

Carving Out an Empire? How China Strategically Uses Aid to Facilitate Chinese Business Expansion in Africa**

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Abstract

Abstract: China's rising investment and aid flows into Africa have raised concerns over its increasing influence, triggering worries about a new scramble for Africa. This paper sorts out the motivations behind the various forms of Chinese aid, arguing that China uses different types of aid strategically to divert the recipient countries' economic and institutional orientation towards its own interests. Exploiting the AidData set, we show that China's official development aid (ODA) is positively related to an export bias in favour of China, suggesting that it serves to secure privileged access for Chinese firms to African resources. ODA tends to flow to less democratic regimes, because less accountable governments have more power to offer long-run privileges to their financial supporters. In contrast, we show that other official flows (OOF) are used to increase China's import share and is positively related to institutional quality, since this has a positive influence on market growth. This suggests that OOF is mainly used to facilitate Chinese access to promising African consumer markets. We conclude that while China employs different aid flows for different economic purposes, it uses all aid flows strategically to advance its interests and create an economic sphere of influence in Africa.

1. Introduction

The global foreign aid landscape is rapidly changing. Traditional donors such as the USA or Germany are increasingly facing competition from emerging markets, most notably China. This fits a general pattern in which China's economic ascent has provided developing countries with alternative sources of capital. The Belt and Road Initiative and the creation of

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the Asian Infrastructure Investment Bank in 2015 by China as an alternative to incumbent development agencies such as the World Bank illustrate this trend.

Chinese aid and investment typically does not come with the institutional conditionalities attached to financial flows from traditional donors, reflecting the fact that China's own development trajectory is not a textbook case of institutional orthodoxy (Taylor 2006; Xu 2011). Instead, it focuses on improving infrastructure and reducing production costs (Brautigam 2009). Chinese capital has thus allowed countries such as Ethiopia to move away from a market-oriented strategy promoting good governance and instead embark on an authoritarian, state-led development path that is explicitly modelled on the experience of China. The portrayal of China as a 'rogue aid' donor (Naim 2007) suggests that China is actively deploying aid as a tool to draw countries into its economic orbit, without any concern for African (institutional) development. Western policymakers and firms have expressed concerns about this trend, fretting that they are losing both influence and access to developing country markets (Brautigam 2009; Kurlantzick and Link 2009). The issue is especially pressing in Africa, where China is rapidly displacing Europe and the USA as the dominant trading partner or source of foreign capital. Some have suggested that we are on the verge of a renewed scramble for Africa (Lee 2006) and there are already indications that Western donors are loosening conditionalities in response to competition from Chinese aid (Hernandez 2017; Zeitz 2020), or are using aid to strategically counter the effects of Chinese aid (Kilama 2016).

Is the portrayal of China as a threat and rogue donor an accurate characterisation of reality? So far, the empirical literature has suggested otherwise. Various publications have found no systematic differences between the behaviours of China and traditional donors in terms of the extent to which they are driven by self-interest (e.g. Dreher, Nunnenkamp and Thiele 2011; Brautigam 2009). Chinese aid allocation appears independent from recipients' natural resource endowments, and the most damaging that can be said is that it is agnostic of institutional quality (Dreher and Fuchs 2015) and more prone to political capture (Dreher, Fuchs, Hodler, Parks and Raschky 2019). In so far as Chinese official development aid (ODA) follows self-interest, it is foreign policy rather than economic considerations that seem to matter (Dreher, Fuchs, Parks, Strange and Tierney 2018). In this, China behaves no different from traditional donors (Schraeder, Hook, and Taylor 1998; Kuziemko and Werker 2006; Bueno De Mesquita and Smith 2007; Vreeland and Dreher 2014). Going beyond China's own behaviour, Humphrey and Michaelowa (2019) find little indication that traditional donors adapt their aid strategies in response to Chinese competition. All in all, popular concerns about Chinese aid seem overblown.

This discrepancy between general perception and empirical evidence is puzzling.

In this paper, we aim to resolve this contradiction by making three modifications to the existing literature. First, China-worriers fret that Chinese aid is deployed to increase economic dependence on China. The empirical literature suggesting that these worries are overblown, in contrast, typically focuses on the relation between Chinese aid allocation and the amount of recipient's economic involvement with China. Dependence is not about the level of interactions, but about an economic structure that is disproportionately directed towards Chinese markets. Singapore trades more with China than North Korea does; yet, lack of alternatives implies that North Korea is far more dependent on Chinese trade than Singapore is. To capture the relation between aid and such dependence, we focus on aid allocation as a function of the proportion of a recipient's imports and exports that is originating in/directed to China.

Secondly, extant literature treats Chinese economic interests as homogenous. The literature on firms' reasons for expanding abroad, in contrast, recognises at least four different motivations for doing so (Dunning and Lundan 2008). Although efficiency-seeking and strategic asset-seeking are likely to be less relevant in the Chinese–African context, the distinction between resource-seeking and market-seeking is crucial. Both classes of activities require different economic strategies that rely on different institutional contexts and different types of state support (aid).

Thirdly, the majority of empirical studies into the topic treat Chinese aid as uniform. Yet, if China deploys aid strategically, it is likely to adapt not only the amount of aid to its economic interests but also its form. Dreher et al. (2018) argue that different types of aid—ODA and other official flows (OOF)—are associated with foreign policy and economic objectives, respectively. We extend their reasoning to the distinction between various economic motives, thus linking ODA to resource-seeking and OOF to market-seeking.

Combining these points, we develop an argument in which different economic conditions render countries attractive for China in different ways. Strategically allocated aid may either be used to ensure Chinese exporters enjoy privileged access to important export markets or to make sure natural resources flow into China rather than somewhere else. Whichever goal prevails determines the form of aid China deploys. Thus, linking Chinese economic interests to the form of aid provided, we provide empirical support for the thesis that China deploys its aid strategically in order to tie African economies closer to its market. Specifically, we show that China employs ODA to facilitate Chinese monopolisation of exports in resource-rich countries and OOF to secure privileged Chinese market access in countries with strong market potential. Extending this argument, we also show that high-quality institutions boosting growth primarily foster market-seeking activities, which attracts OOF. Low-quality institutions characterise limited access orders (North et al. 2009), increasing the potential of deploying ODA as a means to monopolise resource markets.

This paper contributes to the rapidly emerging literature on the impact of China's growing economic clout in other parts of the world (e.g. Isaksson and Kotsadam 2018) by focusing on the strategic use of aid specifically. While the political–economic literature on Chinese aid has increasingly emphasised the complex nature of aid (e.g. Brautigam 2009; Dreher et al. 2018), we add the important distinction between various economic motives to the discussion, borrowing from the international business literature. We are thus able to link motives to different institutional contexts and different forms of aid. In addition, our paper contributes to the empirical literature on Chinese aid allocation by linking it to a recipient's dependence on China rather than on the level of recipient–China interactions. This change of perspective is more in line with the spirit of the rogue aid thesis we seek to scrutinise.

The remainder of this paper is organised as follows. Section 2 outlines the hypotheses and the related model, while Section 3 introduces the source data and presents the empirical results. Section 4 concludes.

