The largest share of aid goes

to Africa (50%) and Asia (35%), with the remaining projects going to the Middle East (6%), North and South America (4%), and Oceania (3%). Most aid projects implemented by Chinese construction firms are in the form of hard infrastructure, including power plants, transmission lines, railroads, highways, ports, telecommunication networks, schools, and hospitals. Online Appendix Table A.1 lists the largest projects in the sample.

### ***B.2. Panel of Aid Contractors***

While AidData 2.0 provides the names of involved Chinese firms, the listed firms are often conglomerates or holding companies with multiple subsidiaries across China. This has so far prevented researchers from linking data on Chinese aid projects to administrative firm data and from conducting analysis at the firm or prefecture level. To address this challenge, for each aid project, I systematically identify the local subsidiary in China that implemented the project using administrative data from China. I describe the process below.

The starting point of the firm-year panel is a list of all potential Chinese infrastructure aid contractors from the Chinese Ministry of Commerce (MOFCOM). It contains both the English and Chinese names of all Chinese firms licensed by MOFCOM to bid on overseas aid construction projects as of 2017. The list was extracted from the MOFCOM website <http://xzsx.mofcom.gov.cn:80/xzsp/advSearch.jhtml> in June 2020. I minimally clean the data by removing duplicate entries and entries that do not constitute firm names. Importantly, the list is at the level of local subsidiaries rather than conglomerates.

I next obtain data on basic characteristics of these firms, including location, ownership, and shareholders from the Chinese credit registry. The data are provided by Liu et al. (2022), who scraped the data from the public *Tianyancha* website. *Tianyancha* is a private company that collects business registration information for the universe of Chinese firms in the last four decades.<sup>45</sup> More than 95% of all firms can be matched based on firm name. The resulting list includes 4544 firms eligible to bid on Chinese aid projects.

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<sup>45</sup>I thank Shaoda Wang and Wenwei Peng for access and assistance with the data.

I then assign the projects from the AidData 2.0 database to a contractor in the MOFCOM database. I proceed as follows. First, I use the business registration data to identify all current and past parent companies of all firms in the MOFCOM list.<sup>46</sup> Second, I manually match the firms in the AidData database with the list of MOFCOM firms and their parent companies. I use a combination of fuzzy matching based on names and additional sources such as company websites (all sources are documented in the replication package). Third, for matched aid projects that are implemented by parent companies (i.e., have subsidiaries in the MOFCOM list), I do additional research to determine the subsidiary that implemented the project. Together with a team of research assistants, I systematically search the websites of all subsidiaries in the MOFCOM list of firms and other online sources to identify the implementing subsidiaries. In addition, I manually verify all projects implemented by firms in Beijing and large conglomerates.<sup>47</sup> All details and sources are documented in the replication package. Finally, as mentioned in the previous subsection, I exclude from the sample all aid projects that are not implemented by a construction-related company (such as medical and IT companies), are based outside of China, or can otherwise not be linked to a firm in the MOFCOM list.

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 measurement error than the financial value. Information on the financial value is missing for 16% 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.

### ***B.3. Firm-level Data***

I complement the aid contractor panel with several administrative datasets.

**Tax survey.** I complement my firm panel with data from the *National Tax Survey Database* (NTSD) from 2007 to 2015. The dataset contains information

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<sup>46</sup>I define a parent company as a shareholder with at least 50% ownership.

<sup>47</sup>Firms in Beijing are often corporate headquarters and not where the inputs for aid projects are produced. They are thus unlikely to be the aid contractors themselves.

on firms' financials, tax payments, employment, and other variables. 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 information on Chinese firms' financial values and other variables such as employment, covers all sectors, and covers firms of all sizes.<sup>48</sup>

Following [Liu and Mao \(2019\)](#), I set as missing entries with non-positive values in the main variables used in the working sample (number of employees and operating income) and trim the top 1% and bottom 1% percentiles of all entries in the data. I link the NTSD data with my main sample using a combination of numerical firm identifiers from the business registration data, firm names, and home prefectures. The resulting sample contains data on firm employment from the tax survey for 2835 firms. This is a subsample of all firms because not all firms are included in the survey.

**Domestic procurement.** The data on Chinese domestic government procurement used in Online Appendix Table [A.13](#) is scraped from the Chinese Government Procurement website <https://www.ccgp.gov.cn/>. It contains text on all successful bids from 2013 to 2017. I assign a procurement contract to a firm in my sample if its name appears in the project description. I trim the value of procurement contracts at the top 1% and bottom 1% percentiles to deal with implausible data entries.

**Annual reports.** The data on word counts in annual reports of Chinese listed firms used in Figure [A.8](#) is from [Mueller, Wen and Wu \(2023\)](#).

The resulting panel includes 4544 firms, of which 1182 are central SOEs.<sup>49</sup>

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<sup>48</sup>The other firm-level dataset commonly used by economists is the Annual Survey of Industrial Firms conducted by the National Bureau of Statistics of China. In contrast to the NTSD, ASIF contains only large firms in the manufacturing sector and suffers from reporting bias ([Brandt, Van Bieseboeck and Zhang, 2014](#)).

<sup>49</sup>Other firms include private firms and (former) local SOEs. I exclude joint ventures, collective firms and foreign firms, which constitute only a small fraction of aid contractors.

313 firms supply Chinese aid projects at least once during my sample period, of which 161 are central SOEs. Table A.4 in the Online Appendix provides firm-level descriptive statistics. The average firm is awarded 0.01 aid contracts worth 0.52 million USD per year (0.26 projects worth 9.17 million USD conditional on getting a contract during the sample period), has 1387 employees, and 251 million USD in operating income (constant 2017 USD). The 4544 firms are located in 235 different prefectures across China. Figures A.3 and A.4 show the spatial distribution of Chinese aid contractors across China.

#### B.4. *Prefecture-level Data*

**Unrest.** I combine data on labor unrest in China from two sources, the *China Strikes Crowdmap* for 2003 to 2011 (<https://chinastrikes.crowdmap.com/feeds?page=1762&l=ps&l=fa>) and the *China Labour Bulletin* for 2012 to 2019 (<https://clb.org.hk/>).<sup>50</sup> See Campante, Chor and Li (2023) 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., 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.

**China City Statistical Yearbooks.** I use data on several prefecture-year level outcome and control variables from the China City Statistical Yearbooks, including GDP, GDP growth, population, and local government expenditures and income. The China City Statistical Yearbooks data are based on official statistics by the Chinese government. Since the data includes some obvious data entry errors, I manually remove implausible values from the data following standard practice in the literature. I then trim all variables at the top 1% and bottom 1% percentiles.

**Weather.** The weather data used to construct the LASSO-IV in Table 3 comes from the National Oceanic and Atmospheric Administration (NOAA)

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<sup>50</sup>I thank Manfred Elstrom for providing the *China Strikes* data. CLB is an NGO based in Hong Kong. The CLB data generally follow the same scope and method as *China Strikes*.

and was originally collected by the World Meteorological Organization (WMO). The data is originally reported at the weather station–day level. I calculate a prefecture-day panel by assigning each weather station to the nearest prefecture in my sample. I use the same 18 variables as [Beraja et al. \(2023\)](#), including temperature bins, precipitation, fog, rain, hail, thunder, maximum wind speed, visibility, etc. Following [Beraja et al. \(2023\)](#), I impute missing weather data from the nearest weather station or the following day of the same station (less than 1% of observations).

