

STOCKHOLM SCHOOL OF ECONOMICS
Department of Economics
5350 Master's thesis in economics
Academic year 2020–2021

The Impact of Chinese Official Financing on Western Development Assistance

Valentin Elias Messmer (41559)

Abstract: This thesis describes the aid allocation behaviours of the Development Assistance Committee (DAC) donors and their response to the emergence of China as a new donor in the aid landscape. My empirical strategy makes use of an interacted instrumental variable that relies on exogenous variation in the supply of Chinese aid over time resulting from changes in Chinese steel production. Variation across recipient countries stems from the probability of a country to receive aid. With the inclusion of year- and country-fixed effects, their interaction provides a suitable instrument. I find a robust positive relationship between the amount of Chinese foreign aid a country receives and the level of aid from DAC donors and their multilateral institutions. Results indicate that DAC donors use foreign aid to tackle the increasing influence of China by delivering more aid to countries which receive Chinese funding. The thesis also finds empirical evidence that the relationship is less strong for Western aid tied to economic infrastructure projects and that whether Western donors react stronger to competition authoritarian countries than in democracies.

Keywords: Donor competition, Aid allocation, China, Foreign Aid, Official Development Assistance

JEL: F35, O190

Supervisor:	Anders Olofsgård
Date submitted:	December 7, 2020
Date examined:	December 17, 2020
Discussant:	Sofie Appelkvist
Examiner:	Magnus Johannesson

Acknowledgements

I want to express my deepest gratitude to everyone who supported me in writing this thesis. First of all, I want to thank my parents, Raymund Messmer and Elisabeth Kratzer, for their continuous moral and material support throughout my student years. I am indebted to my dear friends Julian, Thomas and Sanya for their intellectual stimulus to and proof-reading of this thesis. Equal gratitude goes to my supervisor Anders Olofsgård for his helpful advice and suggestions throughout the process. Finally, I want to express my gratitude and respect to Axel Dreher and Andreas Fuchs of the University of Heidelberg, whom I never met, but who are the giants on whose shoulders this thesis has been written. Thank you.

Table of Contents

1	Introduction.....	1
2	Literature Review	5
	Aid Allocation.....	5
	Political Interests	6
	Economic interests.....	7
	Altruistic considerations	8
	Donor competition	9
	Aid with Chinese characteristics	10
3	Hypothesis	13
4	Data.....	15
	Dependent Variable: OECD-DAC Creditor Reporting System.....	15
	Independent Variable: Global Chinese Official Finance Dataset.....	15
	Comparing Apples with Dragon Fruits	17
	Freedom Index	20
5	Empirical Strategy.....	21
6	Results & Discussion.....	27
7	Conclusions	34
8	Bibliography.....	36
9	Appendix.....	45
	Tables.....	45
	Graphics	53
	Data Sources	57

1 Introduction

Over the course of the last two decades, China has transformed itself from a net recipient of foreign aid into a major donor country.¹ The impact of this transformation is magnified by foreign aid budget retrenchments in existing donor countries. Between 2000 and 2014, China provided approximately \$350 million in foreign aid, second only to the United States with \$395 billion (Fuchs & Rudyak, 2019). As China becomes more confident in its new role as a leading donor, it is not only expanding its bilateral spending but is also setting up new multilateral institutions like the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank (NDB) as it seeks greater influence in shaping global economic governance (Gallagher, 2017; Humphrey & Michaelowa, 2019). On the one hand, China's transition means that more aid is available to tackle the remaining development challenges. Its rise as a new deep-pocketed donor in the international development landscape has been hailed as arriving "just in time", as the world experiences major financing gaps in infrastructure and the transition towards sustainable and renewable energy sources (Gallagher et al., 2016). Leaders of recipient countries have welcomed it as an alternative to condition-based Western aid that became the norm after the end of the Cold War.² On the other hand, China's rise is stoking fears that it will undermine the existing norms and rules on human rights, environmental protection and debt sustainability jointly developed by Western-controlled development institutions and instead support authoritarian regimes and discourage desirable political reform.

In 2006, the government of Cambodia approached the World Bank for a loan over \$600m. The World Bank was willing to provide the requested sum but had conditions about transparency, anti-corruption and accountability. According to one person familiar with the story, "the Cambodians basically told the World Bank to go to hell and the next day they received a \$601m loan from the Chinese with no conditions" (Duke, 2011, para. 7). A similar case occurred after Western countries demanded from Angola to improve the transparency of its oil sector as a precondition for further concessional loans (Lyman, 2005). Such anecdotal evidence of China outbidding Western actors through condition-free loans and the overall lack of transparency regarding its development assistance activities gave rise to the narrative of China as a "rouge donor" (Náim, 2007, title). Indeed, China does not comply with any of the guidelines set by the

¹ Although China prefers to be called a "development partner" as opposed to a "donor", the established terminology will be used for this paper.

² The Rwandan president Paul Kagame expressed this probably in the least ambiguous way: "China gives what Africa needs: investments and money for governments and enterprises" (Rinke, 2009, para. 3).

Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD), an intergovernmental organization with a membership of mostly advanced and Western countries that hosts the main forum of the traditional donor community.³ Neither does it participate in any standardized development assistance reporting system nor does it publish data on the volume and focus of its foreign aid activities. In contrast to Western donors, it follows a concept of non-interference with its recipient countries, which translates into aid without the conditions for good governance that apply to DAC assistance as illustrated by the examples in Cambodia and Angola (Welle-Strand & Kjøllesdal, 2010). Some scholars track the Chinese view that development aid should only support a country's self-determined development strategy back to its experience as a recipient of Soviet aid in the 1950ies (Fuchs & Rudyak, 2019). More pragmatically, it can be seen as a strategic advantage given that “no strings attached” bodes well with the leaders in many developing countries. Uganda’s long-time president Museveni is cited stating that “Western ruling groups are conceited, full of themselves, (...) while the Chinese just deal with you as one who represents your country” (Hodler, 2016, para. 2).

Criticisms of China’s foreign aid practices usually revolve around the accusation that it uses the humanitarian cover of foreign aid to ruthlessly pursue its commercial and geopolitical interests abroad at the cost of well-intended Western actors and destitute recipient countries. Some commentators have even compared it to (neo-)colonialism (Rotberg, 2009; Sanusi, 2013). The most frequently named motives are to gain access to natural resources and to increase geopolitical influence through what is sometimes dubbed “debt-trap diplomacy”. The term refers to the alleged practice of luring poor, developing countries into taking unsustainable loans until they experience financial difficulty with the ultimate aim to extract unfair or strategic concessions (Chellaney, 2017). This accusation has been so widely repeated by senior policy makers and various media outlets across the world that it has become almost conventional wisdom (Brautigam, 2020, p.3). The most prominent case is Sri Lanka’s strategically located Hambantota port. It was leased for 99 years to a Chinese shipping conglomerate in 2018 in an attempt to ease the Chinese part of the debt burden raised to build the port. This frequently cited prime example of Chinese predatory lending, has been debunked by numerous scholars as a case study in Sri Lankan domestic politics and economic mismanagement of public enterprises rather than in Chinese coercive practices (see

³ Throughout my thesis, I refer the member countries of OECD’s Development Assistance Committee (DAC) and to all multilateral development banks (MDBs) in which these countries hold more than 50% of all voting rights as “Western” donors. It shall be noted that the DAC includes Japan and South Korea, two countries that are usually not considered “Western” in the cultural sense. I use this term interchangeably with the terms “traditional” and “established.”

Brautigam, 2020; Jones & Hameiri, 2020; Sautman & Hairong, 2019; Singh, 2020; Weerakoon & Jayasuriya, 2019).

Of course, Chinese development assistance is unlikely guided by selflessness and humanitarianism alone. Until recently, most of its development flows were controlled and monitored by the Ministry of Commerce (MOFCOM), which has the objective to promote trade and investment, not to oversee development in other countries (Cheng, 2019). Yet, vilifications of China as a rouge donor seem overblown because aid is rarely motivated by altruistic motivations in traditional donor countries as well. A plethora of research documents how foreign aid of established and emerging donors alike is motivated at least to some extent by the donor's political and economic interests.⁴

Given the scale of China's rise as a donor, its impact on the Western development architecture is a topic of increasing interest among academics and policy makers alike. Understanding the nature and scope of this impact is vital for governments and development banks to calibrate an adequate policy response. While most of the foreign aid literature continues to focus on established donors, an emerging body of literature is exploring the intricacies of China's overseas development finance activities, notably with a large focus on its activities on the African continent (e.g. Cha, 2020; Dreher et al., 2016; Li, 2017; Martorano et al., 2020; Strange et al., 2013; Swedlund, 2017; Wako, 2018). Quantitative literature in this field is still sparse as only recently a comprehensive dataset on China's global development finance activities was published (Dreher et al., 2017). Most of the literature based on the dataset examines the effects of Chinese financial flows on certain development outcomes in recipient countries such as corruption, poverty alleviation and economic growth. Far less research focuses on the consequences for and reactions of traditional donor countries to China's ballooning foreign aid. Hernandez (2017) finds that Chinese development projects force the World Bank to decrease the conditionality of their loans to stay competitive while Dreher et al. (2017) find no impact of Chinese presence on the effectiveness of Western aid in the same countries. Three papers address the question of how China's rise as a donor affects the Western aid allocation, all of them have focused exclusively on Africa. Kilama (2015) finds a robust positive relationship between both donors on the continent using a spatial-X model and a difference-in-differences estimation. Contrary, Swedlund (2017) finds only limited evidence that the advent of Chinese financing has altered the relationship between Western donors and recipient countries. Humphrey and Michaelowa (2019) deploy qualitative interviews and a multivariate panel-data analysis to analyze the effect of Chinese

⁴ See chapter 2 for a detailed discussion on donor motivations and aid allocation.

financing on flows provided by the African Development Bank and the World Bank. They find a significant impact on the that small number of more development African countries without access to concessional financing but find no significant impact on aid allocation in poorer countries.

This thesis aims to contribute to the understanding of the response of Western donors⁵ to the emergence of China in the international aid landscape in several ways. First, it will address the question on a global level instead of focusing solely on Africa. The amount of attention that Africa has received in this debate is only partially justified given that only it accounts for 38% of total Chinese official spending (see Appendix B.1). Any debate on shifts in the development paradigm and China's rise as superpower is inevitably a global rather than a regional one. Treating Africa as just one of several theatres allows drawing new conclusions from comparing cross-regional results. Second, it will deploy a new dataset on Chinese development finance and a new instrument developed by Dreher et al. (2017), which allows accounting for endogeneity concerns. Third, it further explores differences in the response by investment sector and political system of the recipient country.

My results suggest that Chinese ODA has a significant and sizable effect on the allocation of Western ODA. This is true for the both total financing amount and the more strictly defined ODA-like flows. I find that the impact is weaker on infrastructure financing than for the remaining sector and stronger for countries with authoritarian regimes than democratic ones. In all cases the effect remains strictly positive and my analysis fails to find any indication for a crowding-out effect on Western ODA.

This thesis is organized as follows. In Section 2, I conduct a review of other existing body of aid allocation literature. Based on the existing literature and other reasoning, I will propose and motivate several hypotheses about the effect of Chinese on Western foreign aid in Section 3. In Section 4, I will explain for each variable how it was coded and the source of the information. In particular, I include a detailed discussion about the Global Chinese Official Finance dataset and the comparability of Chinese and Western development finance flows. In Section 5, I specify my empirical strategy including the exact model and econometric methods applied. In Section 6, I present my results and a discussion of their significance and interpretation. Finally, in Section 7 I address some limitations of the analysis performed and potential avenues for future research.

⁵ In line with the existing literature, I apply throughout my thesis a slightly different definition to the term “aid” whether it is of Western or Chinese origin. In case of Western flows, “aid” only applies to Official Development Assistance (ODA), the strictest definition of aid determined by the OECD-DAC, whereas for Chinese flows it applies to all official financing. For a detailed discussion of the differences and implications on comparability, please see section 3.

2 Literature Review

Aid Allocation

Reading the glossy communication brochures provided by Western development agencies, one could get the impression that the provision of aid is exclusively or at least predominantly motivated by the altruistic objective to create a better world. Most of the existing economic literature on foreign aid focuses on the question whether this objective has been achieved. Most scholars fail to find evidence that aid spurs economic growth but do so for its impact on other development variables such as education or infant mortality (Doucouliagos, 2019; Mishra & Newhouse, 2007). Far less attention has been devoted to the question of whether the proclaimed motivations are actually the true motives. If so, donors would allocate their spending according to where it is most needed or effective. Addressing this question, the 1992 United Nations Human Development Report simply states that the allocation of aid seems “strange and arbitrary” (UNDP, 1992, p. 44). Significant progress in our understanding has been made since, but empirical evidence remains scarce and most scholars agree that research on ODA allocation is still in parts inconclusive (Baydag et al., 2018; Faust & Ziaja, 2012; Pietschmann, 2016). Having said that, most of the aid allocation literature disagrees with the glossy brochures and finds that altruistic considerations are one only among several donor motivations (Fuchs et al., 2015). Alesina and Dollar (2000) conclude in their seminal study that “the direction of foreign aid is dictated as much by political and strategic considerations, as by the economic needs and policy performance of the recipients”. The existing contributions from this strand of research can broadly be summarized by dividing donor motivations of foreign aid into three not mutually exclusive categories: i) political interests, the expectation that the recipient country will behave more favourably towards the donor; ii) economic interests, as a tool to improve trade relations with the recipient; and iii) altruistic considerations.⁶ I will focus in the beginning of this section exclusively on the motivations of Western donors, as their behaviour is the main interest of this thesis. However, as Dreher et al. (2018, p. 184) put it, “theory suggests few reasons why one would expect non-Western donors to behave much differently”. Deviations from this will be discussed at the end of this section.

The three motivations are not mutually exclusive nor is it always possible to identify the true motivation of a project. Indeed, for political motivated aid to fulfil its purpose, the recipient

⁶ Many studies mention “strategic interests” in this context, which is usually a combination of political and economic interests. As there is little coherence among scholars about the definition of the term, the strategic value of different interests varies by country after all, I will not use it in this thesis.

must at least have the impression to benefit from it.⁷ In recent years, climate change mitigation has become a focus of many donors. Projects to limit carbon emission serve both the donor's political interest to mitigate global warming and include an altruistic element as climate conservation is a global public good from which developing countries in the Global South benefit disproportionately due to their higher vulnerability to temperature changes. Imagining a case in which a climate change mitigating project also facilitates the exports of goods, for example of hydro energy plants, and it matches all three categories.

Political Interests

Foreign aid that is motivated by political interests comes with the expectation that the recipient country will behave more favourable towards the donor country. Aid is used as a foreign policy tool to achieve the interests of the donor country abroad (Morgenthau, 1962). The most prominent examples are arguably the extensive development assistant programs run by the United States and the Soviet Union during the Cold War. Both superpowers used aid to provide their allies with incentives to keep in their respective blocs and to lure additional countries into their zone of influence. Unsurprisingly, global aid flows decreased after the ideological struggle ended with the collapse of the Soviet Union in 1991 (Boschini & Olofsgård, 2007). However, as much as this was not the “end of history”, it was also not the end of aid as a foreign policy tool. It is well documented that countries with a temporary seat in the United Nations Security Council continue to receive higher amounts of aid (Vreeland & Dreher, 2014). Countries are also disproportionately likely to vote in line with their donors in the United Nations General Assembly (Alesina & Dollar, 2000). Aid in exchange for political favours is not limited to the United Nations; rather its transparent voting system gives scholars the unique opportunity to obtain publicly available and quantifiable data, which is otherwise not available in the discrete quid-pro-quo of international diplomacy. Donor expectations are rarely expressed explicitly, at least in public, as both donor and recipient governments have a reputational interest in not being perceived to participate in the outright sale of political decisions. In a small number of cases, however, it happens rather blatantly. The European Union offered in 2015 an increase in development assistance for those African countries willing to cooperate in the repatriation of refugees (Der Spiegel, 2015). In 2020, Sudan agreed to start formal diplomatic relations with Israel after US Secretary of State Mike Pompeo offered in exchange the removal of the country from the United States terror blacklist, which prevented it from accessing international development assistance programs (BBC, 2020). In the

⁷ However, the beneficiary in this case can be also the leader or the leadership of the country and not necessarily its population or the country as a whole.

view of realist international relation theorists like Morgenthau, aid for political interests can be described as “the transfer of money and services from one government to another performs here the function of a price paid for political services rendered or to be rendered” (1962, p. 302).