2. Working hypotheses and modelling strategy

Both the 'rogue aid'-account and the various studies criticising it seem to share the assumption that Chinese economic interests in Africa are homogenous. In this narrative, China is active in Africa to gain access to the continent's natural resources. International business literature into the nature of Chinese overseas direct investment, in contrast, has identified at

least three separate classes of motivations for foreign activities (Buckley et al. 2007, 2008): resource-seeking, market-seeking and strategic asset-seeking (Dunning and Lundan 2008)¹. Chinese firms seeking to tap into knowledge, patents or human capital are less likely to focus on Africa, considering the comparative absence of such strategic assets in the African context. This suggests that some Chinese firms are indeed active in Africa in order to secure access to crucial resources (Kobayashi 2008). Others are there to enter Africa's emerging markets in order to meet the variety of daunting needs of the fastest-growing population in the world (see Sun et al. 2017).

This variety in motivations has implications for the kind of support Chinese firms need from their state. Resource-seeking typically requires sizable, capital-intensive investments in activities such as mining. Such investments have a long-time horizon and are, by definition, rather risky. In order to mitigate those risks, firms looking for resources typically seek long-term concessions from the host government in order to acquire a secure monopsony position. What resource-seeking firms primarily need from their home states is help in getting ahead in the competition for such concessions. What kind of aid serves this purpose?

As Dreher et al. (2018, p. 184) argue, 'a state's ability to "buy" policy concessions from another state will increase with the concessionality of its offer... For any given financial commitment, the larger the grant element, the more the recipient government will value the transfer and thus the larger the "favour" a donor can expect in return.' For this reason, ODA is an effective tool for getting the concessions Chinese resource-seeking firms need, while OOF is less geared to this purpose.

Market-seeking firms, on the other hand, are primarily active in Africa because of the opportunities African markets offer for selling Chinese goods. What they require is support in acquiring access to the sizable, growing consumer markets of many African countries (Chen and Orr 2009). Since consumer market-seeking by Chinese firms is served by exports or capital-extensive, localised production, political risk of the type characterising resource-seeking activity is less relevant. The main obstacles are issues like regulatory uncertainty, exchange-rate and credit risks or infrastructural problems (Dunning and Lundan 2008). These challenges may be mitigated by targeted aid in the form of export credits or other commerce- and export-facilitating flows, allowing Chinese firms to overcome formal and informal barriers to recipients' domestic markets (Dreher et al. 2018). For this reason, OOFs are an effective tool for getting the access Chinese market-seeking firms need, while ODA is less geared to this purpose.

If ODA and OOF serve different economic purposes, this suggests that they will be allocated differently. Resource- and market-seeking activities tend to focus on different target countries. Countries rich in minerals, fossil fuel deposits or essential foodstuffs attract resource-seeking investment, and by extension ODA. Countries with large or fast-growing untapped consumer markets invite market-seeking operations. A Chinese state intent on supporting market-seeking activities is likely to allocate OOF disproportionately to such destinations.

1 Buckley et al. (2007) considers a fourth general motivation for overseas expansion, efficiency-seeking, to be less relevant for China given its own comparative advantage in low labour costs. However, continued economic growth since the period analysed by Buckley et al. (2007) has pushed up wages in China, creating increased pressure on Chinese firms to source the most labour-intensive products from new low-wage locations, benefiting countries such as Ethiopia.

In order to translate this argument into hypotheses, we argue that resource-seeking and market-seeking activities are reflected in a recipient's trade pattern with China. If Chinese firms are active in a market primarily to acquire resources, this translates in a diversion of exports to China. If the main activities of Chinese firms in a market focus on market-seeking, this translates in exports from China to the recipient country. In either case, if Chinese aid makes a difference to the activities of its firms, the relevant variable is not so much the absolute amount of recipient exports or imports directed to China, but the share of recipients' total imports and exports that flows to/from China. This share reflects the extent to which Chinese firms have acquired an advantage relative to firms from other countries.

Thus, we hypothesise that

Hypothesis 1: Chinese ODA is positively associated with the share of recipient countries' total exports that is flowing to China, while OOF is positively associated with the share of recipient countries' imports that is originating from China.

Our reasoning also sheds a more nuanced light on a second element of the rogue-aid thesis: the idea that Chinese aid generally promotes weak governance (Brazys et al. 2017; Isaksson and Kotsadamm 2018; Kersting and Kilby 2014). We have argued that the function of ODA is to 'buy' political concessions providing resource-seeking firms secure, privileged access to the inputs they need. Such a setting characterises a *limited access order*, where a small set of agents decide over the distribution of zero-sum economic rents and are able to award privileges to Chinese firms in return for financial support (North et al., 2009). The effectiveness of ODA to get resource-seeking firms the concessions they need therefore negatively depends on institutional quality. In contrast, market-seeking firms have a strong interest in vibrant, dynamic markets that are a characteristic of *open-access orders* (ibid). Democratic accountability and institutional quality foster the growth of middle classes with substantial purchasing power in African markets (Kodila-Tedika et al. 2016). For these reasons, we expect market-seeking activity, and henceforth OOF, to be positively related to institutional quality.

Hypothesis 2: Chinese ODA is negatively related to democratic institutions, while Chinese OOF is positively related to democratic institutions.

The entire reasoning behind our hypotheses is summarised in Figure 1. Note that our hypotheses are correlational rather than causal. The idea is that the motive for overseas activity simultaneously drives location choice, determined by a location's economic and institutional characteristics, and the type of support in the form of aid facilitating such activities. Since we cannot directly observe economic motives, our hypotheses centre on the premise that location characteristics and aid types are associated. Note also that our hypotheses do not involve comparisons with other donors. Our reasoning is that the rogue aid narrative does not necessarily imply that traditional donors are any 'better' than China. It just says something about China's motivations and behaviour as a donor. If we find that China acts as a self-interested donor, that observation is not somehow less true or less problematic because other donors turn out to act in the same way.

Recipient type	Economic Motive for Chinese firms	Objectives	Challenges	Institutional Setting facilitating objectives	Aid type facilitating objectives
Exporter	Resource-seeking	Monopsonisation	Political Risk	Limited Access Order	OOF
Importer	Market-Seeking	Market Share Growth; Market Growth	Regulatory uncertainty Exchange-rate risks Credit risks Infrastructural problems	Open Access Order	ODA

Figure 1: Conceptual Relations Between Recipients, Internationalisation Motives and Aid Types

To test our hypotheses, we use a class of models suitable when the dependent variable is censored around zero. A host of contributions in the international aid literature have paid attention to the censoring problem using a variety of econometric methods ranging from the Tobit model (e.g. Dollar & Levin 2006; Berthélemy & Tichit 2004) to a two-stage modelling strategy à la Heckman (1979) (e.g. Berthélemy 2006 and Fleck and Kilby 2010).²