**Local officials.** The data on the age of mayors and party secretaries in China used in Table 5 is from [Mueller, Wen and Wu \(2023\)](#).

**Chinese exports.** The Chinese Customs Trade Statistics (CCTS) by the Chinese Customs Office provide transaction-level information on Chinese exports and imports during 2003 to 2015 (see [Campante, Chor and Li \(2023\)](#)). I aggregate the data to calculate the total export quantity and value at the Chinese prefecture-destination country-year level for the analysis in Table A.21.

The resulting panel includes 235 prefectures. Table A.5 in the Online Appendix provides prefecture-level descriptive statistics. The average prefecture is awarded 0.23 aid contracts worth 8.25 million USD per year (0.93 projects worth 32.89 million USD conditional on getting a contract during the sample period) and has 2.51 labor unrest events per year.

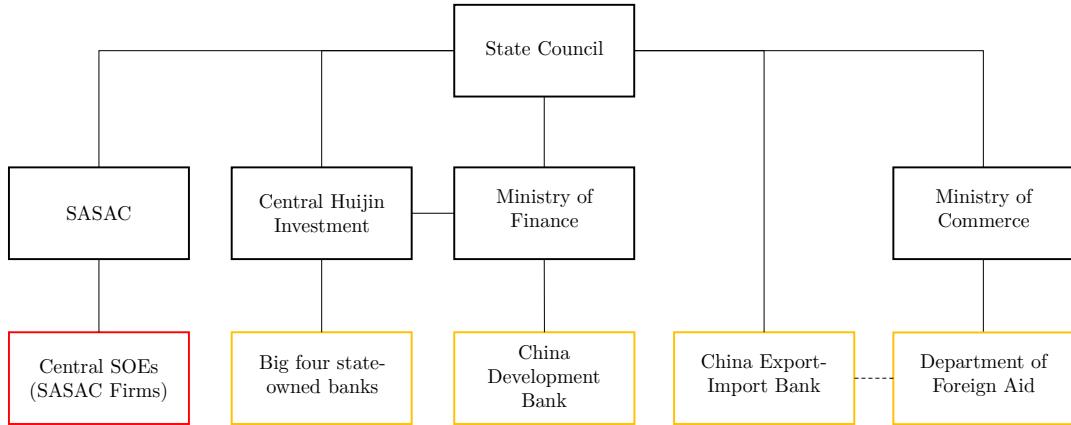
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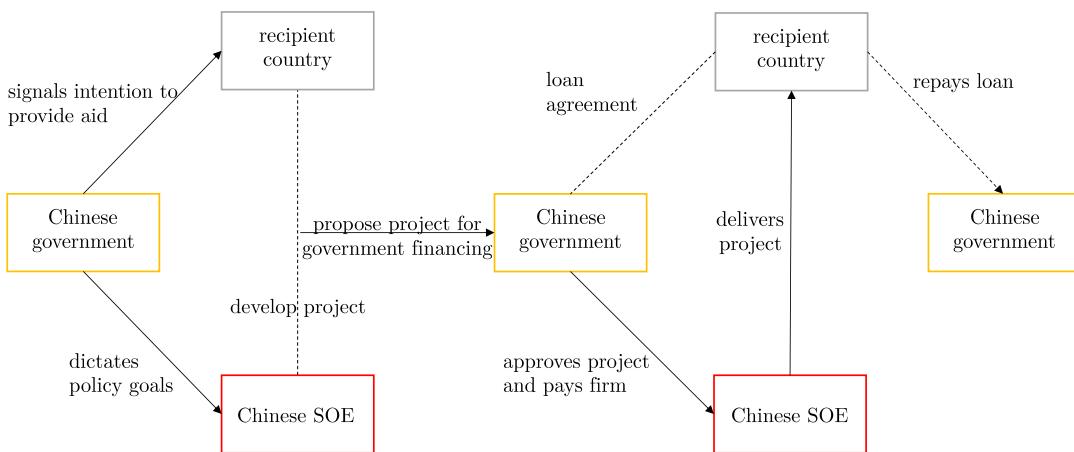
## Online Appendix Figures and Tables

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



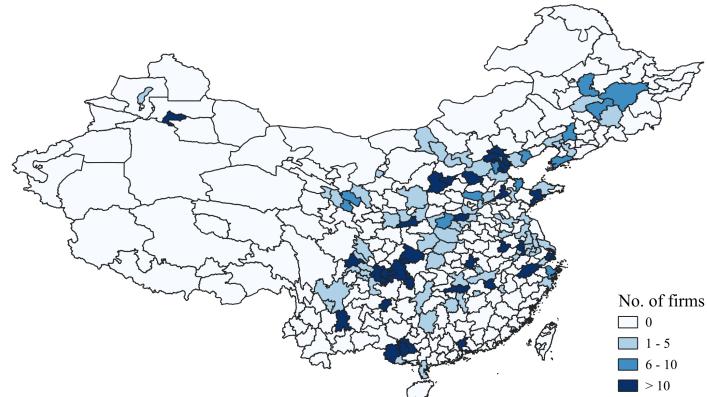
*Note:* This figure shows a simplified overview of China's aid agencies and other central government entities. The China Export-Import Bank and the China Development Bank are state-owned policy banks under the direct supervision of the State Council. The big four state-owned banks include the Bank of China, the Agricultural Bank of China, the Industrial and Commercial Bank of China, and the China Construction Bank. SASAC is short for State-owned Assets Supervision and Administration Commission of the State Council, the Chinese government entity responsible for the management of central SOEs. Black lines indicate ownership. Source: author's illustration based on Bräutigam (2011b), Zhang and Smith (2017) and Horn, Reinhart and Trebesch (2019).

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



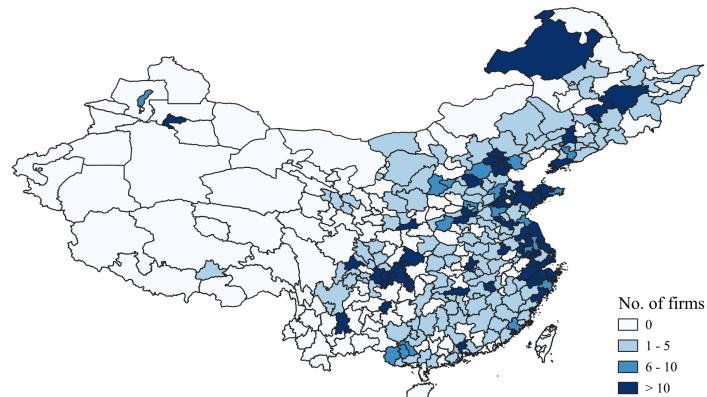
*Note:* Drawing on Bräutigam (2011b), Gu, Chen and Zhang (2014) and Zhang and Smith (2017).

