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Do authoritarian regimes receive more Chinese development finance than democratic ones? Empirical evidence for Africa

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Do Authoritarian Regimes Receive More Chinese Development Finance than Democratic Ones? Empirical Evidence for Africa

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Abstract

This study is part of an emerging literature that aims to shed light on China's development finance activities in Africa using quantitative estimation techniques. This paper empirically investigates whether African authoritarian regimes receive more Chinese development assistance than democratic ones, both in absolute and relative terms. I use three different measures of democracy/autocracy which allows me to check whether my results depend on the specific indicator chosen. The OLS results suggest that Chinese development finance does not systematically flow to more authoritarian countries, controlling for strategic, economic, political, institutional and geographic confounding factors. The results are not driven by the specific democracy indicator used in the analysis. The findings remain virtually unchanged if I reduce the sample to Sub-Saharan Africa only. Furthermore, the results stand up to several robustness checks, including FE, RE and instrumental variable estimation.

Key words: Development Finance • Foreign Aid • China • Africa • Autocracy • Democracy

Discipline: Development Economics • Political Economy • Public Policy

JEL Classification Numbers: F35 • H10 • O11 • O55

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1. INTRODUCTION

Since the beginning of the 21ˢᵗ century the rules of the international aid game have slowly and quietly begun to change. Emerging economies from the Global South (such as China, United Arab Emirates (UAE), India, Brazil, Saudi Arabia, Venezuela or Kuwait) increasingly strengthen their economic and political relationships with developing countries, including those in Africa. Woods (2008) points out that "a silent revolution is taking place in the development assistance regime" (p. 16). Recent qualitative and quantitative evidence suggests that China must be considered the biggest and most influential actor amongst the emerging donors (Bräutigam, 2009; Dreher & Fuchs, 2015).

Nowhere else are China's intensified economic and political relationships with the developing world more visible than in Africa. Ajakaiye and Kaplinsky (2009) are convinced that "today it is inconceivable, from the African end at least, that Africa's economic and political destiny could be discussed without reference to China" (p. 479). A burgeoning literature has discussed the potential opportunities and challenges of China's economic embrace of Africa (Alden, 2005; Biggeri & Sanfilippo, 2009; He, 2013; Manning, 2006; Taylor, 2007a; Tull, 2006; Zhao, 2014). One specific strand of that increasing literature is qualitative work that labels Chinese development assistance as rogue aid that is guided merely by selfish motives and not by needs-based considerations (Naím, 2007; Taylor, 2007a, 2007b; Tull, 2006).

Sophisticated econometric work on the subject matter is sparse through a lack of comprehensive aid statistics from numerous emerging (non-DAC) donors. The Chinese government treats its aid allocation as a state secret. A detailed geographic and sectoral breakdown of Beijing's foreign aid and other forms of state financing is therefore not publicly available (Bräutigam, 2009; Huse & Muyakwa, 2008). Very recently, Strange, Parks, Tierney, Fuchs and Dreher (2013) have developed an open-source data collection technique – AidData's Tracking Underreported Financial Flows (TUFF) methodology – that aims to provide a more complete picture of non-DAC development finance activities, including China.

It may therefore not come as a surprise that the quantitative literature on China's development finance to developing countries is sparse (Bader, 2015; Dreher & Fuchs, 2015; Dreher, Fuchs, Parks, Strange, & Tierney, 2015; Strüver, 2016). This study is among the first to shed light on China's development finance activities in Africa using quantitative estimation techniques. My study is similar to the study carried out by Dreher et al. (2015). The authors systematically analyse the determinants of China's

official financing in Africa applying pooled OLS estimation methods. In contrast, my paper is more specific and seeks to answer the research question: *Do African Authoritarian Regimes receive more Chinese Development Assistance than Democratic Ones?* In order to answer this question, I first focus on the *absolute* amount of Chinese official development finance. Then I create a proxy which measures the *relative* amount of Chinese official development finance vis-à-vis official development finance from the traditional DAC donor community. This variable therefore measures the difference between the relative share of Chinese aid and the relative share of traditional DAC aid for each African country. I use three different proxies for degree of democracy/autocracy in the recipient country, which allows me to check whether my results depend on the specific indicator chosen. Besides OLS estimation, I use FE and RE models to account for unobserved heterogeneity and I perform a 2SLS estimation model to account for the possibility of reverse causality.[1] The analysis includes 53 countries and covers the time period 2000-2011.[2]