Our baseline model rests on the panel Tobit, which characterises the aid allocation process as follows:

$$y_{rt} = \sum_r \beta_r + \sum_t \phi_t + \sum_i \theta_i X_{irt} + u_{rt}, \tag{1}$$

where y_{rt} represents the aid flow of interest, r the recipient country, t the time period, with

$$y_{rt} = \begin{cases} y_{rt}^* & \text{if } y_{rt}^* > 0 \\ 0 & \text{if } y_{rt}^* \leq 0 \end{cases},$$

where y_{rt}^* is a latent variable and X_{rt} is a set of explanatory variables and $u_{rt} = \mu_r + \epsilon_{rt}$ the error-term, composed of the recipient specific effects μ_r and the random noise of the data ϵ_{rt} with $u_{rt} \sim N(0, \sigma^2)$. Given the nature of the variable considered and the way they have been measured, the specification form looks like the following:

$$\begin{aligned} \ln y_{rt} = & \sum_r \beta_r + \sum_t \phi_t + \beta_1 \ln GDP_{rt-1} + \beta_2 Lifeexp_{rt-1} + \beta_3 \ln Disasters_{rt} \\ & + \beta_4 Anticorruption_{rt-1} + \beta_5 Elections_{rt} + \beta_6 \ln Trade_{rt-1} \\ & + \beta_2 \ln Oil_{rt} + \beta_2 Growth_{rt-1} + u_{rt}, \end{aligned} \tag{2}$$

2 For example, the landmark contribution by Alesina and Dollar (2000) applies ordinary least squares (OLS) on the presumption that their dependent variable contains very few zero observations for most of their donors. Yet, they recognise that for a few donors with a larger share of zeroes in the dependent aid flow variable a Tobit procedure would be more appropriate. The comparison of the OLS and Tobit results for those donor countries shows that the results differ significantly, with the coefficients associated to income changing from a positive to a negative sign for Scandinavian countries.

Owing to the censored nature of the dependent variable, we follow Dollar and Levin (2006) and specify it as follows: $\ln(\text{aidpercapita}_{it} + 1)$ or $\ln(\frac{100 * \text{aid}_{it}}{\text{aid}_t} + 1)$. To address the issue of heteroskedasticity, the dependent variable is expressed in terms of logarithms. To maintain consistency, all other quantitative explanatory variables are also expressed in a log form.

The literature has not yet come to the grip with the way to measure aid. In some cases, the dependent variable is measured in terms of per capita, while in others as the total value of aid. In the absence of a consensus, we measure the dependent variables in the following two ways. First, aid in constant prices expressed on a per capita basis. Second, following Clist (2009), we also measure aid to a particular recipient as a percentage of the total aid flow of the respective donor country in year t . This has the advantage to make the dependent variable less prone to the fluctuations in the annual aid budget of the donor. Under this second option, the variable population size is added to control for population differences.

The explanatory variables are grouped on the basis of the three criteria of aid allocation incentives delineated by the literature—*needs*, *merits* and *self-interest*. The most obvious variable that captures the needs of a country is *GDP per capita* in constant prices. This variable tracks reasonably well the stage of economic development achieved by an economy and, hence, provides a broad indication on the extent to which the needs of the population are met. Admittedly, though, it is too broad to track reasonably well some of the crying needs that the potential recipient currently faces. While a comprehensive listing of the variables that track the numerous needs that Africa currently faces is beyond the scope of this paper, we have identified two areas where the needs are acute: health status and disaster relief. The former is measured by *Life expectancy* at birth, expressed in years. It should track closely the effectiveness of the public health system, so that a weaker public health system leads to a lower life expectancy of the population, making the country a prime candidate for foreign aid.³ The other variable that captures need is the number of people affected by *disasters*. Africa outnumbers Latin America and Asia in the natural disaster occurrences recorded for drought, epidemic, flood and insect.⁴ This implies that the number of Africans affected by such events in Africa is significant, which suggests important relief needs. If aid is allocated according to recipients' needs, we expect life expectancy—like GDP per capita—to be negatively associated with aid, while the number of disasters should be positively related.

The merits aspect is captured through *elections*, a dummy variable indicating whether the contemporary chief executive has been elected, regardless of whether this has been directly or indirectly (Przeworski 2013). The other variable related to merits is *institutional quality* which tracks the quality of public sector institutions (e.g. enforcement of property rights, presence of corruption, etc.) (Kaufmann et al. 2010). Since most donors promote good governance in recipient countries, we expect that recipient countries with better institutions

3 To capture not only the need in terms of differences in economic circumstances but also differences in health conditions, we initially considered the use of the prevalence of HIV as a proxy for critical health conditions in African countries. However, Fan et al. (2014) argues that China, in contrast to the DAC donors, does not target specific diseases but rather focuses on the projects related to the general public health system.

4 EM-DAT: The OFDA/CRED International Disaster Database, *Université catholique de Louvain*, Brussels, Belgium.

and a healthy electoral regime get rewarded with larger aid flows. However, according to the non-interference policy of China, such merit considerations are not likely to be important in China's aid allocation. Some recent contributions by [Isaksson and Kotsadam \(2018\)](#) and [Tseng and Krog \(2017\)](#) have even gone a step further, arguing that corrupt and authoritarian regimes seem to attract positively more Chinese aid. For this reason, we expect that the otherwise positive relation between institutional quality indicators and aid is absent or negative for China.

Self-interest tracks the incentives for donors to establish exclusive economic partnerships with aid recipients. We use variables reflecting energy resource endowments and recipient lagged real GDP per capita to capture the general economic attractiveness of the recipient country. While these variables are associated with more aid in general, we are mainly interested in the use of aid to secure donor's privileged access to recipient resources and markets. Our premise is that aid serves to draw recipient countries more firmly into the donor country's economic sphere of influence, making them economically more dependent on the donor country. To capture this, we construct a measure of the bilateral commodity trade volume between the recipient country and China as a share of total commodity trade volume of the recipient country. This reflects the extent to which the recipient country's economy is focused on China. We construct this variable both for import and export shares. If aid flows are motivated by donors' self-interest, then the expected sign is positive.

In addition to the explanatory variables outlined above, we also considered a set of recipients' dummy variables to account for their structural differences (β_r) as well as time-dummy variables (ϕ_t) to track shifts in the dependent variables not accounted for by the set of explanatory variables. Although the use of country dummy variables is widespread in applied econometrics, this practice is not widely accepted in the literature of the Tobit model. For example, [Berthélemy and Tichit \(2004\)](#) argue that introducing fixed effects to non-linear Tobit model leads to biased and inconsistent results. For these reasons, our models of preference are the ones that do not include fixed effects. However, for completeness we choose to also report results with fixed effects. Given the presence of some bias we interpret the results of these latter models conservatively. In the same vein, we included total ODA flows to recipient countries from all donors except China. This variable captures the general attractiveness of a country for aid regardless of its origin and reduces potential omitted variable bias.

A potential issue with this specification is the endogeneity of the explanatory variables, which has recently attracted a good deal of attention in the context of the relation between aid and its outcomes (e.g. [Brückner 2011](#); [Clemens et al. 2012](#)). The problem in our case is that many of the outcomes that aid is supposed to affect are themselves likely to be criteria for the allocation of aid in the first place. Aid aimed at poverty alleviation makes more sense in locations with more poverty, for example. Likewise, significant aid flows in year t could be motivated by a desire to increase trade or corruption—the latter privileging the donor's firms—so that expectations of such corruption and trade flows are likely to influence aid. Conceptually, therefore, we do not expect strict causal relations running from one set of variables to the other. In line with the model depicted in [Figure 1](#), we interpret results as evidence of associations between variables, driven by unobserved differences in internationalisation objectives.