Economic interests

Foreign aid can serve donor countries’ economic interests in two ways: by promoting the export of their own goods and by securing the import of critical goods and materials. Especially bilateral aid is often specifically designed to benefit the economy of the donor country. A common way is to “tie” aid to the purchase of certain goods and services from the donor country. For example, automobiles, airline tickets and consulting services financed by USAID, the US development agency, have in most cases to be purchased from American firms (Radelet, 2006). In the last years, scholars and NGOs have increasingly criticized this practice for making aid provision more costly and less effective. Several donor countries have pledged to increase the percentage of untied aid and the OECD DAC estimates that about 80% of the aid provided by its members in 2017 was untied, up from 42% in 2005 (OECD, 2006, 2018).⁸ Aid can facilitate trade not just through the reflux of aid itself but also act as a door opener for firms, showcase export products and secure market access (Maizels & Nissanke, 1984). A notable example in regard of the latter is the World Trade Organization’s (WTO) Aid-for-Trade initiative, through which developing countries receive technical assistance and infrastructure investments to enhance their capabilities to trade. In general, Berthélemy and Tichit (2004) find a strong relationship between bilateral trade volumes and the allocation of aid that exceeds the amounts of aid provided.

Economic interests can also concern the import of materials and goods, most prominently natural resources. The motive of accessing natural resources is mostly associated with aid from non-traditional donors like China and Russia (Woods, 2008). Although less researched, there is also some evidence that natural resource endowments influence the aid allocation of traditional donors (e.g. Klingebiel, 2013). Couharde et al. (2020) provide evidence that aid allocation of the G7 countries becoming significantly more generous depending on the oil endowments of the recipient is while Fuchs et al. (2015) find correlations between aid allocation and recipient’s mineral and energy depletion levels.

⁸ The OECD’s methodology is criticized for only applying to certain countries and sectors, and allowing for loopholes, which allow member states to label *de facto* tied aid as untied (Anders, 2020). A common way to implicitly tie aid is to select projects in fields in which business or industries from the donor country enjoy a competitive advantage (Klingebiel, 2013).

Altruistic considerations

Finally, a motivation for foreign aid can be the moral obligation of the few rich countries toward the many poor or, as neo-classical economists would frame it, to gain satisfaction from increasing the well-being in less developed countries. While a small number of studies finds no altruistic motivations at all for some donors (e.g. Schraeder et al., 1998), most findings point to altruistic elements in all donor motives. Most empirical studies identify a significant relationship between recipient needs and aid allocation, although it is usually outweighed by the donors political and economic interests (Hoeffler & Outram, 2011). According to Lumsdaine und Schopf (2007), the majority of the priority countries of OECD-DAC members are in the low-income category. Similarly, Bayday et al. (2018) find that OECD-DAC members show a tendency to allocate more aid towards the least developed countries (LDCs). Hoeffler and Outram (2011) find that on average recipient need account for about 36 percent of aid allocations. The size of the altruistic element in aid allocation is highly heterogeneous among donor countries (Berthélemy, 2006). According to Dreher et al. (2011), Australia and France are among the more egoistic Western donors, while the Nordic countries tend to be more altruistic. Alesina and Dollar (2000) and Gates and Hoeffler (2004) find similar patterns. Some scholars have referred to this as “Nordic exceptionalism” (Elgström & Delputte, 2016; Selbervik & Nygaard, 2006).⁹

In the studies mentioned above, recipient-need is defined as purely economic need with GDP per capita as the explanatory variable. Using a different approach, Rodella-Boitreau and Wagner (2011) find that aid inflows increase after the occurrence of a natural disaster in the recipient country but do not find the same in the event of armed conflicts. Foreign aid is also used to promote donor values and ideologies. Traditionally, Western donors focus on the promotion of democracy, human rights and the rule of law (Abrams & Lewis, 1993; Koch, 2015).¹⁰ The Arab Spring led to a stark increase in Western ODA as especially European countries were determined to foster the new democracies in their neighborhood (Pace, 2015). This pattern is not limited to the Arab Spring or the immediate neighborhood of donor countries. Western donors reward newborn democracies in about 75% of all cases with a significant increase in development assistance (Alesina & Dollar, 2000; Kersting & Kilby, 2014). Often the export of values is not only

⁹ Elgström & Delputte (2016) see the Nordic exceptionalism as largely a phenomenon of the past as European donors align their foreign aid policies.

¹⁰ Western donors usually claim that the promotion of democracy and liberal values is an altruistic cause. However, it can also be argued that the promotion of democracy has non-altruistic elements to it because democracies are more likely to be political allies and close trade partners with Western donor countries than authoritarian regimes (Polachek, 1997). Paradoxically, there is little evidence that foreign aid actually promotes democracy (Knack, 2004).

seen as ends in themselves but also as means to improve governance and thereby promote economic growth (Pronk, 2001).

It is contested whether and in what way donors respond to the quality of government in recipient countries. A large number of scholars argues that altruistic donors aiming to improve the efficiency of their spending tend to base their allocation on recipient-merits in addition to other factors (for an overview see table 1 in Winters & Martinez, 2015). The explanation is that aid allocated to better governed countries will increase the development impact per unit as these recipients use the funds more efficiently while at the same time it creates an incentive for poorly run recipients to improve their governance. Contrary, a number of studies find that some donors provide *ceteris paribus* more development assistance to corrupt governments (Alesina & Weder, 2002; Easterly & Williamson, 2011). Acht et al. (2015) find no relationship between governance quality and the likelihood to receive aid at all. Different definitions and indicators for good governance could explain the divergence in the literature on this particular question.

Multiple scholars point out a significant difference between the altruism of bilateral and multilateral donors. There is consensus that in the literature that multilateral development institutions seem to be more policy- and poverty-oriented than their bilateral peers (Canavire et al., 2006; Civelli et al., 2016). In Maizel and Nissanke's (1984) comparison of self-interest and altruistic models to determine aid allocation, the self-interest model fits better with bilateral than multilateral donors. Given the multitude of stakeholders involved, decision-making in multilateral aid channels tends to be less prone to be captured by donor interests (Verdier, 2008). Unsurprisingly, if recipients are of less economic or political interest to the donor, aid effectiveness tends to increase (Girod, 2012).

Donor competition

The three mentioned categories of donor interests provide a solid framework but are not sufficient to understand the allocation of Western development assistance if considered in isolation. Trumbull and Wall (1994) were the first to include variables that account for the interdependency between donor decisions in their model of aid flow determinants. A number of following studies has addressed the questions of how and to what extent one donor's decision may affect others' allocation of aid. Mascarenhas and Sandler (2006) find that donors view each other's aid as complements. Considering aid from all other donors as determinant of donor j 's aid to recipient country i , Berthélemy (2006) initially finds a positive relationship between donor's aid allocation but it turns negative once fixed effects are accounted for. This indicates that donors are attracted by the same factors but the presence of one donor has an off-putting effect on others.

However, newer studies with more sophisticated empirical methods contradict these results. Using measures from the “herding” literature in finance, Frot and Santiso (2013) find significant herding effects in at least some parts of aid distribution. Their behavioral explanation is that donors that do not invest in popular countries fear to be left out and miss investment and diplomatic opportunities in the future. Another explanation is that donors compete for the favors of recipient governments, which are limited goods. In this sense, aid allocations from other donors are becoming strategic complements (Powell & Bobba, 2006). This argument is supported by a study of Barthel (2013), which finds that positive spatial contagion in aid allocation is the strongest for the allocation to countries with which one donor has close political ties if other donors that also have close relations with the same recipient change their aid to this recipient.

Another explanation for herding behavior is that aid allocation is taking place under high levels of uncertainty. Donors might interpret the investments of others as signals for good investments, regardless whether their motives are egoistic or altruistic (Tezanos Vázquez, 2008). This theory is consistent with a study by Davies and Klasen (2019) that finds that the “herd” is following the largest donor in a particular country and a similar micro-study from Brazil by Reinhardt (2006). Other donors might expect the largest donor to have the most information as disbursements tend to correlate with the size of research departments and staff members in a country. In general, most literature concludes that aid allocations from other donors are seen as complements rather than substitutes. There is also coherence in the findings that the effect is weaker for multilateral donors than bilateral donors, which aligns with the findings that multilateral donors are more altruistic, and thus more recipient focused. Herding can partially explain the phenomenon of aid “darlings” and “orphans”.¹¹ It has been found that some recipient countries receive high volumes of foreign aid (darlings) while others are largely left out (orphans) without plausible explanation from other parts of the existing aid literature discussed in this chapter (McGillivray, 2006).

Aid with Chinese characteristics

Most studies that compare between Chinese and Western foreign aid allocation patterns in-depth conclude that they are more similar than commonly assumed (Dreher et al., 2011, 2018; Dreher & Fuchs, 2011; Fuchs & Rudyak, 2019). However, they point out that while China’s foreign aid policy is also driven by a mix of political, economic and altruistic motivations, it differs from

¹¹ A complementary explanation is an increasing selectivity among donors (Dollar & Levin, 2004).

the West in the detailed context of its interests, and the emphasis of the principles of local ownership and non-interference.

Since the death of Mao Zedong in 1976, economic development and modernization has replaced ideology as the main priority of Chinese domestic and foreign policies. Based on its own successes with infrastructure-focused development, it began promoting piloting foreign joint ventures that combined aid, trade and foreign investments in the early 1990ies (Fuchs & Rudyak, 2019).¹² This focus has remained relatively unchanged over the decades. Ports, streets, bridges, railways, telecommunications and energy-related projects such as grids and dams continue to be the backbone of Chinese foreign aid portfolio. These investments, which are sometimes called the “hardware” of development and which the OECD categorizes as “economic infrastructure”, account for 61% of all Chinese aid flows globally (Broich et al., 2020). Since 2013 this focus has been cemented in the Belt and Road Initiative, a multi-billion-dollar global infrastructure-building scheme designed to connect China with the world.

The reason for China's focus on physical infrastructure might be grounded in its own experiences (Zhang et al., 2015). Others argue that China simply has a competitive advantage in the sector, which is not only availability of financing itself but also in execution of such projects. Chinese efficiency and speed is overshadowing the often lengthy and bureaucratic processes of Western development institutions, which makes them an attractive partner for policymakers in recipient countries (Asche, 2018; Chen & Orr, 2009; Soulé-Kohndou, 2018).¹³ By focusing on turnkey projects, Chinese development projects are also easier to implement for weak governments in developing countries, which are sometimes overwhelmed by the Western demands for regular meetings, strict procurement guidelines, quarterly reports etc. (Bräutigam, 2011).^{14 15}

According to its 2011 official White Paper, “China never uses foreign aid as a means to interfere in recipient countries’ internal affairs or seek political privileges for itself” (State Council Information Office, p. 3). This is largely true to the extent it concerns recipients' domestic policies, where China does not follow the Western “carrots and sticks” practice of coaxing countries towards desired development reforms (Bräutigam, 2011). However, with regards to foreign policy,

¹² The beginning of China’s foreign aid trade program can be traced back to the 1950ies. For a detailed overview see Brautigam (2011).

¹³ Western donors argue that these lengthy processes are required to uphold proper social and environmental safeguarding standards.

¹⁴ The downside of turnkey projects is that Chinese financing is tied to contracting Chinese construction companies, which leads to little capacity building in the recipient country.

¹⁵ Brautigam’s (2011) account that low-capacity recipient governments are sometimes struggling to cope with the bureaucratic processes of Western development institutions has been confirmed to me by several Loan Officers working in the Global Partners department of the European Investment Bank.

China does use aid to advance its own interest. Most notably it demands recipients not having diplomatic ties with Taiwan, which it considers a renegade province, before any development cooperation can ensue (Copper, 2016). Nevertheless, Chinese authorities are proud to point out that their demand-driven process is designed to meet the self-defined needs of recipients instead of being imposed upon them. According to them, this approach represents true local ownership – a term that has recently become popular with Western institutions too – and demonstrates cooperative rather than paternalistic in spirit since Chinese aid “comes without Western lectures about governance and human rights” (The Economist, 2010). Consequently, China maintains diplomatic and economic relations with countries regardless of their governance quality and human rights record. This leads some scholars to argue that Chinese aid will indirectly foster corruption and weaken democracy, governance, human rights, social and environmental standards in recipient countries (P. Davies, 2007). Indeed, Dreher et al. (2016) find that when African leaders hold power their birth regions receive substantially more Chinese funding than other subnational regions, suggesting that the non-interference principle creates scope for recipient governments to use aid strategically to their own advantage.¹⁶

Contrary to widespread belief in the West, humanitarian and developmental concerns are visible in China’s foreign aid actions. Controlling for confounding factors, several studies find that poorer countries receive more aid than richer ones (Broich, 2017; Fuchs et al., 2015), although these findings could not be repeated on the subnational level (Dreher et al., 2016). China also allocates significantly larger shares to countries after natural disasters, as can be observed for most (although not all) Western countries (Dreher & Fuchs, 2011). China has a long tradition of dispatching medical emergency teams around the world. According to its 2014 White Paper, it has sent 3,600 medical personnel to 54 countries between 2010 and 2012 alone. During the Covid-19 pandemic it sent medical teams to dozens of countries including Western countries such as Italy (Reuters, 2020).¹⁷

¹⁶ They found no such evidence for World Bank projects.

¹⁷ This behaviour has frequently been described as not being altruistically motivated but an attempt to limit reputational damage after the virus presumably has originated from China (i.a. Bali, 2020). However, this argument can in principle be applied to any aid provision unless it happens in secrecy.

3 Hypothesis

The interrelationships of foreign aid allocation processes are complex, multilayered and yet to be fully understood. Based on the existing body of literature, donor's allocation decisions seem to have positive effects on each other, which is sometimes called herding, rather than crowding each other out. The findings of the literature review provide only limited evidence for differences in Western and Chinese aid motives. The differences found do not indicate that the relationship between China and Western donors is fundamentally different than those among Western donors. Both are in part motivated by political and economic interests, which suggests competitive behavior for favorable treatment by the recipient country. On the other side, both have altruistic motives, through which aid allocation are substitutes. However, in most empirical studies the egoistic elements of aid allocation are prevailing without any reasons to suggest otherwise in this case. The only argument that the herding effect is less strong for Chinese aid is that the gravitational forces of large-scale donors towards smaller Western donors do not apply in the same way for China. Western donors are probably less susceptible to Chinese thought leadership than that of large Western donors and potentially they are not aware of Chinese flows given their opaqueness. However, this seems unlikely to outweigh the competitive forces. Therefore, I propose the following hypothesis, which will serve as baseline for the following ones:

Hypothesis 1 (H1): An increase in Chinese official finance to a recipient country causes an increase in OECD-DAC development assistance to the same country.

China's main sectoral focus is physical economic infrastructure. It has a clear advantage in this sector, by offering countries quick and uncomplicated turnkey projects with the compelling promise to help the recipient to repeat its own infrastructure-based economic success story. On the other side, Western donors have increasingly neglected this sector over the recent decades. In the post-war period, lack of infrastructure and insufficient funds for physical capital accumulation was widely believed to be the main development constraint for the poorest countries in the world. This changed in the mid-1980ies, when Western countries started increasingly focusing on the "software" of development, i.e. social infrastructure and capacity building (Tierney et al., 2011). This trend has continued throughout the 2000s during which traditional donors were focused on the Millennium Development Goals with a strong focus on social sectors (Santiso & Frot, 2013). China has little expertise in these fields and its principle of political non-interference is not compatible with political and administrative capacity building. These two fundamentally different competitive advantages and strategies give each side to focus on their respective niches, where they have more expertise and face less competition. Therefore, I propose the following hypothesis:

Hypothesis 2 (H2): An increase in Chinese official finance to a recipient country causes a lower increase in OECD-DAC development assistance for economic infrastructure projects in the same country than observed in H1.

China's principle of political non-interference makes it a welcome alternative to conditional Western aid for recipient country governments, especially for those with an aversion to democracy, human rights and other Western ideals. Hernandez (2017) finds that the emergence of an attractive alternative forces Western institutions to reduce their conditionality to stay competitive, provided that the supply of development finance resources is greater than the needs of the recipient country. The alternative option for Western donors is to retreat to countries willing to accept their conditions. Western aid shows higher level of conditionality than Chinese (see next chapter), which makes this choice for recipients essentially a decision between low financing cost and the political freedom of not having to adhere to Western-imposed conditions. Given that these conditions often concern topics such as human rights, good governance and rule of law, authoritarian governments should be more reluctant to implement them and thus more likely to opt for Chinese aid than their democratic peers. Additionally, Western institutions pose stricter rules on project selection and procurement, which makes it more difficult for political leaders to select projects which are designed for their own benefit rather than the countries (Dreher et al., 2016). Hence, I propose the following hypothesis:

Hypothesis 3. An increase in Chinese official finance to authoritarian recipient countries causes a lower increase of OECD-DAC development assistance in authoritarian than in democratic recipient countries.