My OLS results suggest that both *absolute* and *relative* Chinese official development finance does not systematically flow to more authoritarian countries, controlling for strategic, economic, political, institutional and geographic confounding factors. The two major determinants of Chinese development finance that are almost always statistically significant are: (i) whether a country recognises the People's Republic of China (PRC) or Taiwan (Republic of China, ROC) and (ii) whether English is considered one of the three most common languages in the recipient country. When accounting for the possibility of reverse causality, the 2SLS results suggest that both population size and oil rents as a percentage of GDP have a strong positive relationship with the amount of absolute Chinese official finance a country receives. Furthermore, I do not find a strongly negative and highly statistically significant relationship between the institutional quality of a recipient country and Chinese official finance, both in absolute and relative terms. As a result, my results provide further statistical evidence that equating Chinese development assistance with "rogue aid" (Naím, 2007) is unfounded.

The paper is structured as follows. In the next section I briefly provide some background information with regard to the subject. Section 3 introduces the data and discusses the methodology. I present my main empirical results using OLS regressions in Section 4. Section 5 investigates the robustness of my results using FE and RE estimation as well as instrumental variable regression. Section 6 concludes.

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[1] A vast amount of theoretical literature suggests that Chinese development finance could deteriorate good governance and the democratisation process in respective African recipient countries (Manning, 2006; Naím, 2007; Taylor, 2007a, 2007b; Tull, 2006; Zhao, 2014).

[2] The analysis therefore covers all African countries except for South Sudan.

2. BACKGROUND INFORMATION

This section will provide some background information on the subject matter. Section 2.1 briefly reviews the literature on development finance from non-DAC donors. Section 2.2 discusses the theory between Chinese development finance and political regime characteristics of recipient countries. Section 2.3 highlights a range of possible determinants of China's aid allocation in Africa.

2.1. Rise of Development Finance from non-DAC donors

While extensive literature exists on the determinants of aid allocation by the *traditional* Western (DAC) donors (Alesina & Dollar, 2000; Alesina & Weder, 2002; Dreher, Sturm, & Vreeland, 2009; Fleck & Kilby, 2006, 2010; Kuziemko & Werker, 2006; Neumayer, 2003a, 2005; Reynaud & Vauday, 2009), studies that have empirically examined the determinants of aid allocation by *emerging* donors is surprisingly sparse. With the arrival of better availability of foreign data for emerging donors, some scholars have recently started to analyse the aid allocation of non-DAC donors using quantitative estimation methods.[3] Neumayer (2003b, 2004) examines the factors that determine the aid allocation by Arab countries and multilateral agencies to recipient countries worldwide. Fuchs and Vadlamannati (2013) empirically assess India's foreign aid motives for a set of 125 countries over the 2008-2010 period. A study by Dreher, Nunnenkamp and Thiele (2011) compares the allocation of aid between DAC and non-DAC donors. Bermeo (2011) compares differences in preferences between democratic donors and authoritarian donors (such as Kuwait, Saudi Arabia or United Arab Emirates).

In this paper, I focus on *Chinese* development finance in Africa for three reasons. First, China can be regarded as the largest and possibly most influential emerging donor at the time of writing. Second, the African continent is by far the highest aid-dependent continent in the world. Third, data on Chinese aid has not been publicly available until recently. Strange, Parks, Tierney, Fuchs and Dreher (2013) have developed an open-source data collection technique – AidData's Tracking Underreported Financial Flows (TUFF) methodology – that assembles a first-of-its-kind, project-level dataset on China's official financing activities in Africa from 2000 onwards.

Kitano and Harada (2015) estimate China's foreign aid between 2001 and 2013 that is comparable to net ODA figures. Using both OECD data and AidData, Kilama (2016) examines how aid flows of emerging donors, including China, affect the fiscal behaviour of African recipient governments. Two

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[3] Here, I specifically refer to AidData, a new dataset of foreign assistance. AidData covers more bilateral and multilateral donors and more types of aid than existing datasets while also improving project-level information about the purposes and activities funded by aid (see Tierney et al., 2011).

very recent studies have analysed the motivations behind China's increasing foreign aid and other forms of state financing (Dreher & Fuchs, 2015; Dreher et al., 2015). Dreher and Fuchs (2015) discuss the allocation and motivations of China's development aid for the 1956-2006 period.[4] Moreover, they compare the allocation of China's project aid to that of the OECD-DAC and other emerging donor countries in a cross-section of 132 recipient countries over the 1996–2005 period. Their findings suggest the following:

> "While political considerations shape China's allocation of aid, China does not pay substantially more attention to politics compared to Western donors. What is more, China's aid allocation seems to be widely independent of recipients' endowment with natural resources and institutional characteristics. Overall, denoting Chinese aid as 'rogue aid' seems unjustified." (Dreher & Fuchs, 2015, p. 988)

A contribution by Dreher et al. (2015) has studied the determinants of Chinese foreign aid and other official forms of state financing in Africa over the time period 2000-2012 using pooled OLS regression estimation techniques. Controlling for year and country fixed effects, their results suggest that Beijing's motives for delivering foreign aid and other forms of state finance do not differ much when compared to the motives behind the allocation of Western official finance. Moreover, the authors also test whether Chinese development finance is strongly correlated with the level of democracy/autocracy in the respective recipient country. Using the polity2 variable from the Polity IV dataset (Jaggers & Gurr, 1995; Marshall, 2014), the authors do not find a strong relationship. In contrast to Dreher et al. (2015), I will use three different proxies for degree of democracy/autocracy in the recipient country which allows me to check the extent to which my results depend on a specific indicator of democratic/authoritarian regime characteristics. I will also go beyond the simple OLS estimation model to account for potential endogeneity issues (which will be discussed more in detail in Section 2.2 and Section 3).

2.2. (Chinese) Non-DAC Development Finance and Authoritarian Regime Survival

Traditional research on authoritarianism focuses on domestic roots and characteristics (Bueno de Mesquita, Smith, Siverson, & Morrow, 2003; Gandhi & Przeworski, 2007; Geddes & Zaller, 1989; Svolik, 2012; Tullock, 1987; Wintrobe, 1990). Moreover, the bulk of research that seeks to understand the external determinants of regime type has been strongly biased toward democracy. Morgenthau (1962) argues that a convergence of donor interests and recipient needs will determine the cross-country allocation of aid. Based on his early theory, several studies have analysed the motivations

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[4] For an extensive overview of China's aid, FDI and trade flows to Africa, see Broich and Szirmai (2014).

of democratic donors' aid allocation. A broad consensus has emerged that democratic donors mainly target 'democracy aid' to countries which will likely care about both transitions to democracy and maintaining or consolidating existing democratic regimes (Bermeo, 2011; Nielsen, 2013; Nielsen & Nielson, 2010). A separate strand of literature empirically examines the *effects* of democratic aid and the probability of democratic transition yielding ambiguous results (Bueno de Mesquita & Smith, 2007; Djankov, Montalvo, & Reynal-Querol, 2008; Dunning, 2004; Goldsmith, 2001; Knack, 2004).

As authoritarian powers such as China, Russia and several Arab countries re-emerge as powerful players on the international scene, scholars increasingly debate as to (i) whether the rise of influential autocratic players goes hand in hand with "autocracy promotion" on a global scale (Ambrosio, 2009; Bader, Grävingholt, & Kästner, 2010; Kagan, 2008; Way, 2015) and (ii) to what extent their development assistance is mainly driven by commercial and political selfishness (Manning, 2006; Naím, 2007; Villanger, 2007; Woods, 2008). The emergence of new authoritarian powers in the international aid game somewhat resembles the foreign aid game between the United States and the Soviet Union during the Cold War. During that time, both the United States and the Soviet Union used foreign aid and military assistance to extend their influence as far as possible, in an attempt to prevent the recipient country from switching political ideology (Beim, 1964). While the international aid game during the Cold War could largely be modelled along the communism-capitalism dimension, the contemporary aid game may be characterised along the democracy-autocracy dimension. Similar to democratic donors who mainly target their aid flows towards democratic recipient countries, autocratic donors have a "theoretical interest in supporting authoritarianism elsewhere to prevent democratic dominos" (Bader, 2015, p. 23).

Until recently, it has been very difficult to analyse this subject matter using quantitative techniques as little data existed on aid from emerging and non-democratic donors. Both Dreher et al. (2011) and Bermeo (2011) were among the first studies that systematically compared (i) the aid allocation of non-DAC donors versus DAC donor countries and (ii) the aid allocation of democratic versus autocratic donors. Dreher et al. (2011) find that, even though non-DAC and DAC donors behave similarly in several respects, new donors care, on average, less for recipient need than old donors. Bermeo's (2011) study suggests that authoritarian donors tend to disproportionately favour authoritarian recipients: "they give to more authoritarian recipients and give more on average to authoritarian recipients than to democratic recipients" (p. 2024). However, both studies suffer from one major limitation: in both cases, the analysis excludes China as at the time, data on Chinese foreign

aid was not readily available. A contribution by Vanderhill (2012) concludes that Iran, Russia and Venezuela actively promote autocracy in other states. There exists very little empirical work, however, that analyses the nature of whether autocratic states are systematically targeted by Beijing's foreign assistance. Bader (2015) suggests that