Figure A.3: Distribution of Central State-Owned Firms Across China



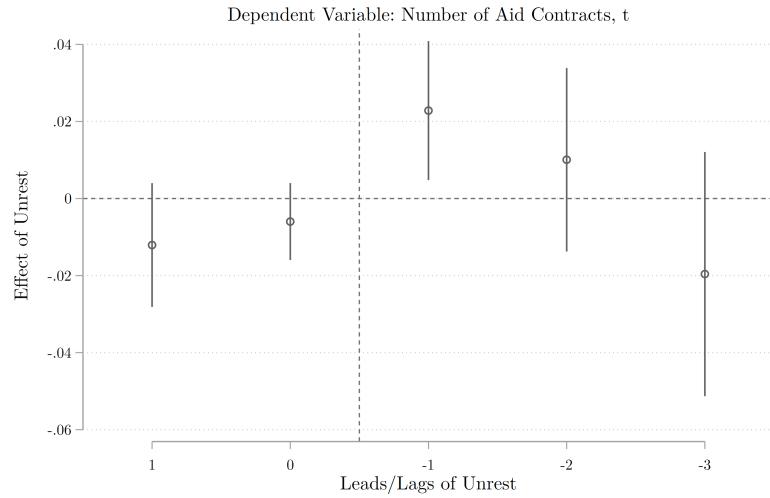
*Note:* This map shows the number of central state-owned firms in the baseline estimation sample in each prefecture. Source: author's illustration based on data described in Subsection 3.2. The map contains territories claimed by China in 2023 but only data for Mainland China is available and included.

Figure A.4: Distribution of Other Firms Across China



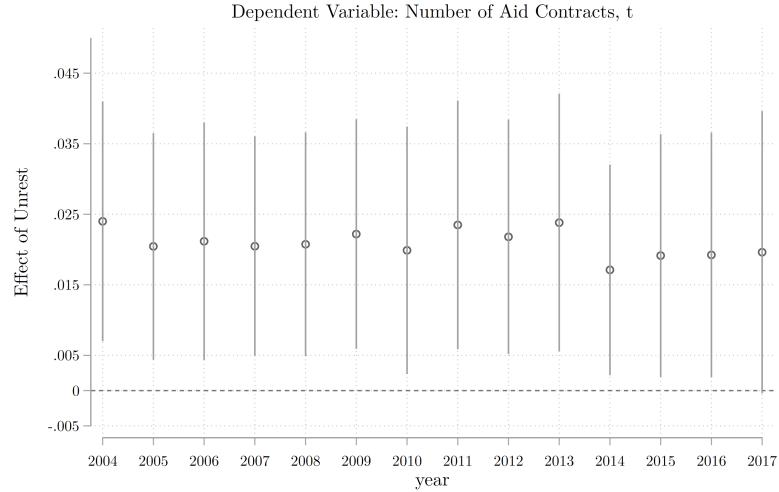
*Note:* This map shows the number of firms that are not central state-owned in the baseline estimation sample in each prefecture. Source: author's illustration based on data described in Subsection 3.2. The map contains territories claimed by China in 2023 but only data for Mainland China is available and included.

Figure A.5: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms



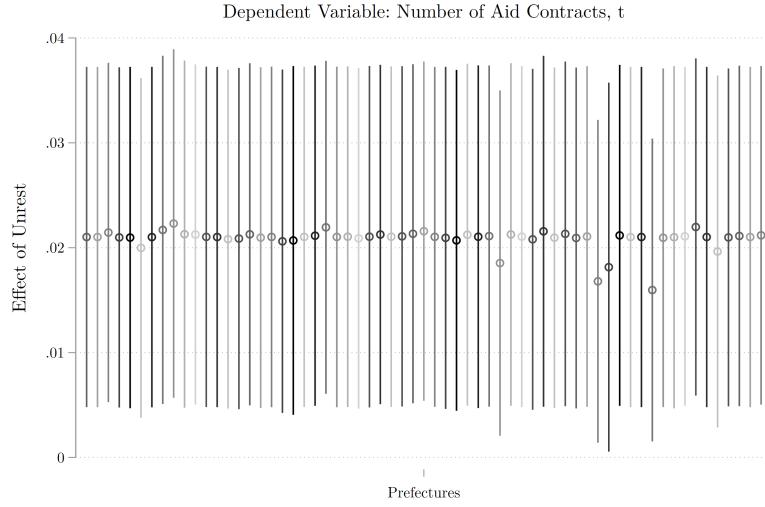
*Note:* The dots show the coefficients from a regression of the number of Chinese foreign aid contracts allocated to firms in a prefecture and year on the number of labor unrest events in the prefecture at all leads and lags shown on the x-axis, controlling for prefecture and province-year fixed effects, prefecture-specific linear time trends, and baseline controls. The vertical lines show 95% confidence intervals. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level. Source: author's illustration based on data described in Subsection 3.2.

Figure A.6: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Dropping Years One-by-one



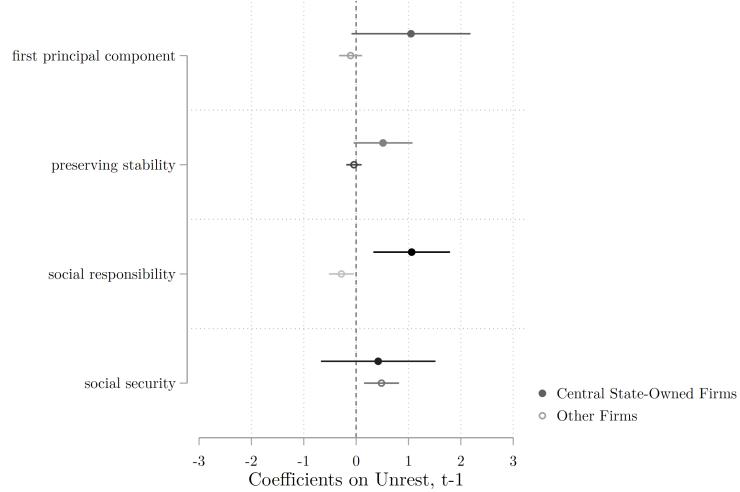
*Note:* The dots show the coefficients from regressions of the number of Chinese foreign aid contracts allocated to firms in a prefecture and year on the number of labor unrest events in the prefecture in the previous year, controlling for prefecture and province-year fixed effects, prefecture-specific linear time trends, and baseline controls. The x-axis indicates which year of data is dropped from the sample in each of the regressions. The vertical lines show 95% confidence intervals. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level. Source: author's illustration based on data described in Subsection 3.2.