However, in line with our conceptual reasoning, we choose to lag most quantitative explanatory variables by one period, with the exception of two. These are the disaster and

democracy variables. The number of people affected by disasters is not lagged either, as it displays the urgent short-term need of a country. The election variable is not lagged, as China negotiates its aid programs directly with the heads of state (Copper 2016). The political system type in year t is therefore essential for the aid allocation in year t as the personal decision of the current head of state depends on it. We also employ a set of variables within each broad category that explain aid flows—need, merit and self-interest—which may entertain a collinear relationship. While the partial correlation table in the appendix rejects any possible occurrence of collinearity, they still convey the same message which may make some of them not statistically significant.

3. Quantitative analysis

3.1. The source data and trend analysis

Our source data is the AidData's Chinese Official Finance to Africa Dataset, version 1.2 (Strange et al. 2017). This open-source data tracks China's aid flows on a project-level basis from 2000 to 2013.⁵ This contrasts with OECD's International Development Statistics database (IDSD) widely utilised in the research on foreign aid, which only reports China's aid inflows data (see Arndt et al. 2015, for example).⁶ AidData provides information on three categories of aid flows—ODA, OOF, and so-called vague flows (VFs)—as well as on official investment. All are expressed in terms of constant 2011 U.S. dollars and in terms of the number of underlying projects funded out of these flows. We focus on the aid allocated across African countries, of which there are 51 in the dataset. In addition to this source data, we have used OECD's IDSD to compile the information on ODA for the USA, Germany and Japan. Altogether, these two sources provided the necessary information to measure the dependent variable in constant dollars (or in terms of number of projects for the AidData dataset). A feature of aid measures is that they are censored around zero. Table 1 shows that 43% of the observations of the ODA-like aid per capita dependent variable have a zero value, compared to 86% for OOF and 74% for VF.⁷

These two source data on aid have been complemented by a variety of other sources that provide the necessary information to compile the explanatory variables but also the price indexes to turn some other variables, such as trade data, from current dollars into constant dollars. These supplementary source data include the 9.0 version of the Penn World Tables and the World Development Indicators among others which provide a wide range of variables displayed in Table A.1 in the Appendix. The corresponding summary statistics are displayed in Table A.2).

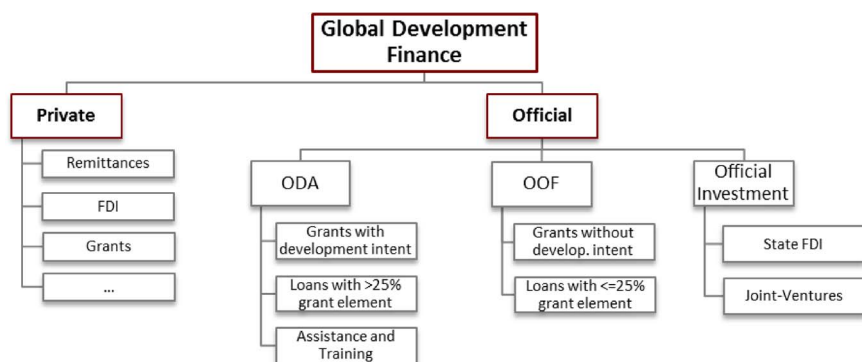
Figure 2 articulates the vast array of financial flows that structure the global development finance (GDF). Of these flows, only FDI, remittances and ODA are available on a consistent basis for China and DAC donors and, thus, form the basis of our cross-country comparison.

- 5 The data used for the econometric model includes solely bilateral aid flows that can be allocated to a specific recipient country and thus excludes any regional flows, with the latter representing only 6.4 billion USD out of 137.9 billion USD. Furthermore, it covers completed, committed and pledged projects.
- 6 As a non OECD DAC (Development Assistance Committee) member country, China is not compelled to publish detailed information about its aid outflow activities.
- 7 Excluding pledges would even increase the censored nature of the data.

Table 1: Distribution of the Observations Related to the Dependent Variable

	X = 0	0 < X ≤ 5	5 < X ≤ 10	10 < X ≤ 15	15 < X ≤ 20	>20
ODA-like	310	270	61	18	7	48
OOF-like	613	55	8	7	6	25
Vague	528	101	24	11	10	40
Official Investment	696	9	2	1	3	3
Total Aid	250	219	83	26	19	117

Notes: The dependent variable is the value of aid flows per capita (in constant 2011 USD). Each aid flow type has a total of 714 observations, originating from 51 countries times a time period covering 14 years. For example, of 714 observations for ODA, 310 or 43.4% have zero value for the dependent variable.



Note: Adapted from Brautigam 2011 and Strange et al. (2017).

Figure 2: The classification of foreign aid. Note: Adapted from Brautigam 2011 and Strange et al. (2017).

With 33.6% of the \$212 billion flows of GDF received by Africa in 2013, ODA still represents a significance source of flows despite a decline from 47.9% in 2000 to the benefit of FDI.

We present the order-of-magnitude and trend of China's aid data and, as a way of background, we contrast them with those reported by other major donors. Over the 2000–2013 period, Table 2 indicates that China's ODA flows reported a 7.3% average increase, right between those of the major DAC donors (9.6% for the USA, 5.0% for Germany, and 7.0% for Japan).⁸ Despite this relatively modest advance, China has contributed for 9.7% of the \$28.1 billion average donated by all DAC members (to which we have added China) during this period, higher than Germany and Japan (8.1% and 5.9%, respectively), but considerably behind the USA, the first donor with 23.7%. The other aspect conveyed by Table 2 is China's ODA surge during from 2007 to 2013, a period when this economy lifted global growth while Western donors were still trapped in a myriad of fiscal adjustment pressures.

⁸ In contrast to the in the aid literature usually chosen net volume, this study uses the gross volume of ODA commitments due to the limitations of the AidData source data. The data includes both bilateral as well as regional flows.

Table 2: ODA of a Selected Set of Countries to African Recipients (Billions of 2011 USD)

	2000–2013	2000–2007	2007–2013
China	2,727	1,881	3,638
Germany	2,263	2,172	2,365
USA	6,663	4,938	8,493
Japan	1,646	1,543	1,819
All DAC countries	25,359	22,960	27,987
All DAC countries + China	28,086	24,840	31,625

Note: Period averages. Figures include both bilateral and regional flows.

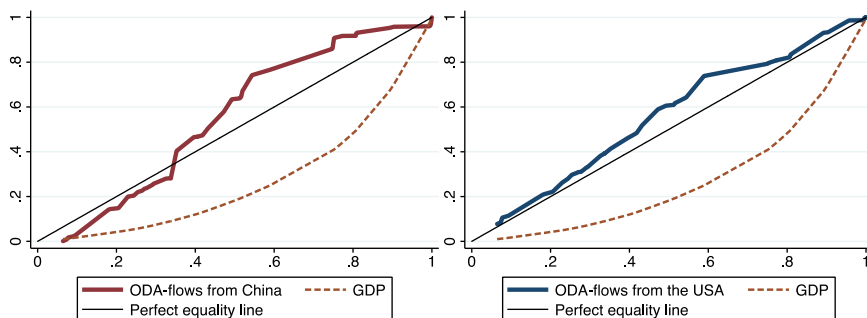


Figure 3: The Cumulative Distribution of GDP and ODA Flows: China and the USA.