4 Data

I will deploy two different panel datasets to analyse the effects of Chinese aid on Western official development assistance. The data on Western official development assistance is obtained from the Creditor Reporting System (CRS) of the OECD Development Assistance Committee (OECD-DAC) which includes official records of all donors I have defined as “Western”. The Chinese government does not release official data about its foreign aid activities.¹⁸ Data on Chinese aid projects is therefore obtained from AidData's Global Chinese Official Finance Dataset introduced by Dreher et al. (2017).

Dependent Variable: OECD-DAC Creditor Reporting System

The Creditor Reporting System of the OECD-DAC contains official development aid (ODA) statistics reported by its members and most multilateral organizations. It is the most commonly used source of information for statistical analysis of international aid flows in the research literature. According to the OECD, it has captured over 90% of DAC member's bilateral ODA disbursements since 2000 and nearly 100% since 2003 (Petras, 2009). The latest published year at the time of writing this thesis is 2018. The OECD offers two variations of this dataset: Committed amounts and disbursed amounts. In most cases, the two are almost identical as almost all aid promises are fulfilled within two years, the majority even immediately (Hudson, 2013). Still, as commitments can go unspent, I will use disbursements as the more precise indicator of realized aid. This is in line with most of the existing literature (e.g., Nunn & Qian, 2014; Scott & Steele, 2011; Wright, 2009).

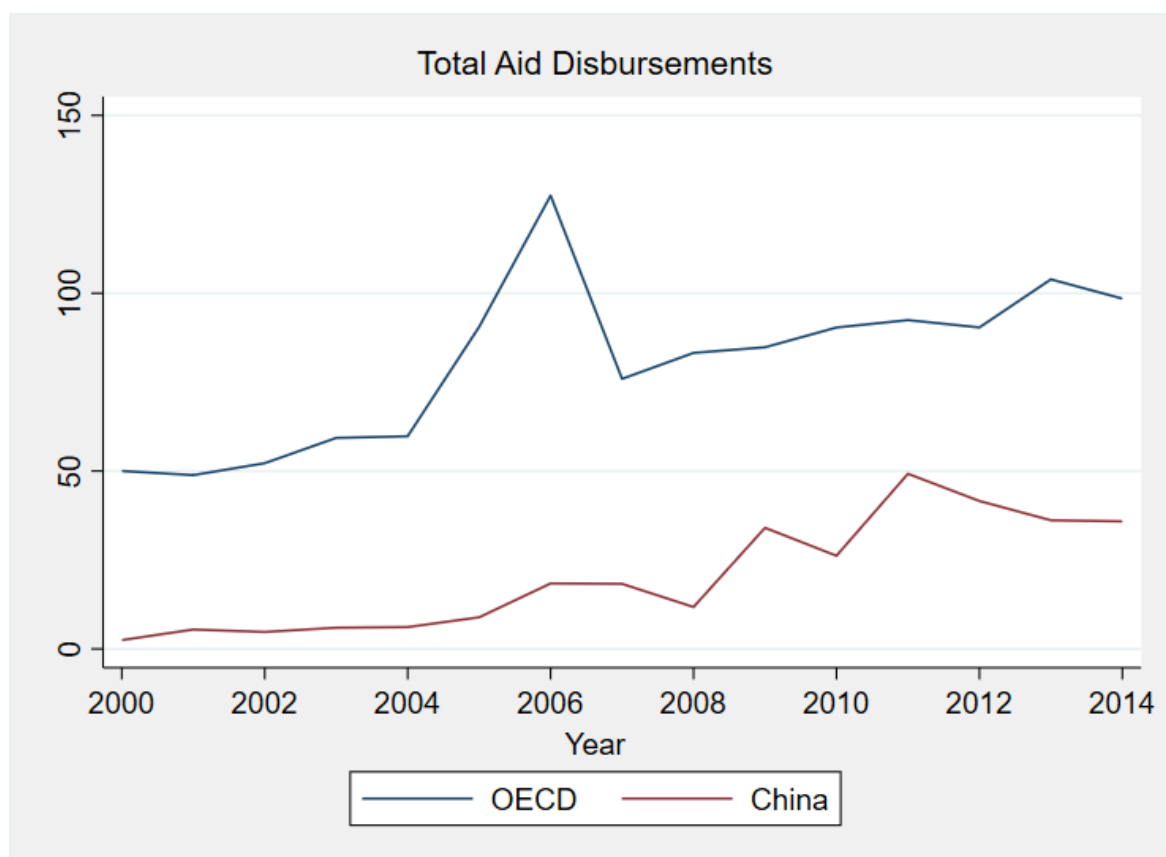
Independent Variable: Global Chinese Official Finance Dataset

The ‘Global Chinese Official Finance Dataset’ (Version 1.0) published by AidData in September 2018 covers the years 2000 to 2014. This 15-year period is highly suitable for my purpose as it coincides with China's rise as a major development partner (Brazys & Vadlamannati, 2020). As shown in Figure 1, China's annual foreign aid disbursement increased from 2.5bn USD

¹⁸ Given China's complex and fragmented foreign aid architecture, which includes inter alia the State Council, the Ministry of Commerce and the Ministry of Foreign Affairs, it seems likely that such aggregated data simply does not exist (Strange et al., 2013). The Chinese Ministry of Commerce announced only in 2014 that will set up a system that gathers and compiles foreign aid statistical data (Kitano & Harada, 2016). In 2018, the Chinese International Development Cooperation Agency (CIDCA) was established for this purpose (Lynch et al., 2020).

in 2000 to over 35bn in 2014 with a temporary peak of 49bn in 2011. It now amounts to almost 50% of Western disbursements.

Figure1: Total Aid Disbursement OECD & China (2000-2014, in 2014 USD bn)¹⁹



AidData dataset tracks Chinese official finance overseas flows based on open-source media reports.²⁰ The methodology has been peer-reviewed and stress-tested over time (Dreher et al., 2017). Martorano et. al. (2018) note that some limitations should be considered when using the AidData dataset. As China does not release official data on its foreign assistance flows, the data obtained from various secondary sources, including official press releases, the media and civil-society organizations, might not be fully representative of the actual flows. However, when cross-checked with alternative sources, the dataset's estimations are remarkably robust. Total ODA flows are comparable to Kitano and Harada's (2016) more recent based on publicly accessible

¹⁹ The upwards outlier in OECD ODA in 2006 was caused by an one-time debt forgiveness of USD 36bn for Nigeria by the Paris Club (Birdsall & Moss, 2006).

²⁰ The AidData Project collects and standardizes information on Chinese development finance flows using its two-staged Tracking Underreported Financial Flows (TUFF) methodology. In the identification stage, potential projects are identified from approximately 28,000 worldwide media sources using the business information tool Factiva. In the subsequent source triangulation stage, additional sources for each project are searched for and synthesized. For further information on the TUFF methodology, see Strange et al. (2013) and Dreher et al. (2017).

government statistics.²¹ The steep growth in Chinese aid projects starting in 2004 (see Figure 1) is also roughly in line with the a White Paper of the Chinese government, which states that its foreign aid increased by 30% annually between 2004 and 2009 (State Council Information Office, 2011, p.3). It can be ruled out that geographical or other kinds of biases in China's reporting on projects distort the distribution of aid across sectors and regions (Strange et al., 2013). In summary, the AidData datasets is the best currently available estimation of Chinese aid flows.

In accordance with AidData's data use recommendations, I excluded all projects which have not been marked "TRUE" in the "recommend for research" field. Further, I exclude all North Korean projects given the extreme secrecy of the country which makes a substantial underestimation of Chinese aid significantly more likely than in the remaining countries. Out of the remaining projects, 59 are of regional structure with more than one recipient country. In order to operationalize these projects, 45 were split into individual projects for each recipient country. If the project value is known, it was split between the recipient countries weighted according to the year-specific population size (World Bank, 2020). 14 projects did not offer any information on the recipient countries and were removed. The final dataset used covers 4,439 projects in 122 countries with a total value of USD 353bn. Out of those, 60% of the projects include information on their respective financial values. Although this bias should be negligible because the remaining 40% are likely to be small projects that did not receive much media coverage, I will account for this weakness in the data by testing the robustness of my results using the number of projects instead of amounts.

Comparing Apples with Dragon Fruits

In popular debate, "aid" is usually treated as a standardized item. This can be problematic as official financing comes in a spectrum of different forms with different conditions attached to and different motivations behind it. In order not to compare "apples with dragon fruits" (Dreher et al., 2018) but to systematically compare international development spending patterns, it is important to note the differences in official flows between Western and non-Western donors such as China.

The OECD-DAC defines official development aid (ODA) as disbursements that i) are provided by an official state agency to a developing country or multilateral development institution; ii) have the main objective to promote economic development in and increase the welfare of the

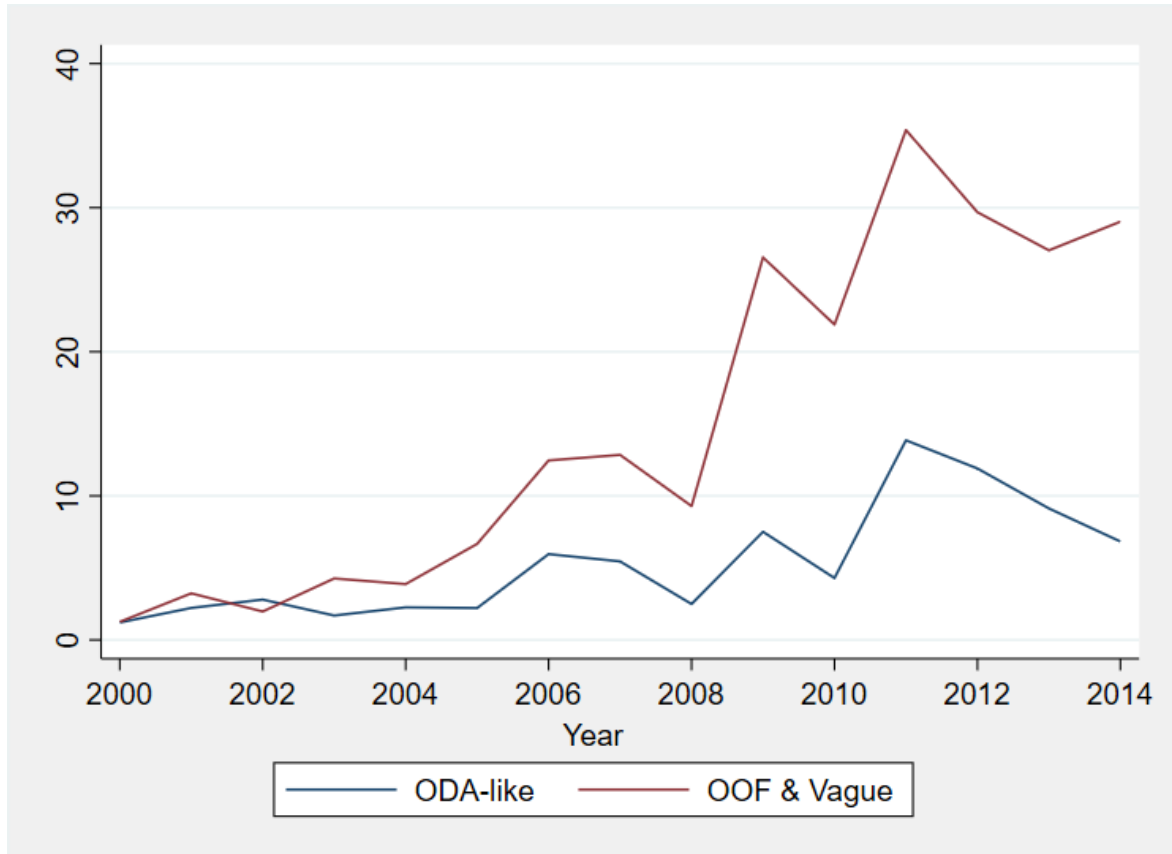
²¹ The reason I do not use Kitano and Harada's data for this thesis is that their approach does not provide country-level data.

recipient countries; and iii) are concessional in character with a grant element of at least 25% based on a fixed 10% discount rate.²² Official foreign aid that does not comply with these definitions is labelled as other official flows (OOF). OOF are provided by governments or official agencies but do not qualify because they have no clear development objective or are not sufficiently concessional. A lack of clarity about different aid classifications is likely to be the primary cause for the widely varying estimates on aid budgets in non-Western countries (Strange et al., 2017).

To ensure comparability between Western and Chinese development flows, the AidData dataset allows to distinguish between three types of flow classes for Chinese official finance. “ODA-like” projects are assumed to be comparable to the ODA definition. The exact loan conditions are usually not known but a clear social or economic development aim and at least some level of additionality must be provided for a project to receive this classification. Likewise, “OOF-like” projects either lack a development objective or are not sufficiently concessional. “Vague (Official Finance)” has been established as a residual category for projects with insufficient information to determine whether the flows are more akin to ODA or OOF. However, as Dreher et al. (2017) point out, “vague” projects mostly resemble the attributes of OOF more than of ODA flows in terms of sectors. Adding to this, it can be assumed that China is more willing to disclose the details of ODA projects as they can be used for public diplomacy in the recipient country. It is therefore reasonable to assume that most “Vague” flows are actually OOF. Therefore, I will only distinguish between ODA and OOF (including “Vague” flows). Figure 2 shows the decomposition of Chinese aid into the two categories over the observed period. Both flow types were at relatively similar levels in 2000 and 2001 but since then OOF flows account for the vast majority of Chinese foreign aid.

²² The OECD has amended its methodology by allowing for in-donor refugee costs since 2016. Further, it has introduced the “grant equivalent” method, which was first applied for to the 2018 figures (OECD, 2019).

Figure 2: Decomposed Chinese Aid Flows (2000-2014, in 2014 USD bn)



Both types of foreign aid serve different interests. Given its concessionality, ODA and especially ODA grants are the most expensive form of aid from a donor's perspective. Contrary, OOF do not necessarily impose significant cost on the donor if the grant element is low or non-existent. Dreher et al. (2018) assume that these kinds of flows are more likely to be motivated by economic rather than altruistic or political interests. A common form of OOF are trade finance instruments such as export credits, which are tied to buying goods and services from firms in exporting countries. Similarly, several case studies from the aid effectiveness literature show that higher levels of concessionality have greater effects on generating economic growth and decreasing poverty (Cordella & Ulku, 2007; Khomba & Trew, 2019).

To avoid the pitfall of comparing apples with dragon fruits, I will separately analyze the impact of Chinese foreign in the broad definition including all official financing flows from the AidData dataset and in the narrow definition including only projects which are comparable to the OECD-DAC ODA definition. One might argue that only ODA-flows constitute “real” aid and OOFs are not in direct competition to Western ODA due to their commercial conditions. However, while they might not be competitors in “spirit”, given the limited lending capacity of most developing countries, Chinese flows do not need to be development-oriented or concessional

to potentially affect demand for Western ODA loans. Adding to that, a significant number of developing countries also does not have access to international financial markets. For these countries, Chinese OOF and Western ODA are often the only financing options available. While Western ODA is cheaper in financial terms, it usually comes with the cost of being tied to conditions such as good governance and macroeconomic reform. This makes Chinese OOF with “no strings attached” an attractive alternative for governments unwilling to fulfil the conditions of Western institutions. Hence, excluding this form of financing would distort the impact of China’s rise as an alternative to Western development assistance.

Freedom Index

To test Hypothesis 3, I deploy the Freedom in the World index from Freedom House (2020). The index assigns countries scores according to the political rights and civil liberties citizens enjoy between 1 (most free) and 7 (least free). In the original methodology, a country’s average value of the two categories must not exceed 2.5 to receive the status “free” and the remaining countries are divided into “partially free” and “not free”. I slightly deviate from this methodology to increase the sample size. Countries with an average value below 3.5 are categorized as free or democratic, and countries with a value of 3.5 or higher as authoritarian. The result is that some countries, which are not democracies in the purest sense are labelled as such. The intuition behind the freedom variable is that even for imperfect or flawed democracies it is easier to comply with conditions regarding good governance and Western values.