Figure A.7: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Dropping Prefectures One-by-one



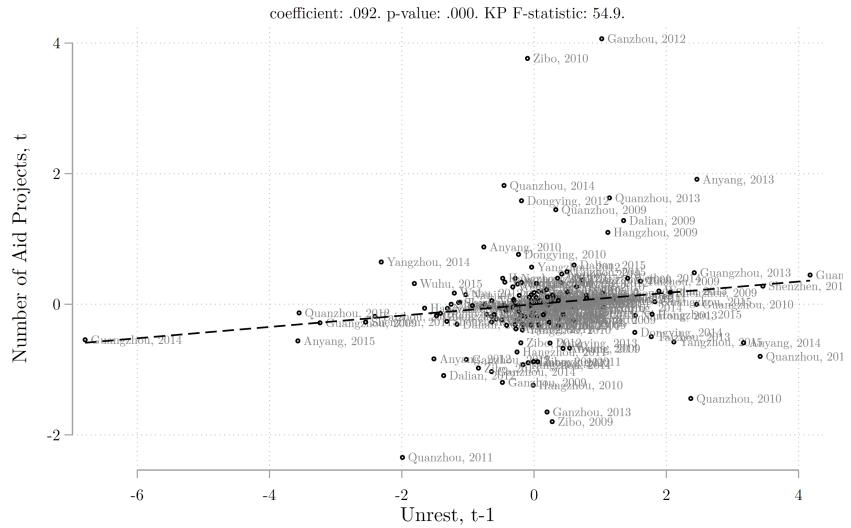
*Note:* The dots show the coefficients from regressions of the number of Chinese foreign aid contracts allocated to firms in a prefecture and year on the number of labor unrest events in the prefecture in the previous year, controlling for prefecture and province-year fixed effects, prefecture-specific linear time trends, and baseline controls. Each regression drops one of the prefectures in the main estimation sample that have at least one firm that ever gets an aid contract during the sample period. The vertical lines show 95% confidence intervals. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level. Source: author's illustration based on data described in Subsection 3.2.

Figure A.8: Effect of Local Unrest on the Frequency of Keywords in Firms' Annual Reports



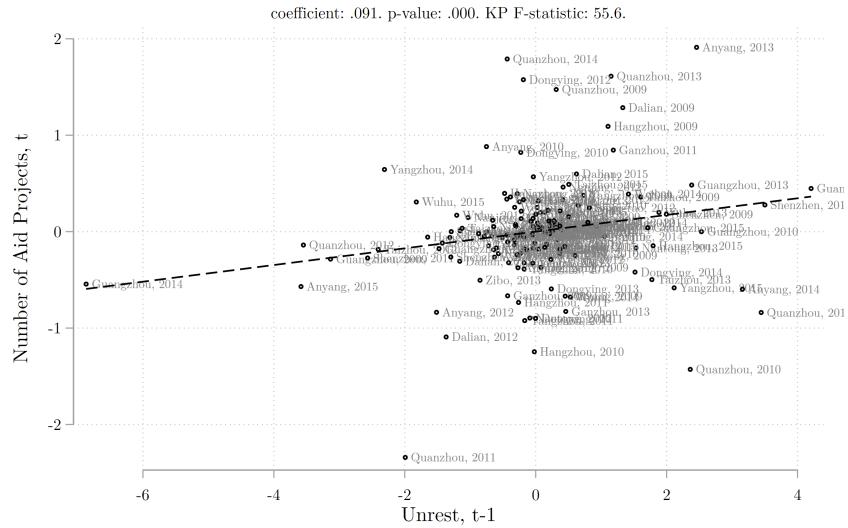
*Note:* Each dot shows the coefficient from regressions of the count of the phrase labeled on the y-axis in firms' annual reports, divided by the total number of words in the report, on the lagged number of labor unrest events in the firms' prefecture, controlling for firm and province-year fixed effects and prefecture-specific linear time trends. The horizontal bars show 95% confidence intervals. All variables are standardized to have a mean of 0 and a standard deviation of 1 to facilitate interpretation. The unit of observation is a firm-year. The standard errors are clustered at the firm level. The sample includes Chinese listed firms and their affiliates that are also in the baseline estimation sample. Source: author's illustration based on data described in Subsection 3.2.

Figure A.9: Country-level First Stage Residual Plot



*Note:* The dashed line shows the line of fit from a regression of the number of Chinese foreign aid projects received by countries in year  $t$  on unrest shocks in Chinese prefectures in year  $t - 1$ . The regression is estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to  $t-2$ . Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regression controls for prefecture and province-year fixed effects and prefecture-specific linear time trends. The dots show the regression residuals.

Figure A.10: Country-level First Stage Residual Plot, Dropping Outliers



*Note:* The dashed line shows the line of fit from a regression of the number of Chinese foreign aid projects received by countries in year  $t$  on unrest shocks in Chinese prefectures in year  $t - 1$ . The outliers Zibo prefecture in 2010 and Ganzhou prefecture in 2012 are excluded from the sample. The regression is estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to  $t-2$ . Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regression controls for prefecture and province-year fixed effects and prefecture-specific linear time trends. The dots show the regression residuals.

Table A.1: The Largest Chinese Foreign Aid Projects by Financial Value

Country	Year	Amount	Short Description	Contractor
Iran	2017	1800	Abadan Refinery	Sinopec
Sudan	2003	1286	Merowe Hydroelectric Power Plant	Powerchina, CIWEC, SinoHydro, STECOL, Harbin Electric
Ethiopia	2013	1253	Addis Ababa-Djibouti Railway	China Railway
Kazakhstan	2009	1152	Atyrau Refinery	Sinopec
Iran	2016	1133	Abadan Refinery	Sinopec
Congo	2012	1019	Pointe-Noire-Brazzaville Road	China Construction

Note: This table shows the largest Chinese aid projects implemented by firms in the sample. The contractors listed are the parent companies of the implementing subsidiaries for ease of exposition. Financial amounts are in million constant 2017 USD. See Subsection 3.2 for details on the data.

Table A.2: Types of Chinese Aid

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

Note: Drawing on Bräutigam (2011a), Zhang and Smith (2017) and Horn, Reinhart and Trebesch (2019).

Table A.3: Examples of Unrest Events

Year	Prefecture, Province	Description
2005	Dongying, Shandong	Shengli oil field workers protest over restructuring
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 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 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
2014	Chifeng, Inner Mongolia	1000 steel workers demand six months of wages in arrears at local gov

Note: Data for 2003 to 2011 is from the *China Strikes Crowdmap* and data for 2012 to 2019 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.

Table A.4: Descriptive Statistics: Firm-level Variables

	Count	Mean	SD	Min	Max
Number of Yearly Chinese Aid Contracts	48999	0.01	0.17	0	7
Financial Value of Yearly Chinese Aid Contracts (mn)	48999	0.52	12.36	0	1221.56
Number of Aid Contracts, Aid Firm	2793	0.26	0.66	0	7
Value of Aid Contracts, Aid Firm (mn)	2793	9.17	50.99	0	1221.56
Number of Employees*	11565	1387	2987	7	28219
Operating Income (mn)*	11525	251	447	0	4055

Note: This table reports descriptive statistics for firm-year level variables for firms in the main estimation sample, covering 2004 to 2017. Financial amounts are in constant 2017 USD. Variables marked with \* are from the firms in the 2007–2015 tax survey, which includes a subsample of firms. See Subsection 3.2 and Online Appendix B.3 for a description of the data sources.