To get an idea of the priorities of China’s aid, Table 3 presents a breakdown of Chinese aid flows into various sectors. By and large, the sectoral destination of China’s total aid flows revolves around energy, communication and transport which accounted for almost 50% over the 2000–2013 period, with some variation from one form of aid to another. For example, while these sectors account for about 40% for ODA and OOF, they represent 69.0% of VFs. This is in line with the image from the rogue aid literature that Chinese aid is focusing on energy resources and on developing the necessary infrastructure to export such resources, and less committed to issues such as health, government and civil society, or the environment.

Our main interest is in the question which countries get this aid. Do poorer and better governed countries receive relatively less from China compared to other donors, as the rogue aid literature suggests? We consider the cumulative distribution curve of ODA made by China and the U.S. with recipients ranked by real GDP per capita. If the poorest countries are the primary recipients of ODA allocation, then the ODA line would have been constantly above the perfect equality line. Figure 3 shows that the poorest 20% of the African population receive only 15% of China’s ODA flows, indicating that this country allocates a higher proportion share of its ODA to the medium-income countries, while neglecting the poorest countries. This contrasts markedly with the USA which gives precedence to poorer countries.

3.2. Econometric results

3.2.1. Baseline results

To address the question which factors underlie the various aid flows provided by China, we start out by looking into ODA for which the results are reported in Table 4. The dependent

Table 3: China's Aid Flows Per Capita in 2011 USD

	Total	ODA		OOF		Vague	
	\$	\$	%	\$	%	\$	%
Action relating to debt	4,990	4,974	13.0	16	0.0	-	-
Agriculture, forestry and fishing	3,781	624	1.6	2,929	5.7	228	0.6
Banking and financial services	2,401	33	0.1	2,368	4.6	0	0.0
Business and other services	240	5	0.0	214	0.4	20	0.1
Communications	7,092	2,377	6.2	1,233	2.4	3,482	8.6
Developmental food aid/food security assistance	84	83	0.2	-	-	2	0.0
Education	1,439	459	1.2	750	1.5	230	0.6
Emergency response	1,370	1,369	3.6	1	0.0	-	-
Energy generation and supply	25,430	5,464	14.3	7,673	14.9	12,293	30.3
General budget support	1,517	84	0.2	1,433	2.8	-	-
General environmental protection	2	2	0.0	-	-	-	-
Government and civil society	3,513	2,107	5.5	692	1.3	715	1.8
Health	2,276	1,484	3.9	592	1.1	199	0.5
Industry, mining, construction	5,685	1,463	3.8	3,904	7.6	318	0.8
Non-food commodity assistance	0	0	0.0	-	-	-	-
Other multisector	21,120	3,352	8.8	14,866	28.8	2,902	7.2
Other social infrastructure and services	2,058	877	2.3	284	0.6	897	2.2
Population policies/programmes and reproductive health	1	1	0.0	-	-	1	0.0
Support to non-governmental organisations (NGOs) and government organisations	11	11	0.0	0	0.0	-	-
Trade and tourism	2,927	1,083	2.8	746	1.4	1,098	2.7
Transport and storage	31,939	7,555	19.8	12,178	23.6	12,207	30.1
Unallocated/unspecified	8,799	2,968	7.8	1,226	2.4	4,604	11.3
Water supply and sanitation	3,674	1,802	4.7	498	1.0	1,374	3.4
Women in development	11	11	0.0	-	-	-	-
Total Aid	130,357	38,185	100.0	51,602	100.0	40,570	100.0

Notes: Table reports average flows over 2000–2013. Despite the availability of Official Investment data from the AidData dataset, we chose to exclude this data from further consideration due to its lack of aid characteristics.

variable is ODA expressed both in terms of per capita and as recipient country share. The results report the marginal effects of an increase in the explanatory variable on the aid dependent variable at the means of the explanatory variables.⁹ Models 1 and 2 are our baseline estimations for ODA volume and shares, respectively. Models 3–4 and 5–6 repeat this, adding year and country dummies. Throughout all models, we find that Chinese ODA is consistently linked to a diversion in exports towards China. A 10% increase in export bias

9 Interpreting the results is straightforward for log-log regressions, with the explanatory variable being log-transformed just as the dependent variable. A one-percentage increase in the explanatory variable leads to a β percentage increase in the dependent variable. However, interpreting log-linear regressions is not as simple. When the explanatory variable is not log-transformed, a one-unit increase of the explanatory variable results into $100 * (e^{\beta} - 1)$ percentage change of the log transformed dependent variable (see Kephart 2013).

Table 4: Determinants of Chinese ODA

	(1) ODA share	(2) ODA per capita	(3) ODA share	(4) ODA per capita	(5) ODA share	(6) ODA per capita
ln GDP pc (t-1)	0.063 (0.088)	0.177 (0.120)	0.056 (0.089)	0.139 (0.120)	0.122 (0.157)	0.206 (0.223)
Elections	-0.245* (0.133)	-0.327* (0.187)	-0.302** (0.136)	-0.389** (0.190)	-0.411*** (0.149)	-0.474** (0.204)
ln Anticorruption (t-1)	-0.007 (0.006)	-0.005 (0.009)	-0.007 (0.006)	-0.007 (0.009)	-0.017** (0.008)	-0.024* (0.012)
ln Export bias (t-1)	0.066** (0.032)	0.098** (0.044)	0.062* (0.033)	0.071 (0.045)	0.069* (0.037)	0.085* (0.051)
ln Import bias (t-1)	0.024 (0.054)	0.062 (0.074)	0.032 (0.060)	0.043 (0.080)	0.026 (0.062)	0.050 (0.086)
Life Expectancy (t-1)	-0.018** (0.009)	-0.025** (0.012)	-0.018** (0.009)	-0.022* (0.012)	-0.086 (0.054)	-0.036 (0.050)
ln Disaster	-0.007 (0.008)	-0.017 (0.011)	-0.010 (0.008)	-0.020* (0.011)	-0.014* (0.008)	-0.019* (0.011)
ln Subsoil wealth	-0.003 (0.008)	-0.014 (0.010)	-0.002 (0.008)	-0.011 (0.010)	-0.142 (0.168)	-0.219 (0.231)
Growth (t-1)	-0.184 (0.242)	-0.287 (0.347)	-0.271 (0.246)	-0.458 (0.350)	-0.293 (0.247)	-0.493 (0.351)
ln Population (t-1)	-0.053 (0.067)		-0.055 (0.068)		1.528* (0.919)	
ln DAC ODA pc/share (t-1)	0.206** (0.086)	0.239*** (0.078)	0.228*** (0.086)	0.221*** (0.079)	0.181** (0.089)	0.147* (0.086)
Year dummies	No	No	Yes	Yes	Yes	Yes*
Country dummies	No	No	No	No	Yes	Yes
Observations	546	546	546	546	546	546
Countries	42	42	42	42	42	42

Note: *denotes significance at 10% level, **denotes significance at 5% level, and ***denotes significance at 1% level.

towards China is associated with about 1% higher ODA per capita, or about 0.6% higher ODA shares. This suggests that ODA allocation is a rather effective reward for trade diversion by recipient countries. In contrast, imports appear unrelated to ODA levels or shares. This is in line with our first hypothesis, predicting that ODA serves to secure more exclusive access to recipient resources. Also, we find negative relations with the presence of elections, and when adding country and year dummies with anticorruption measures. These results also confirm our second hypothesis, stating that Chinese ODA is negatively related to institutional quality and serves to bind friendly autocratic regimes to China.