5 Empirical Strategy

Leveraging both datasets, my empirical strategy follows Dreher et al.'s (2016) analysis of the effects of Chinese aid on economic development in African countries. I estimate the relationship between my dependent variable (Chinese aid) and my independent variable (Western ODA) with the following regression equation using ordinary least squares (OLS):

$$(1) \text{AidDAC}_{i,t} = \beta_1 \text{AidChina}_{i,t-l} + \beta_2 \text{pop}_{i,t-1} + \beta_3 \text{GDPpc}_{i,t-1} + \beta_4 \text{SC}_{i,t-1} + \mu_t + \omega_i + \varepsilon_{i,t}$$

where $\text{AidDAC}_{i,t}$ is the logged amount DAC members disbursed to recipient country i during year t ; the key explanatory variable $\text{AidChina}_{i,t-l}$ is the logged amount or number of Chinese aid it. It is lagged by l periods to account for the time OECD-DAC donors need to react and change their foreign aid policies and allocation patterns²³; $\text{pop}_{i,t-1}$ is the logged population size of the recipient country (World Bank, 2020); $\text{GDPpc}_{i,t-1}$ is the logged GDP per capita in the recipient country (World Bank, 2020), $\text{SC}_{i,t-1}$ is a binary variable indicating membership in the United Nations Security Council (UNSC); μ_t are year-specific fixed-effects; ω_i are year- respectively country-fixed effects; and $\varepsilon_{i,t}$ is the error term. Following similar studies, I am using logarithmic units to minimize variance as aid disbursements tend to be prone to outliers (see e.g., Alesina & Dollar, 2000; Boschini & Olofsgård, 2007; Dreher et al., 2017).^{24 25} Standard errors are clustered at the recipient level to deal with cross-country heteroscedasticity but while allowing for correlations between the errors in the observations within a recipient country.

I am controlling for year-fixed effects, which allows to account for unobservable country-invariant forces that potentially influence the outcome. Such forces can for example arise from shifts in domestic politics in major donor countries, which influence aid budget sizes or allocations.²⁶ It also accounts for global trends such as the economic recession following the

²³ Following Humphrey and Michaelowa (2019), I will use a two-year lag as my baseline assumption but also run regressions for three- and four-year lags. It is difficult to identify the optimal time span of Western donors to react as responsiveness varies between different donor countries and development institutions. Most donors “set their agenda for development policy on a medium- or long-term basis and then make the decisions by taking recent international political and economic environment into consideration” (Baydag et al., 2018, p. 6). Lengthy and bureaucratic processes are in fact a complaint often levelled against traditional donors by recipient countries.

²⁴ Several scholars also note the benefits that logarithmic units reduce skewness and account for potentially diminishing returns to aid (Ahmed, 2016).

²⁵ Zero observations were excluded from the logarithmic transformation.

²⁶ For example, in the US, by far the most significant donor in my set of Western donors, conservative governments tend to spend less money on foreign aid than left-leaning ones (Milner & Tingley, 2010).

financial crisis in 2007, which led to notable decline of global aid provided (Dang et al., 2013). Controlling for country-fixed effects allows to account for unobserved time-invariant country-specific factors. For example, geographic distances to major donor countries are negatively correlated with the amount of aid a country receives, while sharing colonial or other historical links with a major donor is strongly positively correlated.

Existing literature points to a number of potentially significant aid allocation factors that are both year- and country-variant, and thus are not or only insufficiently captured by the fixed effects configuration of my model. Some of these factors are observable, allowing me to separately control for them. Countries with smaller population sizes and GDP per capita tend to receive more per capita than larger and richer ones (Alesina & Dollar, 2000).²⁷ ²⁸ Kuziemko and Werker (2006) show that countries that become temporary members in the United Nations Security Council receive an increase in aid from the United States. As the United States is the most important Western donor and other donors possibly show similar behavior patterns, I am also controlling for the Security Council membership.

Despite the use of these controls and of lagged values, my regression is not sufficient to identify the causal effect of Chinese official finance on OECD ODA for two reasons. First, it is likely that finance flows from both sources are simultaneously determined by unobserved time- and country-variant factors, such the discovery of natural resources, which would introduce omitted variable bias. Second, there is the risk reverse causality because the relationship of the dependent and independent variable might be reciprocal. There is little reason to believe that the aid motivations of both sides are fundamentally different. Hence, it is reasonable to assume that some or all channels, through which Chinese development aid is affecting Western aid, also work in the opposite direction. An example is the herding effect described in section 2.

I account for the potential omitted variable and endogeneity bias of my regressor with an instrument variable strategy. The strategy deployed is based on Nunn and Qian's (2014) seminal estimate of the effect of US food aid on conflict in recipient countries exploiting exogenous time variation in US wheat production. Dreher et. al. (2016; 2017) reconfigured the approach to estimate the effect of Chinese aid on the economic performance of recipient countries by replacing US

²⁷ One way to explain this relationship is that it is comparatively cheaper to buy policy concessions such as votes in the United Nations General Assembly from smaller nations using aid (De Mesquita & Smith, 2009; Wang, 1999).

²⁸ Especially some Sub-Saharan African countries experienced high population growth of >3% during the duration of my dataset. Controlling for population size using fixed effects would strongly confound my results for these countries.

wheat production with Chinese steel production.²⁹ China is the leading producer and exporter for steel in the world (Stratfor, 2016). The rationale behind using Chinese steel production as an instrument for its aid is that it is considered a commodity of strategic relevance by the Chinese Government due to its importance for several key industries such as construction, manufacturing and defense. China deliberately maintains production capacities well above domestic requirements and is constantly looking for overseas markets to “dump” its not needed steel products at below-market prices (Spegele & Miller, 2016). Aid projects are often used for this purpose as the majority of Chinese development projects are infrastructure related and require some form of construction activity. Financing loans for such projects are in most cases tied to purchase of Chinese export goods such as steel. For example, the China EXIM Bank has the conditionality that at least 50% of the procurement must come from China for a project to be eligible for concessional financing (M. Davies et al., 2008). The Chinese foreign aid program is indeed designed to promote the export of Chinese goods and act as a “door opener” for Chinese companies in overseas markets (Chen & Orr, 2009; Dreher et al., 2016). For these reasons, Chinese domestic steel production is a suitable instrument that helps separate the effect of Chinese aid allocations from potential global dynamics affecting development investment in recipient countries (de Soyres et al., 2019). Using an interacted instrument, I estimate the following first-stage regression:

$$(2) \text{AidChina}_{i,t-l} = \gamma_1 (\text{steel}_{i,t-l-1} \times p_{AC,i}) + \mu_t + \omega_i + v_{i,t-l}$$

In my model equation (1) is the second stage and equation (2) is the first stage, where the instrument $\text{AidChina}_{i,t-l}$ is the logged amount or number of Chinese aid country i received in period t ; $\text{steel}_{i,t-l-1}$ is the Chinese domestic steel production $l+1$ periods before t (data from the World Steel Organization, 2020); $p_{AC,i}$ is the probability of recipient country i to receive aid in any year during the observed period from 2000 to 2014³⁰; μ_t and ω_i are year- respectively country-fixed effects; and $v_{i,t}$ is the error term. The first-stage regression remains parsimonious as I expect the instrument to be perfectly excludable.

I am using an interacted instrument consisting of (logged) Chinese steel production and a recipient’s probability to receive Chinese aid. The conceptual intuition behind this approach is to compare Western ODA in developing countries after Chinese steel production is high to years after it is low. Causal interference requires the assumption that lagged Chinese steel production influences Western ODA allocation only through Chinese financial flows. A concern is that both

²⁹ Similar approaches have also been used in Bluhm et al. (2018), Dreher et al. (2019) and Dreher & Mazat (2020).

³⁰ In mathematical terms: $p_{AC,i} = 15^{-1} \sum_{t=2000}^{2014} AC_{i,t}$ where $AC_{i,t}$ is a binary variable that switches to one if country i receives any Chinese funding in year t and zero if it does not.

variables are jointly determined by other changes over time, which are spuriously correlated with Chinese steel production and thus confound the 2SLS. My model addresses this by controlling for year-fixed effects. However, since Chinese steel production by itself varies only over time, it would be collinear with the year-fixed effects. Hence, an instrument that is both year- and country-variant is required. These requirements are fulfilled by an interacted instrument, consisting of (logged) Chinese steel production and the probability for a country to receive Chinese aid in any year over the period from 2000-2014.

The interacted instrument combines two advantages. Chinese steel production varies only over time and is presumably exogenous to allocation of Western development aid in any specific country, while the probability to receive Chinese aid varies only across countries. The probability element of the instrument might be endogenous to the outcome variable - in fact, it is likely if one assumes similar aid motivations - but this does not violate its exogeneity because the model controls for the effect of the probability to receive Chinese aid through the inclusion of country-fixed effects. The interaction of an endogenous and an exogenous variable is exogenous under mild assumptions if one controls for the effect of the potentially endogenous variable (Bun & Harrison, 2019; Goldsmith-Pinkham et al., 2018; Nizalova & Murtazashvili, 2016). This approach is similar to the shift-share instruments used in trade economics to analyze the effects of Chinese imports on US labor markets (Autor et al., 2016; David et al., 2013).

This estimation strategy is also conceptually similar to a *difference-in-difference* approach, analyzing the differences in the effects of changes in Chinese steel production between countries with a high probability of receiving Chinese aid to those with a low probability (Dreher et al., 2016, 2017). The most significant difference between my model and the one used by Dreher et al. is of course that I am aiming to identify the effect of Chinese foreign aid on Western development assistance to rather than economic growth in recipient countries. The identifying assumption is that changes over time in my interacted instrument do not affect the allocation of Western ODA other than via the impact of Chinese foreign aid, subject to the included controls.

Challenging this assumption from a theoretical point of view, one could point out that Chinese steel production might influence the economic performance of Western donor countries, which would then impact Western aid budgets. A decline in Chinese steel production could, given that it accounts for roughly half of the global steel production, lead to an increase in global steel prices with a potentially chilling effect on the global economy. While this relationship is *prima facie* plausible, I argue that it is practice not of concern. First, there is no apparent relationship between Chinese steel production and economic growth in the OECD member states during the

relevant period from 2000 to 2014. The correlation coefficient is -0.10 with a p-value of 0.72, suggesting that any observed correlation is likely to be random.³¹ This observation is consistent among almost all OECD-DAC countries. Only the economic performance of Greece, whose foreign aid accounts for only 0,17% of the group's disbursements, is correlated to Chinese steel production with a p-value of below 0.05 (see Table A.1). Second, even if omitted variable bias confounds this correlation and a causal relationship between Chinese steel production and Western ODA exists, this will not invalidate my instrument. The fixed effects in my model would still control for all year- and country-specific changes over time. Hence, the changes in the allocation of Western development aid arising from differences in Chinese steel production would need to be systematically different depending on the likelihood of a recipient country to receive Chinese funding in order to violate the identification assumption.

If a systemic relationship between the probability to receive Chinese aid and the direct impact of Chinese steel production on the amounts of Western ODA exists, it can be visually detected. This exercise is essentially the same as the visual confirmation of the parallel (pre-)trends assumption in a traditional difference-in-differences approach. To this end, I plot the variations in Chinese steel production together with total Chinese financial flows and Western ODA for two groups: Countries with a below-average probability and countries with an above-average probability to receive Chinese aid.³² Graphs 1-3 in the appendix report the corresponding figures. The graphs give no indication for concern. For both Chinese and Western aid, the graphs seem to move roughly in parallel without any major deviation at any point during the observed period from 2000-2014. None of the few small deviations has a noticeable connection to a trend in Chinese steel production. Hence, the identification assumption is fulfilled, and the instrument can be considered exogenous.

As in all instrumental variable estimates, the two-stage least squares estimator only reflects the average effect for the subset of my observation that comply with the instrument, which is called *local average treatment effect* (LATE) (Angrist & Imbens, 1995; Nunn & Qian, 2014). In this setting, compliers are observations that receive more Chinese funding following years with increase in Chinese steel production. Countries whose receipt of Chinese funding are not affected by changes in Chinese steel production are not part of this subset and thus will not affect the estimate.

³¹ Economic growth measures as year-to-year changes in GDP using a one-year lag. Data from World Bank Open Data (2020).

³² The methodology to calculate the probability is the same as for the probability element of the interacted instrument (see footnote 20).

As Dreher et al. (2017) and others point out, the instrument potentially picks up two sorts of unintended variables that might influence our outcome variable. First, the production levels of other construction materials like timber and cement are likely correlated with steel production. If they affect Western ODA without correlation to a recipient country's probability to receive Chinese aid they will be filtered out by the fixed effects. If they affect Western ODA with correlation to a recipient country's probability to receive Chinese aid, they simply become part of the instrument. The LATE would capture the combined effects of steel and correlated production materials, which is not a threat to my identification strategy. Secondly, steel production is highly correlated with Chinese overall foreign direct investments (FDI).³³ As outlined before, the official motivation of Chinese aid is to facilitate trade relationships. If the Chinese government has any success with this, frequent recipients of Chinese aid have tighter trade relationships with China than those who are less likely to receive aid. This means that observed changes in Western ODA allocation could also be influenced by Chinese FDI.³⁴ To address potentially confounding effects arising from this, I will control for Chinese FDI interacted with the probability to receive aid in the robustness checks using data for the World Investment Report (UNCTAD, 2017).

³³ Correlation coefficient = 0.98

³⁴ In the case of China, the lining marking the difference between aid and FDI is blurry as is the one marking the difference between its private and public sector (Olson, 2020).

6 Results & Discussion

The first three columns of Table 1 present the results of the fixed-effects (FE) regression of total Chinese flows, including ODA-like and other official financing flows on Western ODA with a lag period between two and four years. In line with H1, it shows low positive coefficients for all three lags, significant at the 10% level for two- and three-year delays and at the 5% level for the four-year-lag. Columns 4-6 present the same analysis for the more narrowly defined measure of Chinese aid which only includes Chinese projects that meet the OECD-DAC criteria. The results are similar with the exception that the significance of the two-year-lag is above the 10% level. Appendix A.2 shows similar results for using the number of projects instead of aggregated projects amounts as independent variable, although with lower levels of significance for both types of Chinese aid.

Table 1: Effects of Chinese aid amounts on Western ODA (2000-2014)

Independent Variables	Lag	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
Total Chinese Official Finance (logs)	t-2	0.006* (1.81)					
Total Chinese Official Finance (logs)	t-3		0.007* (1.87)				
Total Chinese Official Finance (logs)	t-4			0.007** (2.11)			
Chinese ODA-like flows (logs)	t-2				0.004 (1.64)		
Chinese ODA-like flows (logs)	t-3					0.006* (1.89)	
Chinese ODA-like flows (logs)	t-4						0.007** (2.37)
GDP recipient (logs)	0	0.487 (1.19)	0.340 (0.81)	0.175 (0.42)	0.503 (1.23)	0.359 (0.86)	0.192 (0.47)
population (logs)	0	1.060 (0.95)	1.045 (0.96)	1.005 (0.97)	1.085 (0.96)	1.065 (0.96)	1.022 (0.97)
UNSC membership	0	0.003 (0.06)	-0.001 (-0.14)	-0.001 (-0.01)	0.011 (0.18)	-0.002 (-0.05)	-0.007 (-0.13)
Observations		1830	1830	1830	1830	1830	1830
Countries		122	122	122	122	122	122
R-squared		0.077	0.061	0.042	0.075	0.059	0.041

Note: t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level.

As argued in the previous chapter, the FE regressions results are likely suffering from endogeneity. Therefore, the results in Table 1 should be considered as correlations rather than causalities, Table 2 accounts for endogeneity arising from reverse causality and unobserved time-

and country-variant confounders by deploying the better-suited 2SLS approach. The results of the 2SLS regression show a stronger impact of Chinese funding on Western ODA with significance at the 1% level after all lags. The downward bias for the OLS results is likely caused by China's tendency to provide more aid to poorer countries and in line with previous studies (Dreher et al., 2017). Another reason could be endogeneity arising from reverse causality. The effect can be observed when regressing for total amounts of Chinese official financial flows and when regressing for ODA-like flows. For both types of flows the effect has the strongest effect after a lag of four years, suggesting that Western donors are rather slow to react. Appendix A.3 and A.4 show consistent results for using Chinese aid projects instead of amounts as dependent variable and for including Chinese FDI as control variable respectively.