Table A.5: Descriptive Statistics: Prefecture-level Variables

	Count	Mean	SD	Min	Max
Number of Yearly Chinese Aid Contracts	3126	0.23	0.9	0	9
Financial Value of Yearly Chinese Aid Contracts (mn)	3126	8.25	53.51	0	1221.91
Number of Aid Contracts, Aid Prefecture	784	0.93	1.6	0	9
Value of Aid Contracts, Aid Prefecture (mn)	784	32.89	103.03	0	1221.91
Number of Labor Unrest Events	3126	2.51	6.61	0	111
Number of Unrest Events in Neighboring Prefectures	3112	13.07	24.62	0	283
Number of Procurement Contracts	1113	72	271	0	4040
Value of Procurement Contracts (bn)	1103	0.25	1	0	13.77
Population (mn)	3126	4.53	2.5	0.17	14.35
GDP (bn)	3122	28.24	32.54	1.06	332.82
GDP per Capita	3112	6628	4839	611	73917
GDP Growth	3112	11.7	4.19	-15.95	37.69
Average Wage of Employees in Urban Areas	3113	6093	2386	1720	30322
Local Government Expenditures (bn)	3125	3.72	4.08	0.07	67.98
Local Government Income (bn)	3126	2.24	3.47	0.01	49.31
Mayor above 56	1542	0.09	0.29	0	1
Party Secretary above 56	1540	0.3	0.46	0	1

Note: This table reports descriptive statistics for prefecture-year level variables in the main estimation sample, covering 2003 to 2017. Data on aid contracts are described in Section 3.2. Labor unrest data for 2003 to 2011 is from the China Strikes Crowdmap and for 2012 to 2017 from the China Labour Bulletin (CLB). Data on procurement contracts are from the China Government Procurement website and include data from 2013 to 2017 for the firms in the sample. Data on local officials are from Mueller, Wen and Wu (2023). All other variables are based on data from the China City Statistical Yearbooks. Financial values are in constant 2017 USD. See Subsection 3.2 and Online Appendix B.4 for a description of the data sources.

Table A.6: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Prefectures That Ever Have Aid Contracts Only

	(1) # of Contracts	(2) # of Contracts	(3) # of Contracts	(4) # of Contracts	(5) # of Contracts
Unrest, t-1	0.0260 (0.0156)	0.0436*** (0.00851)	0.0381*** (0.0134)	0.0512*** (0.0115)	0.0615*** (0.0132)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	672	672	672	672	672
Adjusted R Squared	0.576	0.618	0.581	0.615	0.620
Dependent Variable Mean	0.926	0.926	0.926	0.926	0.926
Dependent Variable SD	1.641	1.641	1.641	1.641	1.641
Unrest Mean	4.268	4.268	4.268	4.268	4.268
Unrest SD	10.20	10.20	10.20	10.20	10.20

Note: This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. The sample is restricted to prefectures with firms that ever have at least one aid contract. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table A.7: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Contract Value, Prefectures That Ever Have Aid Contracts Only

	(1) Log Value of Aid Contracts	(2) Log Value of Aid Contracts	(3) Log Value of Aid Contracts	(4) Log Value of Aid Contracts	(5) Log Value of Aid Contracts
Unrest, t-1	0.0174 (0.0104)	0.0262** (0.0109)	0.0314** (0.0145)	0.0437*** (0.0151)	0.0640*** (0.0164)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	672	672	672	672	672
Adjusted R Squared	0.468	0.473	0.476	0.467	0.473
Dependent Variable Mean	1.244	1.244	1.244	1.244	1.244
Dependent Variable SD	1.949	1.949	1.949	1.949	1.949
Unrest Mean	4.268	4.268	4.268	4.268	4.268
Unrest SD	10.20	10.20	10.20	10.20	10.20

Note: This table reports the coefficients of regressions of the log of total financial value of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. The sample is restricted to prefectures with firms that ever have at least one aid contract. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data. Financial values are in constant 2017 USD.

Table A.8: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Leads and Lags

	(1)	(2)	(3)	(4)
	# of Contracts	# of Contracts	Log Value of Aid Contracts	Log Value of Aid Contracts
Unrest, t+1	-0.00377 (0.00484)	-0.0121 (0.00815)	-0.00429 (0.00749)	-0.0165 (0.0115)
Unrest, t	-0.00523 (0.00592)	-0.00598 (0.00507)	-0.00738 (0.00972)	-0.0100 (0.0102)
Unrest, t-1	0.0228*** (0.00813)	0.0228** (0.00916)	0.0250** (0.0104)	0.0238* (0.0125)
Unrest, t-2	0.00785 (0.0114)	0.0101 (0.0121)	0.00424 (0.0126)	-0.000170 (0.0130)
Unrest, t-3	-0.0191 (0.0136)	-0.0196 (0.0161)	-0.0262* (0.0154)	-0.0323 (0.0245)
Prefecture and Year FE	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes
Province-Year FE	No	Yes	No	Yes
Observations	2724	2724	2724	2724
Adjusted R Squared	0.657	0.675	0.583	0.581
Dependent Variable Mean	0.249	0.249	0.331	0.331
Dependent Variable SD	0.931	0.931	1.137	1.137
Unrest Mean	2.522	2.522	2.522	2.522
Unrest SD	6.861	6.861	6.861	6.861

Note: This table reports the coefficients of regressions of the number or log financial value of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the number of labor unrest events in the prefecture and year indicated in the table, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table A.9: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms,  
Firm Level

	(1) # of Contracts	(2) # of Contracts	(3) # of Contracts	(4) # of Contracts	(5) # of Contracts
Unrest, t-1	0.000153** (0.0000661)	0.000280*** (0.0000696)	0.000180** (0.0000799)	0.000476*** (0.000102)	0.000502*** (0.000103)
Firm and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	63123	63123	63123	63123	63123
Adjusted R Squared	0.441	0.440	0.441	0.440	0.440
Dependent Variable Mean	0.0188	0.0188	0.0188	0.0188	0.0188
Dependent Variable SD	0.194	0.194	0.194	0.194	0.194
Unrest Mean	7.653	7.653	7.653	7.653	7.653
Unrest SD	14.99	14.99	14.99	14.99	14.99

Note: This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a firm-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table A.10: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Robustness to Firm-level Controls

	(1)	(2)	(3)	(4)	(5)
	# of Contracts	# of Contracts	# of Contracts	# of Contracts	# of Contracts
Unrest, t-1	0.000447** (0.000223)	0.000447* (0.000249)	0.000332* (0.000184)	0.000657*** (0.000250)	0.000500** (0.000239)
Number of Employees, t-2 (per thousand)	0.00111 (0.000690)	0.00110 (0.000671)	0.00130* (0.000695)	0.00123* (0.000689)	0.00125* (0.000693)
Firm Revenue, t-2 (million)	0.00744 (0.0123)	0.00737 (0.0135)	0.00630 (0.0125)	0.00774 (0.0138)	0.00754 (0.0138)
Firm and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	11155	11155	11155	11155	11155
Adjusted R Squared	0.437	0.431	0.438	0.431	0.431
Dependent Variable Mean	0.0188	0.0188	0.0188	0.0188	0.0188
Dependent Variable SD	0.177	0.177	0.177	0.177	0.177
Unrest Mean	9.251	9.251	9.251	9.251	9.251
Unrest SD	16.48	16.48	16.48	16.48	16.48

*Note:* This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to a firm in a Chinese prefecture and year on the lagged number of labor unrest events in the firm's prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a firm-year. Standard errors are clustered at the prefecture level and reported in parentheses. The firm-level controls are from the 2007-2015 tax survey data. See Subsection 3.2 for a description of the underlying data.