We find limited support for a needs-based explanation of Chinese ODA-allocation. While ODA is negatively associated with life expectancy, there is no significant relation with GDP/capita and no, or in some specifications negative, relation with disasters. The latter may reflect a propensity for Chinese aid to be allocated more on structural grounds. We conclude that Chinese ODA seems indeed to be driven by a desire to tie countries into a Chinese economic zone, diverting their resource exports to China and bolstering friendly, less democratic regimes.

What about other flows? Table 5 reports the same estimations as Table 4, now with OOF per capita as a dependent variable. Again, Models 1 and 2 are the baseline estimations for

Table 5: Determinants of Chinese OOF

	(1) OOF share	(2) OOF per capita	(3) OOF share	(4) OOF per capita	(5) OOF share	(6) OOF per capita
Elections	0.151*** (0.044)	0.173*** (0.054)	0.124*** (0.039)	0.134*** (0.047)	0.003 (0.461)	0.003 (0.374)
ln Anticorruption (t-1)	-0.003 (0.003)	-0.004 (0.004)	-0.002 (0.003)	-0.003 (0.003)	-0.000 (0.005)	-0.000 (0.004)
ln Export bias (t-1)	-0.032 (0.024)	-0.047* (0.028)	-0.022 (0.021)	-0.036 (0.024)	-0.001 (0.106)	-0.001 (0.116)
ln Import bias (t-1)	0.095 (0.061)	0.181** (0.072)	0.119* (0.069)	0.188** (0.076)	0.001 (0.144)	0.001 (0.137)
ln GDP pc (t-1)	0.005 (0.046)	-0.006 (0.054)	0.012 (0.040)	-0.000 (0.045)	-0.001 (0.141)	-0.001 (0.101)
Life Expectancy (t-1)	-0.009* (0.005)	-0.012** (0.006)	-0.009** (0.004)	-0.012** (0.005)	-0.000 (0.027)	-0.000 (0.047)
ln Disaster	0.003 (0.005)	0.005 (0.006)	0.004 (0.004)	0.004 (0.005)	0.000 (0.006)	0.000 (0.003)
ln Subsoil wealth	0.014*** (0.005)	0.019*** (0.006)	0.011** (0.004)	0.015*** (0.006)	-0.001 (0.117)	-0.000 (0.054)
Growth (t-1)	-0.304* (0.161)	-0.320* (0.188)	-0.293** (0.144)	-0.299* (0.158)	-0.004 (0.638)	-0.003 (0.441)
ln Population (t-1)	0.024 (0.037)		0.016 (0.033)		-0.006 (0.896)	
ln DAC ODA pc/share (t-1)	0.065 (0.044)	0.031 (0.035)	0.062 (0.038)	0.021 (0.030)	0.001 (0.079)	0.000 (0.004)
Year dummies	No	No	Yes	Yes	Yes	Yes*
Country dummies	No	No	No	No	Yes	Yes
Observations	546	546	546	546	546	546
Countries	42	42	42	42	42	42

*Statistical significance at 10%.

OOF volumes and shares, respectively. In columns 3–6, we add year and country dummies for both dependent variables. The results are strikingly different compared to the ODA flows. For OOF, we find that holding regular elections increases Chinese OOF flows into a country. Corruption does not seem to be related to OOF. While we again find some evidence of a trade bias towards China associated with aid, this bias now affects imports rather than exports. Although not robust across all specifications, results suggest that OOF, if anything, is associated with relatively more Chinese imports as a share of total imports. At the means, a 10% increase in import bias towards China is associated with about 2% higher OOF per capita, or an about 1% higher OOF share. The effect of recipient needs is less profound than for ODA, which is expected given the less aid-oriented nature of OOF flows.

These results confirm our ideas, suggesting that OOF serves to secure Chinese firms' privileged access to recipient markets. As the prospects for investment and market growth are better in countries with better and more accountable institutions, institutional quality is positively associated with OOF flows. In conformity with our expectations, we find opposite results for ODA and OOF, suggesting that aid is strategically used to serve different economic interests.

3.2.2. Robustness checks

We now perform robustness checks on two important grounds. We consider how robust our baseline results are to additional explanatory variables and to alternate econometric methods.

While the explanatory variables considered in the baseline models explain a great deal of the variance of the variety of forms taken by China's aid flows, variables such as UN voting patterns, geography (landlocked countries vs. coastal countries), and French colonies, have so far been left out in our set of results despite the importance given to them by the literature. The results are reported in Table 6. The UN voting variable records the voting pattern of all countries in the UN General Assembly and lists the percentage of agreement between two countries. If a recipient country would always vote in line with China, the index would equal 1 and vice versa 0 (Voeten 2012). However, in none of the regressions considered UN voting patterns is significant, while the main story that emerged out of our baseline models remain robust: China's aid policy appears primarily driven by self-interest considerations with a tendency to assign each of its aid flows to a specific area (Models 1–2). ODA serves to foster access to resources, while OOF is designed to enhance access to recipient markets.

Similarly, all regressions were re-estimated with an explanatory variable controlling for the geography of aid recipients (Models 3–4) and for having been part of the French Empire. Of all these additional controls, the only set of variables that is significant is the French colonies variable, albeit without altering the main story (Models 5–6). This suggests that the French influence on its former colonies deters China from maintaining a closer aid relationship with those countries. The interpretation of this result is open to further research.

To carry on the robustness checks, we take advantage of the special nature of the AidData dataset, which compiles not only the value of different forms of aid but also the number of projects by aid type, which can be accommodated by the count data model¹⁰. The model is estimated using a random effect Poisson model with time dummy variables. The results support the earlier story: the predominance of self-interest considerations with a line of business specialisation of trade flows—ODA for trade flows and OOF for natural resources long-terms commitments (Table A.3 in the Appendix, columns 5–6).

We test the choice of the Tobit model in comparison to using OLS regressions with only positive values for the dependent variable. As argued before, taking the special nature of the dependent variable into account, a simple linear regression would be biased and inconsistent due to the large share of zeroes, which contradicts the assumption of a normal distribution (Hill et al. 2007). The results show that the second-stage coefficients for the Chinese aid flows start to possess considerable differences to our baseline model (Table A.3 in the Appendix, columns 1 and 2). This result is due to the fact that the Chinese dependent variable possesses a large share of zero observations, as seen in Table 3.