> "Beijing has good reasons to work against a liberal order that facilitates challenges to authoritarian governments. China opposes both specific instances of liberal intervention and efforts to create international norms that favor intervention in the affairs of authoritarian states. Shielding existing authoritarian states undermines the creation of liberal-interventionist norms." (p. 24)

The successful overthrow of an autocratic regime could lead to a domino effect whereby pro-democracy movements at the grassroots level may increasingly challenge authoritarian regimes elsewhere. As a result, successful democratic transitions in developing countries could undermine the legitimacy of remaining authoritarian regimes (Ambrosio, 2009; Kagan, 2008).

A somewhat related question to the research question addressed in this paper is why Chinese development finance and foreign policy in general could contribute to the survival of authoritarian regimes irrespective of whether Beijing actively seeks to promote authoritarianism abroad. It is based on a vast strand of theoretical literature that takes a critical stance towards China's increasing political and economic presence in developing countries, most notably in Africa. Alden (2005) believes that the rise of Chinese development assistance could theoretically increase the leverage for African autocrats to maintain their hold on power. Tull (2006) is convinced that "Beijing is prepared to defend autocratic regimes that commit human rights abuses and forestall democratic reforms for narrow ends of regime survival" (p. 476). The increasing availability of financial funding from non-DAC donors – which is not subject to political conditionality – could entrench poor standards of governance, accountability and protecting human rights in recipient countries, most notably Africa (Manning, 2006; Taylor, 2006, 2007a, 2007b; Zhao, 2014). In a similar vein, Naím (2007) claims that

> "states like China (…) are regimes that have the cash and the will to reshape the world into a place very different from where the rest of us want to live. (…) If they continue to succeed in pushing their alternative development model, they will succeed in underwriting a world that is more corrupt, chaotic, and authoritarian."

While Western aid conditionality has given African political elites less leeway to pursue undemocratic policies, Collier (2007) argues that

> "[governance] in the bottom billion is already unusually bad, and the Chinese are making it worse, for they are none too sensitive when it comes to matters of governance." (p. 86)

In response to those accusations, Bräutigam (2009) claims that "China's aid does not seem to be particularly toxic" and "the Chinese do not seem to make governance worse." (p. 21). Bader's (2015) empirical study is among the first to provide quantitative evidence on whether or not Chinese development assistance increases the stability of authoritarian clients. Her study demonstrates that Chinese bilateral interactions have little effect on the longevity of autocratic regimes. My research question turns Bader's research question on its head by asking whether authoritarian regimes receive more Chinese development assistance than democratic ones. In order to account for the possibility of reverse causality I will run a 2SLS estimation model in the robustness section.

2.3. Possible Determinants of China's Development Finance

One of the major reasons for China's longstanding relationship with many African countries is related to China's foreign policy: to garner support for the 'One China Policy' (Alden, 2005; Bräutigam, 2009, 2011b; Rich, 2009; Taylor, 1998; Wenping, 2007). This policy can be considered the major exception to China's position of not attaching political conditionality to foreign aid. In order to limit Taiwan's efforts to become an influential player in Africa, Beijing's aid negotiation with respective African recipient countries follow diplomatic ties. The absence of diplomatic ties with Taiwan is a precondition for any fruitful diplomatic relations with Beijing. Numerous historical examples have shown that diplomatic ties are cut off and economic aid is suspended if a recipient country recognises the government in Taipei as representing China. As of today, only three African countries have diplomatic ties with Taiwan, namely Burkina Faso, Sao Tomé and Principe as well as Swaziland.

In a similar vein, a recipient country's alignment with the People's Republic of China's diplomatic interests can be positively associated with more development assistance coming from China. In fact, voting alignment in the United Nations General Assembly (UNGA) or political support in international financial institutions can capture the degree of political alignment between donor and recipient country (Andersen, Hansen, & Markussen, 2006; Dreher & Fuchs, 2015; Kilby, 2009, 2011). This hypothesis is based on previous studies that found a strong link between foreign aid received and voting alignment in the UNGA, where 10 out of 15 seats are held by rotating members serving two-year terms (Dreher et al., 2009; Kuziemko & Werker, 2006; Rai, 1980). China increasingly garners support for its commitment to its foreign policy principle of non-aggression and non-interference in domestic political affairs. Empirical findings by Strüver (2016) suggest that governments receiving foreign aid from China are more likely to demonstrate high levels of voting alignment with China.