Table A.11: Effect of Local Unrest on Aid Contract Allocation to Chinese Firms, Controlling for Unrest in Neighboring Prefectures

	(1) # of Contracts	(2) # of Contracts	(3) # of Contracts	(4) # of Contracts	(5) # of Contracts
Unrest, t-1	0.00571 (0.00643)	0.0160** (0.00711)	0.00706 (0.00682)	0.0173** (0.00771)	0.0174** (0.00793)
Total Number of Unrest Events in Neighboring Prefectures	0.000104*** (0.0000346)	0.0000263 (0.0000468)	0.000122*** (0.0000345)	0.0000404 (0.0000477)	0.0000526 (0.0000438)
Prefecture and Year FEs	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FEs	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	3178	3178	3178	3178	3126
Adjusted R Squared	0.632	0.660	0.633	0.658	0.657
Dependent Variable Mean	0.231	0.231	0.231	0.231	0.234
Dependent Variable SD	0.891	0.891	0.891	0.891	0.898
Unrest Mean	2.186	2.186	2.186	2.186	2.210
Unrest SD	6.409	6.409	6.409	6.409	6.455

Note: This table reports the coefficients of regressions of the number of foreign aid project contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table A.12: Effect of Local Unrest on Prefecture-level Outcomes

	(1) Population Growth	(2) GDP per Capita	(3) Average Wage	(4) Public Income (billion)	(5) Public Expenditure (billion)
Unrest, t-1	0.0299 (0.0282)	0.00883 (0.0199)	-0.00462 (0.0162)	-0.0218* (0.0123)	0.0167 (0.0135)
Prefecture and Year FEs	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	Yes	Yes	Yes	Yes	Yes
Prefecture-Year FEs	Yes	Yes	Yes	Yes	Yes
Prefecture-level Controls	Yes	Yes	Yes	Yes	Yes
Observations	2936	2936	2936	2936	2936
Adjusted R Squared	0.757	0.967	0.977	0.984	0.988
Dependent Variable Mean	0	0	0	0	0
Dependent Variable SD	1	1	1	1	1
Unrest Mean	0	0	0	0	0
Unrest SD	1	1	1	1	1

Note: This table reports the coefficients of regressions of the prefecture-year level outcomes indicated by the column heads on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. All variables are standardized to have mean 0 and standard deviation 1 to facilitate interpretation. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table A.13: Effect of Local Unrest on Domestic Government Procurement Contract Allocation to Chinese Firms

	(1) # of Procurement Contracts	(2) # of Procurement Contracts	(3) # of Procurement Contracts	(4) # of Procurement Contracts	(5) # of Procurement Contracts
Unrest, t-1	6.348*** (1.931)	1.676** (0.834)	6.118*** (2.153)	1.330 (0.828)	1.407 (0.893)
Prefecture and Year FEs	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FEs	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	1102	1102	1102	1102	1102
Adjusted R Squared	0.783	0.945	0.777	0.943	0.943
Dependent Variable Mean	54.49	54.49	54.49	54.49	54.49
Dependent Variable SD	156.2	156.2	156.2	156.2	156.2
Unrest Mean	4.987	4.987	4.987	4.987	4.987
Unrest SD	8.144	8.144	8.144	8.144	8.144

Note: This table reports the coefficients of regressions of the number of domestic government procurement contracts allocated to firms in a Chinese prefecture and year on the lagged number of labor unrest events in the prefecture and year, controlling for the fixed effects and controls indicated in the table. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. Financial values are in constant 2017 USD. See Subsection 3.2 for a description of the underlying data.

Table A.14: Effect of Conducive Weather on Local Unrest, Robustness

	(1)	(2)	(3)	(4)	(5)
	Unrest, t-1	Unrest, t-1	Unrest, t-1	Unrest, t-1	Unrest, t-1
Conducive Weather, t-1	0.261*** (0.0418)	0.299*** (0.0580)	0.238*** (0.0457)	0.294*** (0.0629)	0.297*** (0.0579)
Aid Stock, t-2	-0.0258 (0.0158)	-0.0443** (0.0208)	-0.0357** (0.0173)	-0.0525** (0.0209)	-0.0530** (0.0213)
Conducive Weather, t-1*Aid Stock, t-2	-0.0545** (0.0233)	-0.0390*** (0.0134)	-0.0646*** (0.0234)	-0.0421*** (0.0132)	-0.0424*** (0.0127)
Public Expenditure to GDP Ratio, t-2	-0.126*** (0.0437)	0.0496** (0.0246)	-0.122** (0.0496)	0.0509* (0.0297)	0.0494 (0.0305)
Conducive Weather, t-1*Expenditure to GDP Ratio, t-2	-0.0598 (0.0385)	-0.0439 (0.0304)	-0.0510 (0.0385)	-0.0377 (0.0333)	-0.0377 (0.0328)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	No	Yes	No	Yes	Yes
Province-Year FE	No	No	Yes	Yes	Yes
Prefecture-level Controls	No	No	No	No	Yes
Observations	2648	2648	2648	2648	2648
Adjusted R Squared	0.612	0.787	0.640	0.803	0.803
Dependent Variable Mean	0	0	0	0	0
Dependent Variable SD	1	1	1	1	1
Conducive Weather Mean	0	0	0	0	0
Conducive Weather SD	1	1	1	1	1

Note: This table reports the coefficients of regressions of the number of lagged unrest events in a prefecture and year on lagged conducive weather in the prefecture and year, as well as its interaction with the existing stock of aid project contracts allocated to firms in the prefecture up to two years prior, controlling for the fixed effects and controls indicated in the table. In addition, the regression controls for lagged local government expenditure to GDP ratio and its interaction with conducive weather. Conducive weather is the predicted number of unrest events from the LASSO specification discussed in the text, partialing out prefecture and year fixed effects (following Beraja et al., 2023). Aid stock is calculated as the number of aid contracts allocated to firms in a prefecture up to t-2 after partialing out prefecture and year fixed effects. All variables are standardized to have mean of 0 and standard deviation of 1 to facilitate interpretation. The unit of observation is a prefecture-year. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 3.2 for a description of the underlying data.