Applying the OLS regressions on the OOF shows that the even higher censored nature of the dependent variable leads to even stronger differences. The results are inconsistent and

10 A large share of projects of the AidData dataset has no USD value. Out of 2605 bilateral projects, only 1495 projects include a USD value with 995 of those being ODA-like projects, 198 OOF, 276 VF and 26 official investment. Considering those would, however, mitigate the consistency of the robustness check. This study therefore refrains from doing so and includes only projects with a positive USD in the regression.

Table 6: Additional Control Variables

	(1) ODA per capita	(2) OOF per capita	(3) ODA per capita	(4) OOF per capita	(5) ODA per capita	(6) OOF per capita
Elections	-0.305	0.142***	-0.379**	0.138***	-0.385**	0.102***
ln Anticorruption (t-1)	(0.191)	(0.048)	(0.189)	(0.046)	(0.188)	(0.037)
	-0.008	-0.002	-0.010	-0.001	-0.013	-0.005
Export bias (t-1)	(0.009)	(0.004)	(0.009)	(0.004)	(0.009)	(0.003)
	0.086*	-0.043*	0.081*	-0.038	0.089**	-0.026
	(0.047)	(0.026)	(0.045)	(0.024)	(0.044)	(0.019)
Import bias (t-1)	0.079	0.156*	0.085	0.101	0.093	0.175***
	(0.084)	(0.085)	(0.084)	(0.085)	(0.084)	(0.067)
ln GDP pc (t-1)	0.066	0.013	0.096	0.011	0.005	-0.003
ln Life Expectancy (t-1)	(0.122)	(0.049)	(0.120)	(0.046)	(0.115)	(0.036)
	-0.020*	-0.012**	-0.016	-0.014**	-0.008	-0.005
ln Disaster	(0.012)	(0.005)	(0.013)	(0.006)	(0.012)	(0.004)
	-0.016	0.004	-0.016	0.004	-0.015	0.002
	(0.011)	(0.005)	(0.011)	(0.005)	(0.011)	(0.004)
ln Subsoil Wealth Growth (t-1)	-0.002	0.015***	-0.001	0.013**	0.003	0.013***
	(0.011)	(0.006)	(0.010)	(0.005)	(0.010)	(0.004)
	-0.421	-0.326*	-0.415	-0.304*	-0.424	-0.289**
	(0.376)	(0.170)	(0.350)	(0.160)	(0.351)	(0.138)
ln Population (t-1)	-0.174**	0.040	-0.163**	0.050	-0.232***	-0.013
	(0.083)	(0.038)	(0.082)	(0.037)	(0.079)	(0.029)
ln DAC ODA pc (t-1)	0.164**	0.029	0.190**	0.026	0.177**	0.029
	(0.082)	(0.032)	(0.080)	(0.031)	(0.079)	(0.026)
UN voting (t-1)	0.259	0.033				
	(0.825)	(0.343)				
Landlocked			0.188	-0.103		
Colony France			(0.212)	(0.091)		
					-0.530***	-0.192***
Year dummies					(0.167)	(0.065)
	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No
Observations	535	535	546	546	546	546

insignificant, whereas our baseline results of the OOF regressions using the Tobit model were robust and significant. These results clearly support our case that ignoring the censored nature of the aid data can be grossly in error. We conclude that the censored nature of the data should not be neglected, and that our choice for the Tobit model is justified. The aid allocation literature has not reached a consensus on the most suitable estimation method. It is therefore important to ascertain whether our results remain robust to a method that is alternate to the Tobit. To carry on this experiment, we take advantage of the special nature of the AidData dataset which compiles not only the value of different forms of aid but also the number of projects by aid type, which can be accommodated by the count data model (see Table A.3). The model is estimated using a random effect Poisson model. The results support most of the earlier findings.

4. Conclusion and implications

This paper investigates whether China is employing aid to advance its business interests and create an exclusive economic sphere of influence in Africa, without regard for African economic and institutional development. The analysis of a comprehensive dataset covering Chinese aid into Africa sheds a picture of aid allocation that is consistent with this idea. We identify patterns that are in line with the hypothesis that Chinese aid is used to divert trade flows from and into recipient countries towards China, making selected countries more dependent on China as a core economy. More specifically, we argue that Chinese aid distribution is consistent with the premise that China employs ODA to bolster structural relationships with recipient country regimes, allowing Chinese firms to gain privileged access to their resources. Since such efforts run counter to principles of good and accountable governance, we expected a negative relation between ODA and governance quality. The observed negative association between ODA and democratic or non-corrupt governance is in line with this. In contrast, we argued that OOF is better suited to facilitate access into recipient countries' markets. For this reason, we expected it to be deployed to help Chinese firms boost exports into recipient countries with strong growth potential, which is boosted by better institutions. Indeed, we find that OOF is positively associated with institutional quality. Our results are consistent with the idea that China is using different forms of aid strategically to help its firms gain access to the African continent, and to enhance African economic reliance on China. In this narrative, aid is part of the current rise of China as a global player and adds to the growing influence China has beyond its borders.

A couple of caveats are in order. First, while our results conform what one would expect if China were deploying aid strategically to favour its business interests, we note that this is no definitive proof that China is allocating aid on this basis. Since we have no access to information on the decision-making process behind Chinese aid, we can only indirectly infer motivations out of the resulting aid allocations. Nevertheless, the patterns we observe are consistent with the narrative. Second, we note that our analysis does not touch upon the question whether China's approach to aid is in any way exceptional compared to traditional donors. We have merely sought to show that the vast increase in Chinese aid flows into Africa is allocated in a way that it facilitates Chinese business interests, which is of interest in itself. Chinese activity in Africa serves to divert the continent's traditional focus on European markets away towards Asia. By making a set of African countries increasingly dependent on China, China eats into Western spheres of economic and institutional influence. The consequences of these changes for the development prospects of Africa in the longer run are yet to be determined, but they are likely to be significant.

Supplementary material

Supplementary material is available at *Journal of African Economies* online.

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Appendix

Table A.1: Data description and sources

<i>Variable</i>	<i>Definition</i>	<i>Source</i>
<i>Aid Flows</i>		
<i>ln ODA share</i>	(log) Recipient country's share of total Chinese ODA flows to Africa in year t	(Strange et al. 2017)
<i>ln ODA per capita</i>	(log) Chinese ODA per capita amount in year t of recipient country r (in constant 2011 USD)	(Strange et al. 2017; World Bank 2017 Feenstra et al. 2015)
<i>ln OOF share</i>	(log) Recipient country's share of total Chinese OOF flows to Africa in year t	(Strange et al. 2017)
<i>ln OOF per capita</i>	(log) Chinese OOF per capita amount in year t of recipient country r in constant 2011 USD	(Strange et al. 2017; World Bank 2017 Feenstra et al. 2015)
<i>ln Vague share</i>	(log) Recipient country's share of total Chinese Vague flows to Africa in year t	(Strange et al. 2017)
<i>ln Vague per capita</i>	(log) Chinese Vague per capita amount in year t of recipient country r (in constant 2011 USD)	(Strange et al. 2017; World Bank 2017 Feenstra et al. 2015)