One might note that the effect seems relatively minor. A doubling of Chinese funding only leads to an increase between 13,9% and 17,4% in Western ODA depending on the lag. However, the effect is highly significant in all three years, which indicates that different Western donors have different reaction times and/or react over periods of more than one year. Hence, the coefficients for different lags should be considered on an aggregated basis.³⁵ Further, one has to keep in mind that Chinese foreign aid disbursements are still significantly lower than Western ODA (see Figure 2 in section 4).

³⁵ Appendix A.5 presents regression results for one- and five-year-lags. There is some evidence that Western donor reactions exceed the three-year interval presented in Table 2, although the results suffer from lower significance and in case of the one-year-lag from potential weak instrument bias.

Table 2: Effects of Chinese aid amounts on Western ODA (2000-2014)

Independent Variables	Lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese Official Finance (logs)	t-2	0.139*** -2.85					
Total Chinese Official Finance (logs)	t-3		0.153*** -2.85				
Total Chinese Official Finance (logs)	t-4			0.163*** -3.05			
Chinese ODA-like flows (logs)	t-2				0.151*** -2.6		
Chinese ODA-like flows (logs)	t-3					0.163*** -2.7	
Chinese ODA-like flows (logs)	t-4						0.174*** -2.91
GDP recipient (logs)	0	0.05 -0.14	-0.175 (-0.44)	-0.355 (-0.92)	0.336 -0.84	0.165 -0.41	0.002 -0.01
population (logs)	0	-0.383 (-0.33)	-0.524 (-0.47)	-0.741 (-0.70)	-0.292 (-0.23)	-0.375 (-0.32)	-0.539 (-0.49)
UNSC membership	0	-0.287* (-1.84)	-0.235 (-1.35)	0.151 -0.88	-0.18 (-1.26)	-0.143 (-0.99)	0.022 -0.14
Observations		1830	1830	1830	1830	1830	1830
Countries		122	122	122	122	122	122
Kleibergen-Paap rk LM		12.8	12.75	13.92	11.95	12.65	14.13
K-P Chi-sq(1) P-val		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kleibergen-Paap rk F		15.3	14.81	15.67	14.71	15.03	15.85
R-squared (within)		-1.60	-2.19	-2.72	-1.72	-2.20	-2.71

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t -values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level.

Concerning the test statistics, the deployed interacted instrumental variable strategy performs well as can be seen at the bottom of Table 2. The null hypothesis of the Kleibergen-Paap rk LM statistic, which states that the equation is underidentified, can be rejected for all equations. The Kleibergen-Paap rk Wald F statistic measures weak instruments, with values varying between 14.81 and 15.85 which is well above the cut-off level of 10 suggested by Staiger and Stock (1994). It also passes the critical values test by Stock and Yogo (2005) at the maximum 15% level. Therefore, the regressions are unlikely to suffer from weak instruments bias.

Table 3 presets the test results for the effect of Chinese development finance on Western ODA into economic infrastructure projects. As outlined in the theoretical part, at least two

competing forces are at play here: Western donors want to increase aid allocations to counter the increase in Chinese funding in order not to lose political or economic favors with the recipient but at the same time prefer to retreat social infrastructure due to their competitive disadvantage in the infrastructure sector. Given that the coefficients in Table 3 are strictly positive, it can be concluded that the competitive forces outweigh the competitive disadvantage. However, the sectorial disadvantage exists, the coefficients in Table 3 are lower than in Table 2 for lags and types of flows. Hence, H2 can be confirmed. The difference is biggest for the two-year-lag for both flow types, the impact is close to zero and is not significant at the 10% level. A possible reason for this is that infrastructure projects require long-term planning from feasibility studies to detailed design concepts, which prolongs donor response times. For the three- and four-year-lag, the difference becomes relative minor but is still observable. It is worth noting that for infrastructure ODA the control variable for (logged) GDP per capita becomes positive and significant for all regressions. Western donors provide more infrastructure aid when a country is well-off. A possible explanation could be that while ODA loans are concessional, they still need to be paid back. Least-developed countries are thus much less able to take out large-scale infrastructure loans.³⁶ Appendix A.6 shows similar result by using Chinese projects instead of amounts for all results mentioned in this paragraph, confirming the robustness of the results.

³⁶ It also must be noted that the OECD data refers to total financing amounts which do not always accurately reflect generosity. If in a given year, country A receives a USD 1bn concessional loan with a grant element of USD 50m and country B receives a non-reimbursable grant of USD 100m, the dataset will state ODA financing to country A as 10 times higher than to country B. This likely distorts the results for the GDP per capita control variable because poor countries are more likely to receive grants than loans.

Table 3: Effects of Chinese aid amounts on Western Infrastructure ODA (2000-2014)

Independent Variables	Lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese Official Finance (logs)	t-2	0.0738 (1.58)					
Total Chinese Official Finance (logs)	t-3		0.142** (2.28)				
Total Chinese Official Finance (logs)	t-4			0.128** (2.35)			
Chinese ODA-like flows (logs)	t-2				0.0805 (1.52)		
Chinese ODA-like flows (logs)	t-3					0.151** (2.17)	
Chinese ODA-like flows (logs)	t-4						0.136** (2.25)
GDP recipient (logs)	0	1.114*** (3.01)	0.794* (1.92)	0.817** (2.16)	1.266*** (3.59)	1.110*** (2.80)	1.096*** (2.95)
population (logs)	0	1.593 (1.54)	0.941 (0.91)	0.935 (0.93)	1.641 (1.53)	1.079 (1.00)	1.094 (1.06)
UNSC membership	0	-0.0682 (-0.37)	-0.127 (-0.59)	0.211 (1.29)	-0.0113 (-0.07)	-0.0410 (-0.22)	0.110 (0.67)
Observations		1830	1830	1830	1830	1830	1830
Countries		122	122	122	122	122	122
Kleibergen-Paap rk LM		12.8	12.75	15.67	11.95	12.48	14.14
L-P Chi-sq(1) P-val		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kleibergen-Paap rk F		14.93	14.91	16.32	13.84	14.49	16.684
R-squared (within)		0.025	-0.512	-0.387	0.004	-0.543	-0.406

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level.

Tables 4 and 5 present results according to whether a country is considered free or not. For the reader's convenience, each flow type is listed in a separate table to allow the comparison of the difference according to the political freedom of a country within the same flow type. For both flow types and all lags, the effect of Chinese funding is stronger for authoritarian countries than for democratic ones. In other words, Western donors tend to react more strongly to increases in Chinese flows in authoritarian countries than in democratic ones. As can be seen in columns 1 to 3 of both tables, the impact of Chinese finance on Western ODA is almost irrelevant and expect for the three-year-lag also insignificant. On the other hand, a doubling in Chinese financing

increases Western ODA up to 32,4% after four years in authoritarian countries. Therefore, H3 has to be rejected.

A possible explanation could be that in line with the findings of Hernandez (2017), Western donors decrease their conditionality in the presence of Chinese funding, which increases recipient appetite in authoritarian countries but does not influence the demand in democratic ones. Another reason could be that Western donors see democratic countries as natural allies and therefore feel less threatened by increases in Chinese financing while assuming trying to compete financially over relationships with authoritarian ones. Finally, from an altruistic point of view, Western countries could try to counterbalance the presumed harmful impact of Chinese foreign aid by increase ODA flows.

Table 4: Effects of total Chinese aid amounts on Western ODA by freedom level (2000-2014)

Independent variables	lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese Official Finance (logs)	t-2	0.0785 (1.26)			0.175*** (2.67)		
Total Chinese Official Finance (logs)	t-3		0.0575* (1.77)			0.239** (2.15)	
Total Chinese Official Finance (logs)	t-4			0.0571 (1.50)			0.285** (2.22)
GDP recipient (logs)	0	0.515 (1.38)	0.556** (1.98)	0.331 (1.13)	0.0492 (0.15)	-0.446 (-0.78)	-0.605 (-1.02)
population (logs)	0	-1.708 (-1.40)	-1.582 (-1.64)	-1.596* (-1.72)	-0.935 (-1.00)	-1.462 (-1.23)	-2.071 (-1.54)
UNSC membership	0	-0.187 (-1.07)	-0.0971 (-0.91)	0.0291 (0.32)	-0.330 (-1.50)	-0.345 (-0.93)	0.475 (1.07)
Observations		695	704	707	1070	1064	1063
Countries		61	61	62	82	82	81
Freedom Index		Free	Free	Free	Not Free	Not Free	Not Free
Kleibergen-Paap rk LM		2.3	4.97	5.39	8.49	5.58	5.28
K-P Chi-sq(1) P-val		0.13	0.03	0.02	<0.01	0.02	0.02
Kleibergen-Paap rkF		2.57	6.13	6.77	9.53	5.95	5.62
R-squared		-1.039	-0.511	-0.477	-2.926	-6.654	-11.075

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level. Observations and country vary by lag because the Freedom Index variable is time-variant.

Table 5: Effects of Chinese ODA amounts on Western ODA by freedom level (2000-2014)

Independent variables	lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Chinese ODA-like flows (logs)	t-2	0.0622 (1.43)			0.214** (2.25)		
Chinese ODA-like flows (logs)	t-3		0.0570* (1.82)			0.259** (2.06)	
Chinese ODA-like flows (logs)	t-4			0.0554 (1.57)			0.324** (2.10)
GDP recipient (logs)	0	0.701** (2.28)	0.677** (2.37)	0.494* (1.85)	0.391 (1.00)	0.195 (0.44)	0.0777 (0.18)
population (logs)	0	-1.191 (-1.25)	-1.283 (-1.43)	-1.409* (-1.67)	-1.290 (-1.09)	-1.736 (-1.28)	-2.297 (-1.52)
UNSC membership	0	-0.0435 (-0.44)	-0.0170 (-0.19)	-0.107 (-0.99)	-0.330 (-1.25)	-0.351 (-0.98)	0.673 (1.51)
Observations		695	704	707	1070	1064	1063
Countries		61	61	62	82	82	81
Freedom Index		Free	Free	Free	Not Free	Not Free	Not Free
Kleibergen-Paap rk LM		3.7	5.54	6.02	6.73	5.59	5.26
K-P Chi-sq(1) P-val		0.05	0.02	0.01	<0.01	0.02	0.02
Kleibergen-Paap rk F		4.44	7.02	7.66	7.35	5.99	5.59
R-squared		-0.458	-0.386	-0.370	-4.237	-7.186	-12.977

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level. Observations and country vary by lag because the Freedom Index variable is time-variant.

It has to be noted that the results in table 4 and 5 are based on less observations than in the previous tables, which negatively impacts the quality of the instrumental variable regression. The regressions on democratic (free) countries are likely to suffer from weak instrument bias and for the two-year-lag also from underestimation. However, the findings become robust when using projects instead of amounts as can be seen in Appendices A.7 and A.8. The results are the same, the tables report a lower impact for democracies and a stronger impact for authoritarian regimes. In addition to more robust results for the weak instruments and underestimation indicator statistics for all regressions, the effect for democracies becomes significant on every lag level.

7 Conclusions

Between 2000 and 2014, China has risen into the ranks of the largest global development financiers. Its rise has led to a great amount of speculation about its motivations, methods and impact, but so far only to limited empirical analysis. In this thesis, I have sought to address one of the many unanswered questions: How has China's rise as a foreign aid provider impacted the aid allocation of OECD-DAC members?

My results show that competition forces dominate the relationship between China and Western donors in similar ways than the relationship between Western donors. Relying on an identification strategy first proposed by Nunn and Qian (2014) and further developed by Dreher et al. (2017), I demonstrate that, contrary to common belief, Western donors respond to an increase in Chinese financing with increased aid allocations. Further, my results show that the effect is weaker for ODA flows in economic infrastructure projects, suggesting that crowding-out forces exit in sectors with a distinctive Chinese comparative advantage but are outweighed by competition forces. Contrary to my hypothesis, the crowding-in effect of Chinese financing is stronger in authoritarian regimes than in democracies.

The results of my thesis come with several limitations. First, any analysis is only as good as the underlying data. By using the AidData's Global Chinese Official Finance Dataset, I deployed the best available data set for Chinese foreign aid, which nevertheless has notable limitations. Its media approach is unlikely to discover all projects, which creates the risks of biases in the collection of data. A substantial proportion of project records lack information about the financial amounts committed. I test all hypotheses on both amounts and projects, but the results can still be biased if certain flows are particularly likely to be reported without amounts. The OECD countries and its development institutions publish official data, without distinction between grant and loans. Using this data allows to analyze the financing flows which are not in all cases tantamount to the generosity a recipient country receives. Second, my empirical analysis focuses exclusively on financial flows. Foreign aid is only one out of many foreign policy tools that countries deploy in the arena of international affairs. If donors react through other tools than aid, this remains unobserved. Third, my analysis only observes the outcomes of the effects but only scratches on the surface of the channels through which these effects work. Further research, both qualitative and quantitative, is needed to fully understand the way in which donors react to each other's decisions.

The rise of China is upending the existing order in the international development landscape and beyond. My thesis and similar studies by Kilama (2015), Swedlung (2017), and Humphrey and Michaelowa (2019) have demonstrated the widespread belief and fear of China crowding-out Western development assistance in developing countries is unfounded. This should act as a reminder for the importance to remain diligent, prudent and cautious in future analyses of a rising China. As we enter an age of increased Chinese global influence, policymakers, researchers, practitioners and the interested public are well-advised to avoid drawing premature conclusion.

8 Bibliography

- Abrams, B. A., & Lewis, K. A. (1993). Human rights and the distribution of US foreign aid. *Public Choice*, 77(4), 815–821.
- Acht, M., Mahmoud, T. O., & Thiele, R. (2015). Corrupt governments do not receive more state-to-state aid: Governance and the delivery of foreign aid through non-state actors. *Journal of Development Economics*, 114, 20–33.
- Ahmed, F. Z. (2016). Does foreign aid harm political rights? Evidence from US aid. *Quarterly Journal of Political Science*, 11(2), 183–217.
- Alesina, A., & Dollar, D. (2000). Who gives foreign aid to whom and why? *Journal of Economic Growth*, 5(1), 33–63.
- Alesina, A., & Weder, B. (2002). Do corrupt governments receive less foreign aid? *American Economic Review*, 92(4), 1126–1137.
- Anders, M. (2020). Donors claim they are untying more aid, but critics call for broader definition. *Devex*. <https://www.devex.com/news/donors-claim-they-are-untying-more-aid-but-critics-call-for-broader-definition-92964> accessed on November 20, 2020
- Angrist, J. D., & Imbens, G. W. (1995). Identification and estimation of local average treatment effects. *National Bureau of Economic Research*.
- Asche, H. (2018). What’s behind China’s “non-interference” in Africa? *Deutsche Welle*. <https://www.dw.com/en/whats-behind-chinas-non-interference-in-africa/a-45333266> accessed on October 12, 2020.
- Autor, D. H., Dorn, D., & Hanson, G. H. (2016). The China shock: Learning from labor-market adjustment to large changes in trade. *Annual Review of Economics*, 8, 205–240.
- Bali, S. (2020). Soft-Power Diplomacy of China in Third World Countries in The Times of COVID-19. *Diplomatist*. <https://diplomatist.com/2020/04/21/soft-power-diplomacy-of-china-in-third-world-countries-in-the-times-of-covid-19/> accessed on December 1, 2020.
- Barthel, F. (2013). Exploring spatial dependence in bi-and multilateral aid giving patterns. URL Http://S3.Amazonaws.Com/Aiddata/Barthel_aiddata.Pdf.
- Baydag, R. M., Klingebiel, S., & Marschall, P. (2018). *Shaping the patterns of aid allocation: A comparative analysis of seven bilateral donors and the European Union* (Issue 22/2018). Discussion Paper.
- BBC. (2020). *Sudan-Israel relations agreed, Donald Trump announces*. <https://www.bbc.com/news/world-africa-54554286> accessed on October 30, 2020.
- Berthélemy, J.-C. (2006). Bilateral donors’ interest vs. Recipients’ development motives in aid allocation: Do all donors behave the same? *Review of Development Economics*, 10(2), 179–194.
- Berthélemy, J.-C., & Tichit, A. (2004). Bilateral donors’ aid allocation decisions—A three-dimensional panel analysis. *International Review of Economics & Finance*, 13(3), 253–274.
- Birdsall, N., & Moss, T. (2006). Nigerian Debt Relief. *Center for Global Development*. <https://www.cgdev.org/topics/nigerian-debt->

relief#:~:text=In%20October%202005%2C%20Nigeria%20and,of%20any%20Paris%20Club%20debt. accessed on December 3, 2020.