Table A.15: Descriptive Statistics: Country-level Variables

	Count	Mean	SD	Min	Max
# of Aid Projects	958	0.95	1.45	0.00	10.00
Log Value of Aid Projects	958	6.80	8.48	0.00	21.61
GDP Growth	934	0.02	0.05	-0.64	0.19
Log GDP	935	23.54	1.70	19.57	27.86
Log FDI Inflow	901	19.84	2.54	0.00	24.41
Log Chinese Imports	958	13.50	1.86	8.77	18.07
Log OECD-DAC Aid	945	19.39	1.48	14.52	23.29
Log Capital Formation	694	22.26	1.75	17.86	26.51
Log Total Consumption	734	23.56	1.58	20.04	27.65
Log Total Imports	736	22.77	1.54	19.14	26.89
Log Total Exports	736	22.38	1.78	17.28	26.81
Unemployment Rate	918	0.08	0.06	0.00	0.34

*Note:* This table reports descriptive statistics for country-year level variables for the observations in the main estimation sample, covering 2008 to 2021. All variables other than number and value of aid projects are from the World Bank Development Indicators ([World Bank, 2022](#)). Financial values are in constant 2017 USD. See Subsection [4.2](#) for a description of the data.

Table A.16: Correlates of Chinese Aid With Recipient Country Characteristics

	(1)	(2)
	# of Aid Projects	Log Value of Aid Projects
UN General Assembly Voting Alignment, t-1	1.072* (0.570)	9.916* (5.067)
Diplomatic Relation w Taiwan	-0.756*** (0.281)	-4.614*** (1.555)
Trade w China, t-1	0.122* (0.0641)	0.0861 (0.318)
Petroleum Exporter	-0.265 (0.183)	-1.255 (0.992)
Gov Debt (% of GDP), t-1	-0.000975 (0.00118)	-0.0125* (0.00741)
Democracy (Polity Score), t-1	-0.0209 (0.0141)	-0.0728 (0.0813)
GDP per Capita, t-1	-0.259** (0.101)	-1.446*** (0.535)
Population, t-1	-0.166** (0.0829)	-0.362 (0.468)
English is Official Language	-0.0290 (0.155)	-0.495 (0.921)
Year FE	Yes	Yes
Observations	892	892
Adjusted R Squared	0.0571	0.0624
Dependent Variable Mean	0.804	6.145
Dependent Variable SD	1.330	8.279

*Note:* This table reports the coefficients of regressions of the number or financial value of Chinese aid projects received by a country and year on the variables listed on the left hand side, controlling for year fixed effects. The time-varying independent variables are lagged by one period. The unit of observation is a country-year. Financial values are in constant 2017 USD. Standard errors are clustered at the country level and reported in parentheses. The country-level data other than Chinese aid are from Dreher et al. (2021a).

Table A.17: Effects of Chinese Foreign Aid on Recipient Countries, RF

	(1) Log GDP	(2) GDP Growth	(3) Log Capital Formation	(4) Log Total Consumption	(5) Log Imports	(6) Log Exports	(7) Unemployment Rate
Weighted Unrest (IV), t-6	0.00386** (0.00143)	0.000283 (0.00339)	0.0184 (0.0147)	0.00112 (0.00368)	0.00159 (0.00782)	0.00830 (0.0139)	0.0153 (0.0312)
Weighted Unrest (IV), t-5	0.00374 (0.00271)	-0.00141 (0.00183)	0.0208 (0.0157)	0.00566 (0.00409)	-0.00384 (0.00651)	0.0110 (0.0130)	0.0102 (0.0253)
Weighted Unrest (IV), t-4	0.00484*** (0.00161)	0.000125 (0.00279)	0.0190 (0.0190)	0.00176 (0.00206)	0.00492 (0.00689)	0.00536 (0.0142)	-0.0873*** (0.0244)
Weighted Unrest (IV), t-3	0.00442** (0.00181)	-0.000178 (0.00125)	0.0321** (0.0135)	0.00234 (0.00386)	0.0249*** (0.00698)	0.0187* (0.0107)	-0.0216 (0.0274)
Weighted Unrest (IV), t-2	0.00441* (0.00250)	0.00438** (0.00177)	0.00143 (0.00905)	0.00780** (0.00328)	0.0106** (0.00442)	0.0106* (0.00526)	-0.0497** (0.0236)
Weighted Unrest (IV), t-1	0.000392 (0.00189)	0.00118 (0.00207)	0.0185 (0.0152)	-0.00428* (0.00229)	0.0160* (0.00851)	0.00137 (0.00931)	-0.00613 (0.0171)
Weighted Unrest (IV), t	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)
Weighted Unrest (IV), t+1	0.000507 (0.00127)	-0.000603 (0.00320)	-0.0152 (0.0117)	-0.00522 (0.00386)	-0.00246 (0.00913)	-0.00733 (0.00542)	-0.0477 (0.0463)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Res. on Country and Region-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	168	168	134	155	156	156	168
Dependent Variable Mean	0.00174	-0.00175	-0.0120	-0.000806	-0.0205	-0.0138	-0.000452
Dependent Variable SD	0.0567	0.0309	0.276	0.0417	0.350	0.466	0.532
Aid Mean	0.880	0.880	0.933	0.912	0.912	0.912	0.874
Aid SD	1.398	1.398	1.466	1.440	1.440	1.440	1.397

*Note:* This table reports the coefficients of separate reduced-form regressions of the outcomes of countries indicated in the column headers at  $t$  on weighted unrest shocks in Chinese prefectures in the years indicated in the table. The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to the year prior to the unrest shocks. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends, as well as recipient population and the outcome variable in the base period. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.

Table A.18: Effects of Chinese Foreign Aid on Recipient Countries, OLS

	(1) Log GDP	(2) GDP Growth	(3) Log Capital Formation	(4) Log Total Consumption	(5) Log Imports	(6) Log Exports	(7) Unemployment Rate
# of Aid Projects, t-6	-0.00289 (0.00474)	-0.00344 (0.00405)	-0.00690 (0.0106)	-0.00172 (0.00521)	-0.00203 (0.0142)	0.00711 (0.0207)	-0.0138 (0.0561)
# of Aid Projects, t-5	0.000771 (0.00239)	-0.00377 (0.00330)	-0.00423 (0.0152)	0.00103 (0.00487)	-0.00302 (0.00697)	0.0227 (0.0198)	-0.0185 (0.0468)
# of Aid Projects, t-4	0.00565 (0.00360)	-0.00119 (0.00217)	0.00483 (0.0156)	-0.00125 (0.00336)	-0.000526 (0.00897)	0.0292 (0.0225)	-0.0442 (0.0443)
# of Aid Projects, t-3	0.00740 (0.00588)	0.0105* (0.00533)	0.0258* (0.0144)	-0.00305 (0.00519)	0.0118 (0.00780)	0.0176 (0.0130)	0.0234 (0.0495)
# of Aid Projects, t-2	-0.00336 (0.00761)	0.00507 (0.0104)	-0.00602 (0.0129)	0.00108 (0.00502)	0.00642 (0.0101)	-0.0343 (0.0381)	-0.0364 (0.0382)
# of Aid Projects, t-1	-0.0107 (0.00962)	-0.0129 (0.0129)	0.0266 (0.0201)	-0.00467 (0.00512)	-0.0423 (0.0730)	-0.0617 (0.0776)	0.0289 (0.0533)
# of Aid Projects, t	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)
# of Aid Projects, t+1	0.00257 (0.00277)	0.00896* (0.00459)	-0.0146 (0.0180)	0.00176 (0.00509)	0.0255 (0.0181)	0.0181 (0.0199)	-0.132 (0.0865)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Res. on Country and Region-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	168	168	134	155	156	156	168
Dependent Variable Mean	0.00174	-0.00175	-0.0120	-0.000806	-0.0205	-0.0138	-0.000452
Dependent Variable SD	0.0567	0.0309	0.276	0.0417	0.350	0.466	0.532
Aid Mean	0.880	0.880	0.933	0.912	0.912	0.912	0.874
Aid SD	1.398	1.398	1.466	1.440	1.440	1.440	1.397

*Note:* This table reports the coefficients of separate OLS regressions of the outcomes of countries indicated in the column headers at  $t$  on the number of aid projects received by countries in the years indicated in the table. The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to the year prior to the unrest shocks. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends, as well as recipient population and the outcome variable in the base period. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.