Continued

Table A.1: Continued

<i>Variable</i>	<i>Definition</i>	<i>Source</i>
<i>ln Total Aid share</i>	(log) Recipient country's share of total Chinese aid flows to Africa in year t	(Strange et al. 2017)
<i>ln Total Aid per capita</i>	(log) Chinese Total Aid per capita amount in year t of recipient country r (in constant 2011 USD)	(Strange et al. 2017; World Bank 2017 Feenstra et al. 2015)
<i>Need</i>		
<i>ln GDP per capita (t-1)</i>	(log) GDP per capita (mil. 2011 USD) lagged by one year	(World Bank 2017)
<i>Life Expectancy (t-1)</i>	Life expectancy at birth, total (years) lagged by one year	(World Bank 2017)
<i>ln Disaster</i>	(log) Number of people affected by a disaster (either natural, technological or complex)	(Centre for Research on the Epidemiology of Disasters 2017)
<i>Merit</i>		
<i>Elections dummy</i>	Democracy dummy variable: 1 = the chief executive is either directly or indirectly elected (i.e., chosen by people who have been elected)	(Przeworski et al. 2013)
<i>Anticorruption (t-1)</i>	Control of corruption, estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)	(Kaufmann et al. 2010), updated 2016
<i>Self-Interest</i>		
<i>Exportbias (t-1)</i>	Recipient r 's exports to China volume in year $t-1$ /Total recipient r 's exports in year $t-1$, measured on the volume of commodity exports and imports (in mil. 2011 USD)	(UNSTAT 2017)
<i>Importbias (t-1)</i>	Recipient r 's imports from China volume in year $t-1$ /Total recipient r 's imports in year $t-1$, measured on the volume of commodity exports and imports (in mil. 2011 USD)	(UNSTAT 2017)
<i>ln Oil (constant)</i>	Oil wealth is calculated as present value (2005) of rents from extraction of oil, discounted at 4 percent, and over the exhaustion time of the resource (in mil. 2011 USD)	(World Bank 2017)
<i>Growth per capita (t-1)</i>	Output-side real GDP (in mil. 2011 USD) per capita growth (in %), lagged by one year	(World Bank 2017)
<i>UN Voting</i>	Lijphart's index of agreement between a recipient r and China: 1 if a state always agrees with China, 0 if it always votes the other way. If one state votes yes and the other abstains, the vote is coded as .5, lagged by one period	(Voeten 2012)

Table A.1: Continued

<i>Variable</i>	<i>Definition</i>	<i>Source</i>
Controls		
<i>Population (t-1)</i>	Population in millions, lagged by one year	(Feenstra et al. 2015; World Bank 2017)

Table A.2: Summary statistics

<i>Variable</i>	<i># Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Aid Flows					
<i>ln ODA share</i>	700	0.528	0.827	0.000	4.389
<i>ln ODA per capita</i>	700	0.801	1.174	0.000	6.422
<i>ln OOF share</i>	700	0.259	0.821	0.000	4.580
<i>ln OOF per capita</i>	700	0.276	0.899	0.000	4.964
<i>ln Vague share</i>	700	0.389	0.858	0.000	4.324
<i>ln Vague per capita</i>	700	0.513	1.131	0.000	6.574
<i>ln Total Aid share</i>	700	0.553	0.834	0.000	3.963
<i>ln Total Aid per capita</i>	700	1.348	1.520	0.000	6.880
Need					
<i>ln GDP per capita (t-1)</i>	675	7.111	1.119	5.283	10.187
<i>Life Expectancy (t-1)</i>	686	53.662	8.217	37.813	72.984
<i>ln Disaster</i>	700	7.320	4.901	0.000	16.525
Merit					
<i>Elections dummy</i>	689	0.853	0.354	0.000	1.000
<i>Anticorruption (t-1)</i>	689	-0.622	0.598	-1.924	1.250
Self-Interest					
<i>Export Bias</i>	637	5.246	1.793	0.000	7.581
<i>Import Bias</i>	637	6.020	0.924	0.000	7.376
<i>ln Oil (constant)</i>	602	7.742	11.236	0.000	27.079
<i>Growth per capita (t-1)</i>	673	0.019	0.069	-0.973	0.457
<i>UN Voting</i>	675	0.926	0.041	0.667	1.000
Controls					
<i>Population (t-1)</i>	699	2.074	1.491	-2.525	5.125

Table A.3: Results for alternative Models

	<i>Two stage estimation</i>				<i>Count data</i>	
	(1) ODA	(2) ODA	(3) OOF	(4) OOF	(5) ODA	(6) OOF
	<i>Probit</i>	<i>OLS</i>	<i>Probit</i>	<i>OLS</i>		
<i>ln GDP pc (t-1)</i>	-0.030 (0.039)	0.156 (0.125)	0.028 (0.021)	-0.051 (0.363)	-0.027 (0.125)	-0.882** (0.350)
<i>Life Expectancy (t-1)</i>	-0.008** (0.003)	-0.028** (0.012)	-0.008*** (0.002)	-0.001 (0.033)	-0.030** (0.015)	-0.094** (0.036)
<i>ln Disaster</i>	0.000 (0.005)	-0.012 (0.012)	0.004 (0.003)	-0.019 (0.048)	0.002 (0.009)	0.011 (0.025)
<i>Elections</i>	-0.071 (0.070)	-0.184 (0.176)	0.089*** (0.022)	1.348 (1.569)	-0.007 (0.158)	1.898* (1.076)
<i>ln Anticorruption (t-1)</i>	-0.000 (0.003)	0.002 (0.009)	-0.002 (0.002)	-0.034 (0.022)	0.002 (0.008)	0.023 (0.021)
<i>ln Export bias (t-1)</i>	0.039** (0.018)	-0.032 (0.055)	-0.012 (0.012)	0.190 (0.180)	0.116** (0.048)	-0.170 (0.197)
<i>ln Import bias (t-1)</i>	0.031 (0.036)	0.135 (0.108)	0.092** (0.037)	0.628 (0.660)	0.219** (0.108)	0.936** (0.448)
<i>ln Subsoil wealth</i>	-0.001 (0.003)	0.006 (0.010)	0.006*** (0.002)	0.040 (0.040)	-0.019 (0.013)	0.141*** (0.036)
<i>Growth (t-1)</i>	-0.094 (0.190)	-0.345 (0.389)	-0.174* (0.102)	-1.394 (1.482)	0.063 (0.291)	1.764*** (0.589)
<i>ln Population (t-1)</i>	-0.091*** (0.032)	-0.006 (0.095)	-0.005 (0.018)	-0.072 (0.282)	-0.030 (0.106)	-0.142 (0.312)
<i>ln DAC ODA share (t-1)</i>	0.197*** (0.059)	0.304** (0.128)	0.072** (0.029)	0.146 (0.350)	0.179* (0.105)	0.737*** (0.160)
<i>Year dummies</i>	Yes	Yes**	Yes	Yes	No	No
<i>Country dummies</i>	No	No	No	No	No	No
<i>Observations</i>	546	343	546	89	546	546
<i>Countries</i>	42	42	42	42	42	42