Bluhm, R., Dreher, A., Fuchs, A., Parks, B., Strange, A., & Tierney, M. J. (2018). *Connective financing: Chinese infrastructure projects and the diffusion of economic activity in developing countries*.

Boschini, A., & Olofsgård, A. (2007). Foreign aid: An instrument for fighting communism? *The Journal of Development Studies*, 43(4), 622–648.

Bräutigam, D. (2011). Aid ‘with Chinese characteristics’: Chinese foreign aid and development finance meet the OECD-DAC aid regime. *Journal of International Development*, 23(5), 752–764.

Brautigam, D. (2011). *The dragon’s gift: The real story of China in Africa*. OUP Oxford.

Brautigam, D. (2020). A critical look at Chinese ‘debt-trap diplomacy’: The rise of a meme. *Area Development and Policy*, 5(1), 1–14.

Brazys, S., & Vadlamannati, K. C. (2020). Aid curse with Chinese characteristics? Chinese development flows and economic reforms. *Public Choice*, 1–24.

Broich, T. (2017). Do authoritarian regimes receive more Chinese development finance than democratic ones? Empirical evidence for Africa. *China Economic Review*, 46, 180–207.

Broich, T., Szirmai, A., & Adedokun, A. (2020). Chinese and Western Development Approaches in Africa: Implications for the SDGs. In *Africa and the Sustainable Development Goals* (pp. 33–48). Springer.

Bun, M. J., & Harrison, T. D. (2019). OLS and IV estimation of regression models including endogenous interaction terms. *Econometric Reviews*, 38(7), 814–827.

Canavire, G., Nunnenkamp, P., Thiele, R., & Triveño, L. (2006). Assessing the allocation of aid: Developmental concerns and the self-interest of donors. *The Indian Economic Journal*, 54(1), 26–51.

Cha, S. (2020). *Does Foreign Aid Raise Awareness of Corruption? Evidence from Chinese Aid in 30 African States*.

Chellaney, B. (2017). China’s Debt-Trap Diplomacy. *Project Syndicate*. <https://www.project-syndicate.org/commentary/china-one-belt-one-road-loans-debt-by-brahma-chellaney-2017-01?barrier=accesspaylog> accessed on September 27, 2020.

Chen, C., & Orr, R. J. (2009). Chinese contractors in Africa: Home government support, coordination mechanisms, and market entry strategies. *Journal of Construction Engineering and Management*, 135(11), 1201–1210.

Cheng, C. (2019). The Logic Behind China’s Foreign Aid Agency. *Carnegie-Tsinghua Center for Global Policy*. <https://carnegietsinghua.org/2019/05/21/logic-behind-china-s-foreign-aid-agency-pub-79154> accessed on October 1, 2020.

Civelli, A., Horowitz, A. W., & Teixeira, A. (2016). A Signal of Altruistic Motivation for Foreign Aid. *The BE Journal of Economic Analysis & Policy*, 16(4).

Copper, J. F. (2016). *China’s foreign aid and investment diplomacy, volume III: Strategy beyond asia and challenges to the United States and the international order*. Springer.

Cordella, T., & Ulku, H. (2007). Grants vs. Loans. *IMF Staff Papers*, 54(1), 139–162.

- Couharde, C., Karanfil, F., Kilama, E. G., & Omgba, L. D. (2020). The role of oil in the allocation of foreign aid: The case of the G7 donors. *Journal of Comparative Economics*, 48(2), 363–383.
- Dang, H.-A., Knack, S., & Rogers, F. H. (2013). International aid and financial crises in donor countries. *European Journal of Political Economy*, 32, 232–250.
- David, H., Dorn, D., & Hanson, G. H. (2013). The China syndrome: Local labor market effects of import competition in the United States. *American Economic Review*, 103(6), 2121–2168.
- Davies, M., Edinger, H., Tay, N., & Naidu, S. (2008). *How China Delivers Development Assistance to Africa* (Centre for Chinese Studies, University of Stellenbosch).
- Davies, P. (2007). *China and the end of poverty in Africa: Towards mutual benefit?* Diakonia Sundbyberg.
- Davies, R. B., & Klasen, S. (2019). Darlings and orphans: Interactions across donors in international aid. *The Scandinavian Journal of Economics*, 121(1), 243–277.
- De Mesquita, B. B., & Smith, A. (2009). A political economy of aid. *International Organization*, 309–340.
- de Soyres, F., Mulabdic, A., Ruta, M., Rotunno, L., Vézina, P.-L., Wang, Z., Dreher, A., & Fuchs, A. (2019). *Political bias and the economic impact of Chinese aid*. This instrument helps separate the effect of Chinese aid allocations from potential global or non-Chinese dynamics affecting development investment in recipient countries.
- Der Spiegel. (2015). *Afrikaner sollen bei der Feststellung der Identität von Migranten helfen*. <https://www.spiegel.de/spiegel/vorab/afrikaner-sollen-identitaet-von-migranten-feststellen-a-1061441.html> accessed on November 5, 2020.
- Dollar, D., & Levin, V. (2004). The increasing selectivity of foreign aid, 1984–2002. *The World Bank*.
- Doucouliaagos, H. (2019). The politics of international aid. In *The Oxford Handbook of Public Choice, Volume 2*.
- Dreher, A., & Fuchs, A. (2011). Rogue aid? The determinants of China's aid allocation. *The Determinants of China's Aid Allocation. Courant Research Centre Discussion Paper*, 93.
- Dreher, A., & Fuchs, A. (2015). Rogue aid? An empirical analysis of China's aid allocation. *Canadian Journal of Economics/Revue Canadienne d'économique*, 48(3), 988–1023.
- Dreher, A., Fuchs, A., Hodler, R., Parks, B., Raschky, P., & Tierney, M. J. (2016). Aid on demand: African leaders and the geography of China's foreign assistance. *Centro Studi Luca d'Agliano Development Studies Working Paper*, 400.
- Dreher, A., Fuchs, A., Hodler, R., Parks, B., Raschky, P., & Tierney, M. J. (2019). *Is favoritism a threat to Chinese aid effectiveness? A subnational analysis of Chinese development projects*.
- Dreher, A., Fuchs, A., Parks, B., Strange, A. M., & Tierney, M. J. (2017). *Aid, China, and Growth: Evidence from a New Global Development Finance Dataset. AidData Working Paper #46*. AidData.
- Dreher, A., Fuchs, A., Parks, B., Strange, A. M., & Tierney, M. J. (2018). Apples and Dragon Fruits: The Determinants of Aid and Other Forms of State Financing from China to Africa. *International Studies Quarterly*, 62, 192–194.

- Dreher, A., & Matzat, J. (2020). *Chinese Aid and Health at the Country and Local Level*. CESifo.
- Dreher, A., Nunnenkamp, P., & Thiele, R. (2011). Are ‘new’ donors different? Comparing the allocation of bilateral aid between nonDAC and DAC donor countries. *World Development*, 39(11), 1950–1968.
- Duke, S. (2011). China’s global reach: Lending more than the World Bank. *BBC*. <https://www.bbc.com/news/business-16092634> accessed on August 29, 2020.
- Easterly, W., & Williamson, C. R. (2011). Rhetoric versus reality: The best and worst of aid agency practices. *World Development*, 39(11), 1930–1949.
- Elgström, O., & Delputte, S. (2016). An end to Nordic exceptionalism? Europeanisation and Nordic development policies. *European Politics and Society*, 17(1), 28–41.
- Faust, J., & Ziaja, S. (2012). *German aid allocation and partner country selection: Development-orientation, self-interests and path dependency* (Issue 7/2012). Discussion Paper.
- Freedom House. (2020). *Freedom in the World*. <https://freedomhouse.org/report/freedom-world> accessed on December 2, 2020.
- Fuchs, A., Nunnenkamp, P., & Öhler, H. (2015). Why donors of foreign aid do not coordinate: The role of competition for export markets and political support. *The World Economy*, 38(2), 255–285.
- Fuchs, A., & Rudyak, M. (2019). The motives of China’s foreign aid. In *Handbook on the International Political Economy of China*. Edward Elgar Publishing.
- Gallagher, K. (2017, March 27). China’s influence on global finance grows as US scales back input. *Financial Times*. <https://www.ft.com/content/16edc70e-10b9-11e7-b030-768954394623> accessed on November 7, 2020.
- Gallagher, K., Kamal, R., Wang, Y., & Chen, Y. (2016). *Fueling Growth and Financing Risk: The benefits and risks of China’s development finance in the global energy sector*.
- Gates, S., & Hoeffler, A. (2004). *Global aid allocation: Are Nordic donors different?*
- Girod, D. M. (2012). Effective Foreign Aid Following Civil War: The Nonstrategic-Desperation Hypothesis. *American Journal of Political Science*, 56(1), 188–201.
- Goldsmith-Pinkham, P., Sorkin, I., & Swift, H. (2018). *Bartik instruments: What, when, why, and how*. National Bureau of Economic Research.
- Hernandez, D. (2017). Are “new” donors challenging world bank conditionality? *World Development*, 96, 529–549.
- Hodler, R. (2016). Why African leaders like Chinese aid. *World Finance*.
- Hoeffler, A., & Outram, V. (2011). Need, merit, or self-interest—What determines the allocation of aid? *Review of Development Economics*, 15(2), 237–250.
- Hudson, J. (2013). Promises kept, promises broken? The relationship between aid commitments and disbursements. *Review of Development Finance*, 3(3), 109–120.

- Humphrey, C., & Michaelowa, K. (2019). China in Africa: Competition for traditional development finance institutions? *World Development*, 120, 15–28.
- Jones, L., & Hameiri, S. (2020). *Debunking the Myth of 'Debt-trap Diplomacy'*. Chatham House.
- Kersting, E., & Kilby, C. (2014). Aid and democracy redux. *European Economic Review*, 67, 125–143.
- Khomba, D. C., & Trew, A. (2019). *Aid and growth in Malawi*.
- Kilama, E. G. (2015). Evidences on donors competition in Africa: Traditional donors versus China. *Journal of International Development*, 28(4), 528–551.
- Kitano, N., & Harada, Y. (2016). Estimating China's foreign aid 2001–2013. *Journal of International Development*, 28(7), 1050–1074.
- Klingebiel, S. (2013). *Development cooperation: Challenges of the new aid architecture*. Springer.
- Knack, S. (2004). Does foreign aid promote democracy? *International Studies Quarterly*, 48(1), 251–266.
- Koch, S. (2015). A typology of political conditionality beyond aid: Conceptual horizons based on lessons from the European Union. *World Development*, 75, 97–108.
- Kuziemko, I., & Werker, E. (2006). How much is a seat on the Security Council worth? Foreign aid and bribery at the United Nations. *Journal of Political Economy*, 114(5), 905–930.
- Li, X. (2017). Does conditionality still work? China's development assistance and democracy in Africa. *Chinese Political Science Review*, 2(2), 201–220.
- Lumsdaine, D., & Schopf, J. C. (2007). Changing values and the recent rise in Korean development assistance. *The Pacific Review*, 20(2), 221–255.
- Lyman, P. N. (2005). *China's rising role in Africa*. Council on Foreign Relations.
- Lynch, L., Andersen, S., & Zhu, T. (2020). *China's Foreign Aid: A Primer for Recipient Countries, Donors, and Aid Providers*. Center for Global Development.
<https://www.cgdev.org/publication/chinas-foreign-aid-primer-recipient-countries-donors-and-aid-providers>
- Maizels, A., & Nissanke, M. K. (1984). Motivations for aid to developing countries. *World Development*, 12(9), 879–900.
- Martorano, B., Metzger, L., & Sanfilippo, M. (2020). Chinese development assistance and household welfare in sub-Saharan Africa. *World Development*, 129, 104909.
- Mascarenhas, R., & Sandler, T. (2006). Do donors cooperatively fund foreign aid? *The Review of International Organizations*, 1(4), 337–357.
- McGillivray, M. (2006). Aid allocation and fragile states. *Fragile States: Causes, Costs and Responses*, 166–184.
- Milner, H. V., & Tingley, D. H. (2010). The political economy of US foreign aid: American legislators and the domestic politics of aid. *Economics & Politics*, 22(2), 200–232.

- Mishra, P., & Newhouse, D. L. (2007). Health aid and infant mortality. *IMF Working Papers*, 1–40.
- Morgenthau, H. (1962). A political theory of foreign aid. *The American Political Science Review*, 56(2), 301–309.
- Náim, M. (2007). Rouge Aid. *Foreign Policy*. <https://foreignpolicy.com/2009/10/15/rogue-aid/>
- Nizalova, O. Y., & Murtazashvili, I. (2016). Exogenous treatment and endogenous factors: Vanishing of omitted variable bias on the interaction term. *Journal of Econometric Methods*, 5(1), 71–77.
- Nunn, N., & Qian, N. (2014). US food aid and civil conflict. *American Economic Review*, 104(6), 1630–1666.
- OECD. (2006). *OECD Journal on Development. Development Co-operation Report 2005*. OECD Paris.
- OECD. (2018). *2018 REPORT ON THE DAC UNTYING RECOMMENDATION*. [https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DCD-DAC\(2018\)12-REV2.en.pdf](https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DCD-DAC(2018)12-REV2.en.pdf) accessed on November 12, 2020.
- OECD. (2019). *Official Development Assistance*. <http://www.oecd.org/dac/stats/What-is-ODA.pdf> accessed on May 6, 2020.
- Olson, S. (2020, September 30). Are Private Chinese Companies Really Private? *The Diplomat*. <https://thediplomat.com/2020/09/are-private-chinese-companies-really-private/> accessed on November 11, 2020.
- Pace, M. (2015, March 20). *The Politics of Foreign Aid in the Arab World: The Impact of the Arab Uprisings*. <https://blogs.lse.ac.uk/mec/2015/03/20/the-politics-of-foreign-aid-in-the-arab-world-the-impact-of-the-arab-uprisings/> accessed on November 28, 2020.
- Petras, R. (2009). Comparative study of data reported to the OECD creditor reporting system (CRS) and to the Aid Management Platform (AMP). *Development Gateway*.
- Pietschmann, E. (2016). Fragmentation's Losers: Who Are the Aid Orphans? In *The Fragmentation of Aid* (pp. 79–91). Springer.
- Polachek, S. W. (1997). Why democracies cooperate more and fight less: The relationship between international trade and cooperation. *Review of International Economics*, 5(3), 295–309.
- Powell, A., & Bobba, M. (2006). *Multilateral intermediation of foreign aid: What is the trade-off for donor countries?* Working Paper.
- Pronk, J. P. (2001). Aid as a Catalyst. *Development and Change*, 32(4), 611–629.
- Radelet, S. (2006). A primer on foreign aid. *Available at SSRN 983122*.
- Reinhardt, G. Y. (2006). Shortcuts and Signals: An Analysis of the Micro-level Determinants of Aid Allocation, with Case Study Evidence from Brazil. *Review of Development Economics*, 10(2), 297–312.
- Reuters. (2020, March 13). *China sends medical supplies, experts to help Italy battle coronavirus*. <https://www.reuters.com/article/us-health-coronavirus-italy-respirators-idUSKBN2101IM> accessed on November 29, 2020.