Table A.19: Country-level First Stage Coefficients, Leads and Lags

	(1)	(2)
	# of Aid Projects	Log Value of Aid Projects
Unrest, t+1	0.00238 (0.0139)	-0.0382 (0.0937)
Unrest, t	-0.00226 (0.0177)	-0.115 (0.160)
Unrest, t-1	0.0804*** (0.0246)	0.591*** (0.155)
Unrest, t-2	0.00251 (0.0257)	0.0504 (0.178)
Unrest, t-3	0.0222 (0.0264)	-0.133 (0.295)
Prefecture and Year FE	Yes	Yes
Prefecture-specific Linear Time Trends	Yes	Yes
Province-Year FE	Yes	Yes
Residualized on Country and Continent-Year FE	Yes	Yes
F-statistics	49.66	13.62
Observations	168	168
Dependent Variable Mean	-0.00497	-0.0594
Dependent Variable SD	0.742	4.210
Unrest Mean	3.899	3.899
Unrest SD	9.976	9.976

*Note:* This table reports the coefficients of regressions of the number or financial value of foreign aid projects received by countries in year  $t$  on unrest shocks in Chinese prefectures in the years indicated in the table. The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to the year prior to the unrest shocks. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends, as well as recipient population and the outcome variable in the base period. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.

Table A.20: Country-level First Stage Coefficients, Falsification Tests

	(1) Log Chinese Imports	(2) Log FDI Inflow	(3) Log OECD-DAC Aid	(4) # of Aid Projects
Unrest, t-1	0.0000522 (0.00202)	0.000135 (0.00773)	-0.00191 (0.00493)	0.0964*** (0.0136)
Log Trade with Chinese Prefectures, t-1				-0.0317 (0.403)
Prefecture and Year FEs	Yes	Yes	Yes	Yes
Prefecture-specific Linear Time Trends	Yes	Yes	Yes	Yes
Province-Year FEs	Yes	Yes	Yes	Yes
Residualized on Country and Continent-Year FEs	Yes	Yes	Yes	Yes
F-statistics	0	0	0.150	26.59
Observations	168	157	161	161
Dependent Variable Mean	-0.00415	0.0290	0.0144	-0.0234
Dependent Variable SD	0.158	0.557	0.229	0.802
Unrest Mean	3.899	4.089	4.056	4.056
Unrest SD	9.976	10.28	10.16	10.16

*Note:* This table reports the coefficients of regressions of the outcomes of countries in year  $t$  indicated in the column headers on unrest shocks in Chinese prefectures in year  $t - 1$ . The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to t-2. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends. Column (5) additionally controls for the trade analog of weighted unrest, replacing unrest with log exports of Chinese prefectures. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.

Table A.21: Effects of Chinese Foreign Aid on Recipient Countries, Robustness to Chinese Trade IV

	(1) Log GDP	(2) GDP Growth	(3) Log Capital Formation	(4) Log Total Consumption	(5) Log Imports	(6) Log Exports	(7) Unemployment Rate
# of Aid Projects, t-6	0.0123** (0.00528)	0.00133 (0.00930)	0.0563 (0.0335)	0.00334 (0.0106)	0.00535 (0.0227)	0.0170 (0.0481)	0.0286 (0.102)
# of Aid Projects, t-5	0.0116 (0.00851)	-0.00237 (0.00879)	0.0535 (0.0386)	0.0140 (0.0131)	-0.00961 (0.0201)	0.0353 (0.0331)	0.0283 (0.0774)
# of Aid Projects, t-4	0.0126* (0.00651)	0.00178 (0.00907)	0.0503 (0.0482)	0.00546 (0.00710)	0.0199 (0.0191)	-0.00178 (0.0410)	-0.241*** (0.0648)
# of Aid Projects, t-3	0.00938 (0.0110)	-0.00141 (0.00497)	0.0869* (0.0434)	0.00588 (0.0127)	0.0690*** (0.0220)	0.0372 (0.0331)	-0.0349 (0.126)
# of Aid Projects, t-2	0.00998 (0.0119)	0.0110 (0.00862)	-0.0114 (0.0335)	0.0122 (0.0179)	0.0161 (0.0180)	0.0366* (0.0204)	-0.166* (0.0966)
# of Aid Projects, t-1	0.000143 (0.00722)	0.00352 (0.00799)	0.0578* (0.0332)	-0.0161** (0.00760)	0.0367* (0.0178)	0.00356 (0.0297)	-0.0414 (0.0935)
# of Aid Projects, t	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)	0 (-)
# of Aid Projects, t+1	0.00338 (0.00563)	-0.0000675 (0.00832)	-0.0465 (0.0317)	-0.00952 (0.0187)	-0.00894 (0.0267)	-0.0172 (0.0165)	-0.145 (0.123)
Prefecture and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture-specific Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Res. on Country and Region-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	168	168	134	155	156	156	168
Dependent Variable Mean	0.00174	-0.00175	-0.0120	-0.000806	-0.0205	-0.0138	-0.000452
Dependent Variable SD	0.0567	0.0309	0.276	0.0417	0.350	0.466	0.532
Aid Mean	0.880	0.880	0.933	0.912	0.912	0.912	0.874
Aid SD	1.398	1.398	1.466	1.440	1.440	1.440	1.397

*Note:* This table reports the coefficients of separate IV regressions of the outcomes of countries indicated in the column headers at  $t$  on the number of Chinese foreign aid projects received by the countries in the years indicated in the table, where the number of aid projects is instrumented by weighted unrest shocks in Chinese prefectures, as well as the Chinese trade equivalent (replacing unrest with log exports of Chinese prefectures), lagged by one year. The regressions are estimated at the shock level (prefecture-year), weighted by countries' exposure to each Chinese prefecture following the methodology of [Borusyak, Hull and Jaravel \(2022\)](#). A country's exposure to a Chinese prefecture is calculated as the share of the country's past aid projects received from the prefecture up to the year prior to the unrest shocks. Country-year level variables are residualized on country and region-year fixed effects prior to reshaping to the prefecture-year level. The prefecture-year level regressions control for prefecture and province-year fixed effects and prefecture-specific linear time trends, as well as recipient population and the outcome variable in the base period. Financial values are in constant 2017 USD. Standard errors are clustered at the prefecture level and reported in parentheses. See Subsection 4.2 for a description of the underlying data.