- Rinke, A. (2009). *Ruandas Präsident: „China gibt, was Afrika braucht“* [Handelsblatt]. <https://www.handelsblatt.com/politik/international/paul-kagame-ruandas-praesident-china-gibt-was-afrika-braucht/3278216.html?ticket=ST-4909395-BfcGpVdUXXRoqm4MUs7P-ap6> accessed on November 14, 2020.
- Rodella-Boitreau, A.-S., & Wagner, N. (2011). *'Natural' disaster, conflict and aid allocation*. Graduate Institute of International and Development Studies Working Paper.
- Rotberg, R. I. (2009). China into Africa: Trade, aid, and influence. *Brookings Institution Press*.
- Santiso, J., & Frot, E. (2013). Crushed aid: Why is fragmentation a problem for international aid. *VoxEU. Org*.
- Sanusi, L. (2013). Africa must get real about Chinese ties. *Financial Times*. <https://www.ft.com/content/562692b0-898c-11e2-ad3f-00144feabdc0> accessed on November 1, 2020.
- Sautman, B., & Hairong, Y. (2019). *The “Chinese Debt Trap” and its Sri Lanka Example*. HKUST Institute for Emerging Market Studies.
- Schraeder, P. J., Hook, S. W., & Taylor, B. (1998). Clarifying the foreign aid puzzle: A comparison of American, Japanese, French, and Swedish aid flows. *World Politics*, 294–323.
- Scott, J. M., & Steele, C. A. (2011). Sponsoring democracy: The United States and democracy aid to the developing world, 1988–2001. *International Studies Quarterly*, 55(1), 47–69.
- Selbervik, H., & Nygaard, K. (2006). *Nordic Exceptionalism in Development Assistance? Aid Policies and the Major Donors: The Nordic Countries*. Chr. Michelsen Institute.
- Singh, A. (2020). The myth of ‘debt-trap diplomacy’ and realities of Chinese development finance. *Third World Quarterly*, 1–15.
- Soulé-Kohndou, F. (2018). Bureaucratic Agency and Power Asymmetry in Benin-China Relations. In *New Directions in Africa-China Studies* (pp. 189–204). Routledge.
- Spegele, B., & Miller, J. W. (2016). China Continues to Prop Up Its Ailing Factories, Adding to Global Glut. *Wall Street Journal*, 9.
- Staiger, D., & Stock, J. H. (1994). *Instrumental variables regression with weak instruments* (No. 0898–2937). National Bureau of Economic Research.
- Stock, J. H., & Yogo, M. (2005). Testing for weak instruments in Linear Iv regression. In *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg* (pp. 80–108). Cambridge University Press.
- State Council Information Office. (2011). *White Paper on China’s Foreign Aid*. <https://www.asienhaus.de/upload/pdf/nachrichten/2011-04-21Chinas-ForeignAid-WhitePaper.pdf> accessed on June 1, 2020.
- Strange, A. M., Dreher, A., Fuchs, A., Parks, B., & Tierney, M. J. (2017). Tracking underreported financial flows: China’s development finance and the aid–conflict nexus revisited. *Journal of Conflict Resolution*, 61(5), 935–963.

- Strange, A. M., Parks, B., Tierney, M. J., Fuchs, A., Dreher, A., & Ramachandran, V. (2013). *China's Development Finance to Africa: A Media-Based Approach to Data Collection*. Center for Global Development.
- Stratfor. (2016). *The Story of Steel in China*. <https://worldview.stratfor.com/article/story-steel-china> accessed on September 5, 2020.
- Swedlund, H. J. (2017). Is China eroding the bargaining power of traditional donors in Africa? *International Affairs*, 93(2), 389–408.
- Tezanos Vázquez, S. (2008). *The Spanish pattern of aid giving* (Vol. 2008, Issue 04). Instituto Complutense de Estudios Internacionales (ICEI).
- The Economist. (2010). *The Beijing consensus is to keep quiet*. https://www.economist.com/node/16059990/print?story_id=16059990 accessed on December 1, 2020.
- Tierney, M. J., Nielson, D. L., Hawkins, D. G., Roberts, J. T., Findley, M. G., Powers, R. M., Parks, B., Wilson, S. E., & Hicks, R. L. (2011). More dollars than sense: Refining our knowledge of development finance using AidData. *World Development*, 39(11), 1891–1906.
- Trumbull, W. N., & Wall, H. J. (1994). Estimating aid-allocation criteria with panel data. *The Economic Journal*, 104(425), 876–882.
- UNCTAD. (2017). World Investment Report. *Geneva: United Nations Publication*. <https://unctad.org/webflyer/world-investment-report-2017> accessed on December 2, 2020.
- UNDP. (1992). *Human Development Report 1992*. United Nations Development Program. http://hdr.undp.org/sites/default/files/reports/221/hdr_1992_en_complete_nostats.pdf accessed on November 8, 2020.
- Verdier, D. (2008). Multilateralism, bilateralism, and exclusion in the nuclear proliferation regime. *International Organization*, 439–476.
- Vreeland, J. R., & Dreher, A. (2014). *The political economy of the United Nations Security Council: Money and influence*. Cambridge University Press.
- Wako, H. A. (2018). Aid, institutions and economic growth in sub-Saharan Africa: Heterogeneous donors and heterogeneous responses. *Review of Development Economics*, 22(1), 23–44.
- Wang, T.-Y. (1999). US foreign aid and UN voting: An analysis of important issues. *International Studies Quarterly*, 43(1), 199–210.
- Weerakoon, D., & Jayasuriya, S. (2019). Debt Financing for Development: The Sri Lankan Experience. In *Managing Domestic and International Challenges and Opportunities in Post-conflict Development* (pp. 95–112). Springer.
- Welle-Strand, A., & Kjøllesdal, K. (2010). *Foreign aid strategies: China taking over?*
- Winters, M. S., & Martinez, G. (2015). The role of governance in determining foreign aid flow composition. *World Development*, 66, 516–531.
- Woods, N. (2008). Whose aid? Whose influence? China, emerging donors and the silent revolution in development assistance. *International Affairs*, 84(6), 1205–1221.

World Bank. (2020). *World Development Indicators*. <https://databank.worldbank.org/source/world-development-indicators> accessed on August 29, 2020.

Wright, J. (2009). How foreign aid can foster democratization in authoritarian regimes. *American Journal of Political Science*, 53(3), 552–571.

Zhang, Y., Gu, J., & Chen, Y. (2015). *China's engagement in international development cooperation: The State of the Debate*. IDS.

9 Appendix

Tables

Table A.1: Correlation Chinese steel production with GDP growth (2000-2015)

	Corr.	p	Obs
Greece	-0.6715	0.00612	15
Spain	-0.50563	0.054502	15
Korea, Rep.	-0.48635	0.066018	15
Slovenia	-0.39198	0.148455	15
Finland	-0.38286	0.158971	15
Italy	-0.33956	0.215635	15
New Zealand	-0.31567	0.251747	15
Australia	-0.31311	0.255819	15
Hungary	-0.30869	0.262956	15
Canada	-0.29954	0.278086	15
Slovak Republic	-0.29939	0.278339	15
Portugal	-0.29115	0.292429	15
Czech Republic	-0.28513	0.302963	15
France	-0.25791	0.353377	15
Austria	-0.251	0.366879	15
United Kingdom	-0.20453	0.464649	15
Iceland	-0.19627	0.483266	15
Ireland	0.184998	0.509209	15
Norway	-0.18077	0.519107	15
Belgium	-0.18003	0.520853	15
Netherlands	-0.16745	0.550826	15
Germany	0.150672	0.591959	15
OECD	-0.10018	0.722426	15
United States	-0.07027	0.803466	15
Poland	-0.05255	0.85244	15
Sweden	-0.04478	0.874078	15

Switzerland	0.040794	0.885228	15
Denmark	-0.02492	0.929754	15
Luxembourg	-0.02436	0.931317	15
Japan	-0.00963	0.972817	15

Note: One-year-lag.

Table A.2: Effects of Chinese aid projects on Western ODA (2000-2014)

Independent Variables	Lag	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
Total Chinese aid projects	t-2	0.017 (1.49)					
Total Chinese aid projects	t-3		0.014 (1.27)				
Total Chinese aid projects	t-4			0.015 (1.52)			
Chinese ODA projects	t-2				0.026* (1.79)		
Chinese ODA projects	t-3					0.024* (1.74)	
Chinese ODA projects	t-4						0.023* (1.86)
GDP recipient (logs)	0	0.483 (1.16)	0.344 (0.81)	0.175 (0.42)	0.493 (1.20)	0.351 (0.84)	0.182 (0.44)
population (logs)	0	1.032 (0.94)	1.046 (0.96)	1.006 (0.98)	1.000 (0.92)	1.005 (0.93)	0.983 (0.96)
UNSC membership	0	0.014 (0.21)	-0.002 (-0.04)	-0.001 (-0.01)	0.01 (0.15)	-0.009 (-0.14)	-0.003 (-0.06)
Observations		1830	1830	1830	1830	1830	1830
Countries		122	122	122	122	122	122
R-squared		0.076	0.058	0.038	0.077	0.059	0.039

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level.

Table A.3 Effects of Chinese aid projects on Western ODA (2000-2014)

Independent Variables	Lag	(1) 2SLSL	(2) 2SLSL	(3) 2SLSL	(4) 2SLSL	(5) 2SLSL	(6) 2SLSL
Total Chinese Projects	t-2	0.304*** (3.30)					
Total Chinese Projects	t-3		0.338*** (3.18)				
Total Chinese Projects	t-4			0.390*** (3.26)			
Chinese ODA-like projects	t-2				0.420*** (3.15)		
Chinese ODA-like projects	t-3					0.459*** (3.10)	
Chinese ODA-like projects	t-4						0.562*** (3.23)
GDP recipient (logs)	0	0.0620 (0.17)	-0.168 (-0.42)	-0.468 (-1.06)	0.264 (0.72)	0.065 (0.17)	-0.274 (-0.66)
population (logs)	0	-0.593 (-0.47)	-0.768 (-0.63)	-1.083 (-0.92)	-0.998 (-0.73)	-1.156 (-0.88)	-1.572 (-1.22)
UNSC membership	0	-0.0480 (-0.32)	-0.127 (-0.61)	0.195 (1.46)	-0.107 (-0.80)	-0.214 (-1.17)	0.115 (1.05)
Observations		1830	1830	1830	1830	1830	1830
Countries		122	122	122	122	122	122
Kleibergen-Paap rk LM		22.48	23.31	23.11	21.65	22.48	21.58
L-P Chi-sq(1) P-val		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00
Kleibergen-Paap rk F		30.34	29.06	26.67	26.93	26.65	21.44
R-squared (within)		-0.757	-1.118	-1.640	-0.851	-1.191	-2.012

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t -values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level.

Table A.4 Effects of Chinese aid projects on Western ODA including FDI (2SLS)

Independent variables	lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese Official Finance (logs)	t-2	0.142** (2.08)					
Total Chinese Official Finance (logs)	t-3		0.181* (1.91)				
Total Chinese Official Finance (logs)	t-4			0.250* (1.73)			
Chinese ODA-like flows (logs)	t-2				0.125** (2.36)		
Chinese ODA-like flows (logs)	t-3					0.140** (2.43)	
Chinese ODA-like flows (logs)	t-4						0.198** (2.21)
Interacted Chinese FDI (logs)	t-3	0.00344 (0.01)			0.289 (0.87)		
Interacted Chinese FDI (logs)	t-4		-0.200 (-0.33)			0.217 (0.64)	
Interacted Chinese FDI (logs)	t-5			-0.817 (-0.77)			-0.279 (-0.50)
GDP recipient (logs)	0	0.001 (0.00)	-0.367 (-0.82)	-0.242 (-0.48)	0.190 (0.44)	-0.025 (-0.05)	0.063 (0.13)
population (logs)	0	-0.660 (-0.48)	-0.752 (-0.50)	-1.646 (-0.82)	-0.668 (-0.45)	-0.558 (-0.36)	-0.886 (-0.52)
UNSC membership	0	-0.196 (-1.14)	-0.303 (-1.09)	0.244 (0.86)	-0.04 (-0.35)	-0.051 (-0.33)	0.008 (0.05)
Observations		1708	1586	1464	1708	1586	1464
Kleibergen-Paap rk LM		5.52	4.39	3.56	7.86	8.42	6.76
K-P Chi-sq(1) P-val		0.02	0.04	0.06			<0.01
Kleibergen-Paap rk F		5.68	4.66	3.72	8.56	9.24	7.26
R-squared		-1.742	-3.286	-7.200	-1.187	-1.721	-3.966

Notes: Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level. Differences in observations between the regressions stems from of availability of FDI data in certain countries and years.

Table A.5 Effects of Chinese aid projects on Western ODA (2000-2014)

Independent variables	Lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS
Total Chinese Official Finance (logs)	t-1	0.290* (1.85)			
Total Chinese Official Finance (logs)	t-5		0.104** (2.56)		
Chinese ODA-like flows (logs)	t-1			0.195** (2.33)	
Chinese ODA-like flows (logs)	t-5				0.110** (2.51)
GDP recipient (logs)	0	-0.363 (-0.63)	-0.347 (-0.76)	0.258 (0.58)	-0.116 (-0.26)
population (logs)	0	-1.654 (-0.85)	-0.361 (-0.36)	-0.892 (-0.53)	-0.110 (-0.11)
UNSC membership	0	0.146 (0.51)	-0.0200 (-0.20)	-0.108 (-0.63)	-0.0945 (-0.86)
Observations		1708	1708	1708	1708
Countries		122	122	122	122
Kleibergen-Paap rk LM		3.45	12.76	9.916	13.21
K-P Chi-sq(1) P-val		0.06	<0.01	<0.01	<0.01
Kleibergen-Paap rk F		3.739	15.17	11.57	15.61
R-squared		-7.683	-1.184	-3.064	-1.183

Notes. Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t -values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level. Regressions with lag t-1 have observations from year 2000 excluded and regressions with lag t-5 have observations from year 2014 excluded.

Table A.6: Effects of Chinese aid projects on Western Infrastructure ODA (2000-2014)

	Lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese aid project	t-2	0.162 (1.61)					
Total Chinese aid projects	t-3		0.314** (2.54)				
Total Chinese aid projects	t-4			0.305** (2.53)			
Chinese ODA projects	t-2				0.223 (1.59)		
Chinese ODA projects	t-3					0.427** (2.43)	
Chinese ODA projects	t-4						0.439** (2.46)
GDP recipient (logs)	0	1.120*** (2.94)	0.800* (1.86)	0.729 (1.64)	1.228*** (3.44)	1.017** (2.57)	0.880** (2.11)
population (logs)	0	1.481 (1.35)	0.714 (0.66)	0.667 (0.65)	1.266 (1.08)	0.352 (0.29)	0.285 (0.25)
UNSC membership	0	0.0587 (0.39)	-0.0260 (-0.11)	0.245 (1.60)	0.0271 (0.18)	-0.107 (-0.50)	0.183 (1.30)
Observations		1830	1830	1830	1830	1830	1830
Countries		122	122	122	122	122	122
Kleibergen-Paap rk LM		22.48	23.31	26.66	21.65	22.48	21.59
L-P Chi-sq(1) P-val		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kleibergen-Paap rk F		34.93	35.48	33.18	33.66	34.52	31.1
R-squared		0.099	-0.165	-0.149	0.088	-0.200	-0.248

Notes. Dependent variable is the (logged) amount of OECD-DAC ODA disbursements in economic infrastructure project to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level.

**Table A.7: Effects of total Chinese aid projects on Western ODA by freedom level
(2000-2014)**

Independent variable	lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese Official Finance (logs)	t-2	0.152** (2.13)			0.373*** (2.97)		
Total Chinese Official Finance (logs)	t-3		0.161** (2.36)			0.458** (2.57)	
Total Chinese Official Finance (logs)	t-4			0.156* (1.78)			0.571** (2.54)
GDP recipient (logs)	0	0.538* (1.85)	0.445 (1.63)	0.235 (0.82)	0.082 (0.24)	-0.219 (-0.46)	-0.589 (-1.04)
population (logs)	0	-1.267 (-1.58)	-1.308 (-1.64)	-1.317* (-1.80)	-1.408 (-1.16)	-1.814 (-1.30)	-2.420 (-1.47)
UNSC membership	0	-0.059 (-0.77)	-0.099 (-1.12)	0.028 (0.38)	-0.001 (-0.00)	-0.088 (-0.20)	0.501* (1.65)
Observations		695	704	707	1070	1064	1063
Countries		61	61	62	82	82	81
Freedom Index		Free	Free	Free	Not Free	Not Free	Not Free
Kleibergen-Paap rk LM		9.24	11.35	12.23	12.98	11.09	10.42
K-P Chi-sq(1) P-val		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kleibergen-Paap rk F		18.7	25.88	29.39	17.33	14.47	12.67
R-squared		-0.161	-0.211	-0.210	-1.984	-3.589	-6.468

Notes. Dependent variable is the (logged) amount of OECD-DAC ODA disbursements to country i in year t . t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level. Observations and country vary by lag because the Freedom Index variable is time-variant.

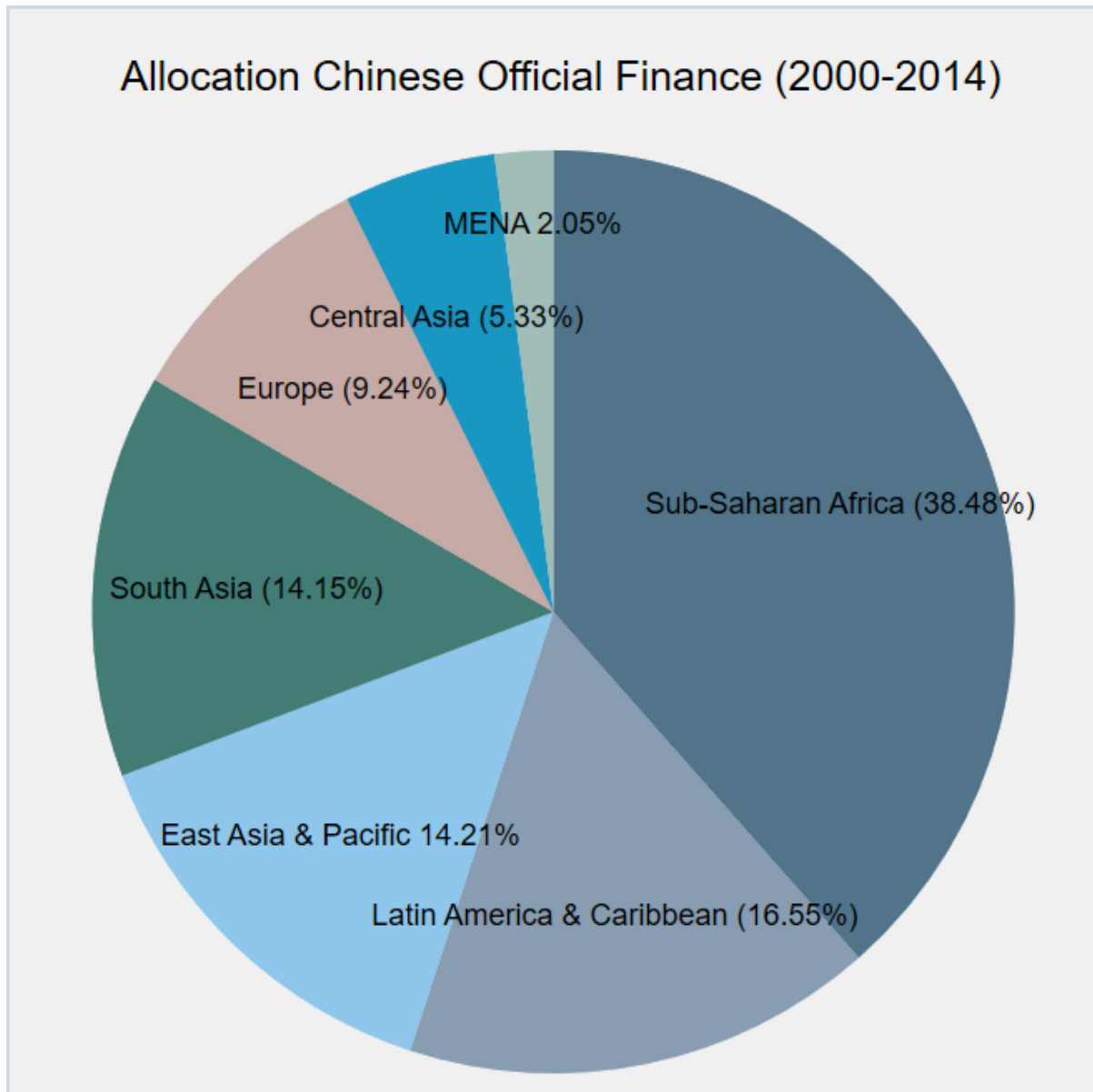
**Table A.8: Effects of total Chinese aid projects on Western ODA by freedom level
(2000-2014)**

Independent variable	lag	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS	(6) 2SLS
Total Chinese Official Finance (logs)	t-2	0.180** (2.10)			0.585*** (2.66)		
Total Chinese Official Finance (logs)	t-3		0.194** (2.43)			0.689** (2.36)	
Total Chinese Official Finance (logs)	t-4			0.191* (1.89)			0.984** (2.36)
GDP recipient (logs)	0	0.625** (2.27)	0.555** (2.12)	0.340 (1.33)	0.301 (0.83)	0.0887 (0.21)	-0.451 (-0.79)
population (logs)	0	-1.230 (-1.56)	-1.342* (-1.66)	-1.357* (-1.82)	-2.286 (-1.41)	-2.683 (-1.47)	-3.779 (-1.62)
UNSC membership	0	-0.0630 (-0.79)	-0.118 (-1.22)	-0.0171 (-0.22)	-0.120 (-0.45)	-0.268 (-0.68)	0.535 (1.62)
Observations		695	704	707	1070	1064	1063
Countries		61	61	62	82	82	81
Freedom Index		Free	Free	Free	Not Free	Not Free	Not Free
Kleibergen-Paap rk LM		10.92	12.74	13.03	10.25	9.213	7.69
K-P Chi-sq(1) P-val		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kleibergen-Paap rk F		25.54	32.77	33.93	13.97	11.69	9.06
R-squared		-0.130	-0.202	-0.232	-2.712	-4.361	-10.283

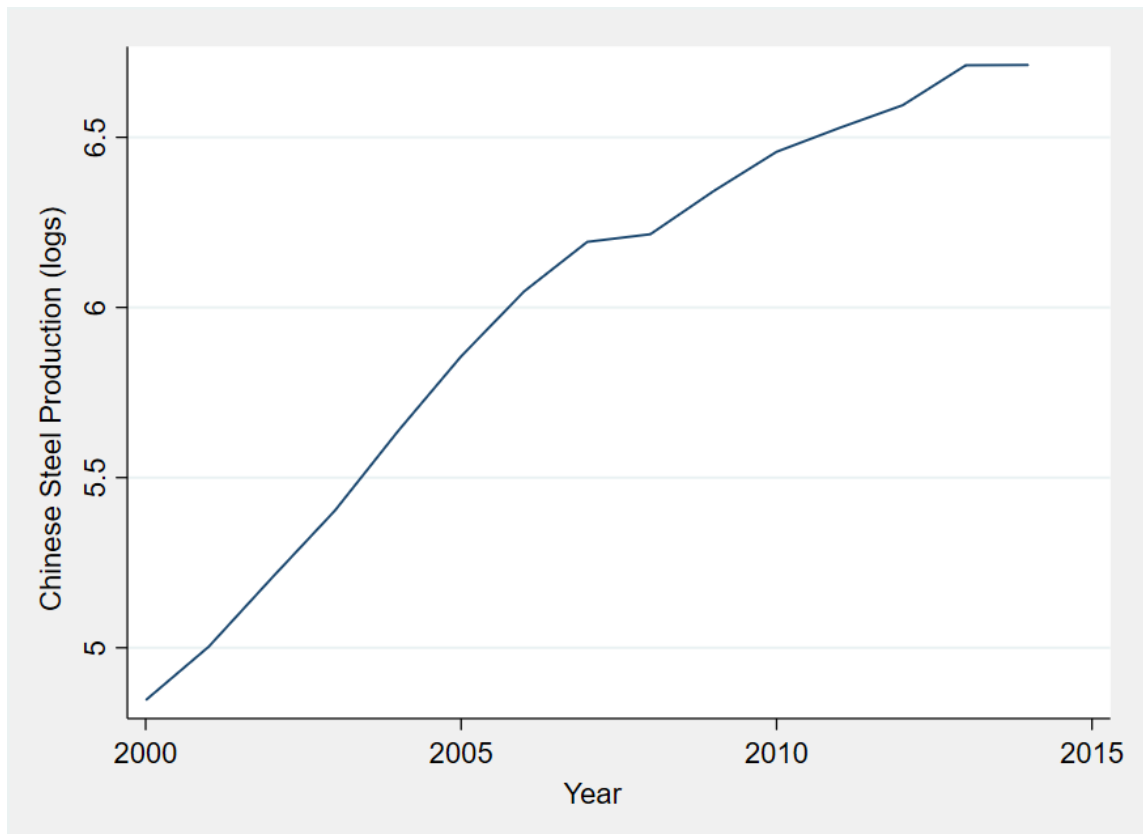
Notes: t-values in parentheses. *** (**, *) indicate statistical significance at the 1% (5%, 10%) level. All columns include year- and country-fixed effects. Standard errors are clustered at country-level. Observations and country vary by lag because the Freedom Index variable is time-variant.

Graphics

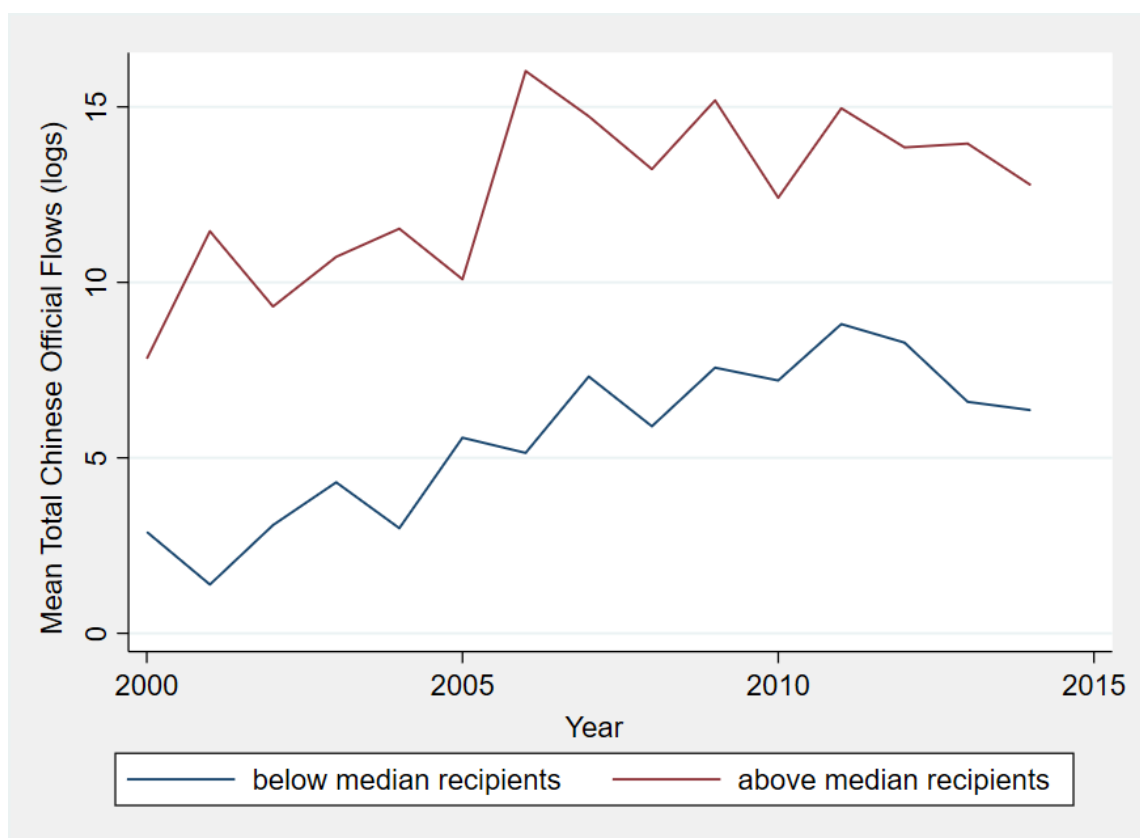
Graph B.1: Allocation of Chinese official finance in percentages (2000-2014)



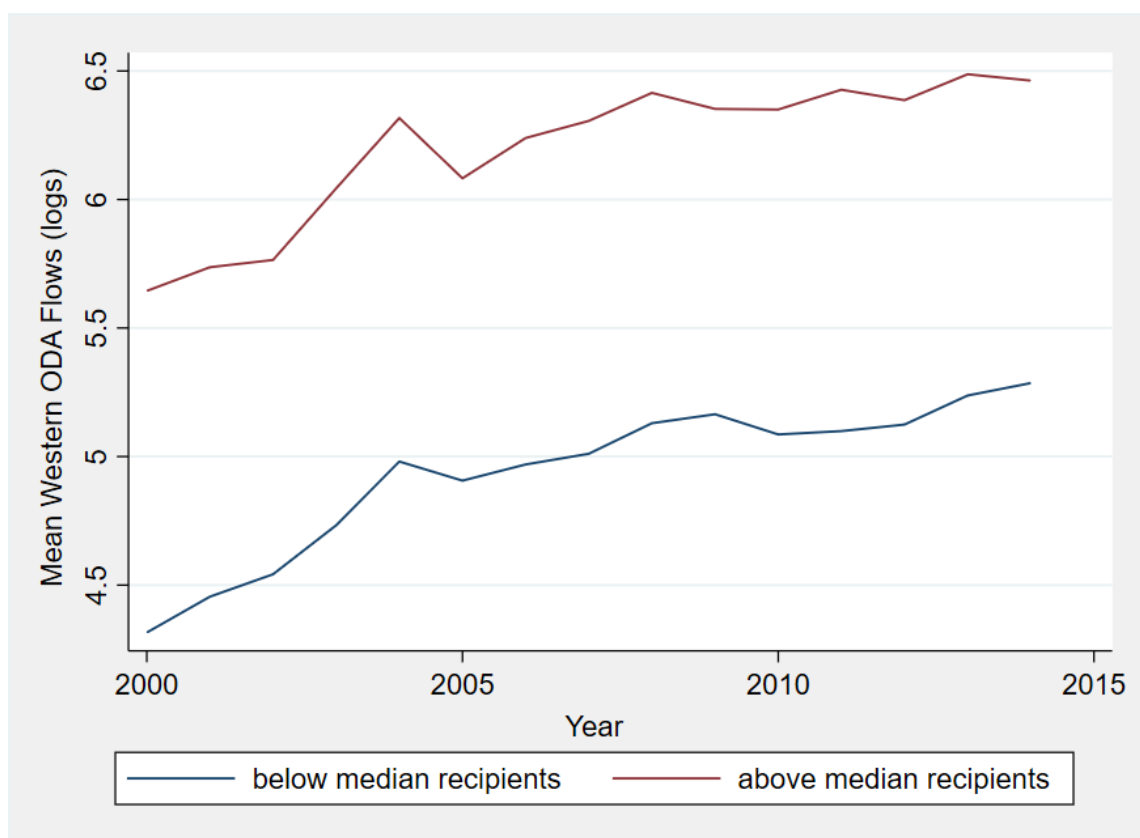
Graphic B.2: Chinese steel production (2000-2014)



Graph B.3: Average total Chinese official financial flows received by recipient countries, grouped by above or below probability to receive Chinese aid (2000-2014)



Graph B.4: Average total Western ODA flows received by recipient countries, grouped by above or below probability to receive Chinese aid (2000-2014)



Data Sources

Variable	Description	Years	Source	Comment
<i>Dependent variable</i>				
Western ODA	(log) Sum of ODA flows from OECD DAC members and development institutions with DAC majority voting rights to recipient country in year	2002-2018	OECD (2020)	Data has been downloaded from https://stats.oecd.org/Index.aspx?DataSetCode=CRS1 on the May 6, 2020
<i>Independent variables:</i>				
Chinese total flows	(log) Sum of total Chinese official flows to recipient country in year in constant 2014 US\$	2000-2014	Dreher et al. (2017)	Data has been downloaded from https://china.aiddata.org/ on May 10, 2020
Chinese ODA flows	(log) Sum of Chinese ODA-like aid flows to recipient country in year in constant 2014 US\$	2000-2014	Dreher et al. (2017)	Data has been downloaded from https://china.aiddata.org/ on May 10, 2020
<i>Instrument:</i>				
Interacted instrument	Probability of recipient country to receive aid (average) using the Chinese projects dummy variable multiplied by Chinese steel production in year (log)			
<i>Control variables:</i>				
Population	(log) total population in year	1997-2018	World Bank (2020)	Data has been downloaded from https://databank.worldbank.org/source/world-development-indicators on August 29, 2020
Security Council	United Nations Security Council membership in year	2002-2018	Dreher et al. (2009)	Data has been downloaded from https://www.uni-heidelberg.de/fakultaeten/wiso/awi/professuren/intwipol/datasets_en.html on November 15, 2020; dataset has last been updated on August 4, 2020
GDP	(log) GDP per capita in constant 2020 US\$ in year	1998-2018	World Bank (2020)	Data has been downloaded from https://databank.worldbank.org/source/world-development-indicators on August 29, 2020
Democracy	Freedom in the World Index	2002-2018	Freedom House	Data has been downloaded from https://freedomhouse.org/report/freedom-world on December 3, 2020
Chinese FDI	World Investment Report	2002-2017	United Nations Conference on Trade and Development	Data has been download from https://unctad.org/webflyer/world-investment-report-2017 on December 2, 2020