As the Chinese economy currently finds itself in an energy transition, China's foreign aid and other forms of state financing may increasingly be driven by geostrategic motivations, namely the need to secure access to natural resources. In the mid-1980s, China was the largest oil exporter in East Asia. Only a few years later, in 1993, China became a net oil importer and had become the second largest net oil importer in 2009, just behind the United States (Lee, 2012; Taylor, 2006; Zweig & Jianhai, 2005). Between 2002 and 2025, China's energy consumption is expected to rise by more than 150 percent (Klare & Volman, 2006). Obtaining raw materials and energy is crucial for the Beijing administration in order to maintain their impressive economic growth trajectory. As the scramble for natural resources becomes increasingly competitive, Beijing is eager to secure its natural resource supply for the near and distant future (Moyo, 2012).

Another major motive for China's growing presence on the African continent is economic. Beijing's development finance has increasingly taken a 'commercial or corporatist orientation'. Econometric results by Biggeri and Sanfilippo (2009) suggest that China's external flows (aid, FDI and trade) are highly interwoven. According to Broich and Szirmai (2014), the relationships between Chinese and Western activities on the African continent are primarily competitive with regard to sectors in which they operate. When taking a dynamic perspective, there is more complementarity. Many Chinese activities fill gaps created by the withdrawal or change of focus of Western actors.

A selection of case studies suggests that China uses its foreign aid to promote investment and trade activities in the recipient country. Mohan and Power (2008) observe that

> "although China continues to give foreign aid to selected African countries the emphasis today has shifted toward providing official loans with government subsidised interest rates and to developing partnership or joint ventures between companies from China and Africa" (p. 27).

Beijing's official finance (e.g. foreign aid and other official flows) is also aimed at promoting exports to recipient countries. Numerous case studies show that Chinese development assistance is tied to the purchase/procurement of Chinese goods (Berthélemy, 2011; Bräutigam, 2009).

With the fall of the Iron Curtain, foreign aid by Western donors and international organisations became increasingly oriented towards good governance and capacity building. Seminal contributions in the academic literature around that time highlighted that the returns to foreign aid are greatest in recipient countries with a sound institutional environment, regardless of whether 'environment' is defined in terms of prudent macroeconomic policy or a broader set of political and economic

institutions (Burnside & Dollar, 1997, 2000; World Bank, 1998). Among policymakers and international financial organisations it was argued that "aid should function as a lever for institutional (including political) change" (Molenaers, Dellepiane, & Faust, 2015, p.3).

Alden (2005) argues that "with the imposition of 'conditionalities' by Western donors that are designed to punish those regimes which violate standards and practices of good governance (economic and political), these regimes need to find an alternative source of foreign support" (p. 155). Chinese foreign aid is often viewed as such an alternative. Due to its upholding of non-interference in domestic affairs, China's motivations for allocating aid may not be linked to the quality of political institutions in the recipient countries. In fact, China's historic non-intervention foreign policy strategy may provide Beijing a comparative advantage in dealing with non-democratic governments (Naím, 2007; Taylor, 2007a, 2007b; Tull, 2006).

3. DATA AND METHODOLOGY

The main dependent variable of the empirical analysis is the (logged) monetary value of total Chinese development finance to a recipient country in a given year (in constant 2009 US$).[5] Since China does not officially report its foreign aid and other forms of state financing to the OECD-DAC, I need to rely on Aid Data's Chinese Official Finance database (version 1.2) introduced by Strange, Dreher, Fuchs, Parks and Tierney (2015). The authors obtain data on Chinese development finance through an open-source data collection technique – AidData's Tracking Underreported Financial Flows (TUFF) methodology.[6] Their database includes more than 2,000 projects in 50 recipient countries in Africa over the 2000-2011 period.

China's official development finance includes, among others, "official development assistance (ODA)-like" flows which consist of all grants, technical assistance and scholarships, loans with large grant elements, debt relief, and military aid under the condition that these projects are provided with development intent. China's official finance also consists of "other official flows (OOF)-like" flows such as loans and export credits that have little or no grant element or that are not primarily intended to improve economic development or welfare in the recipient country, as well as grants that are not intended for development purposes. It is important to include "OOF-like" flows in the analysis as the

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[5] In order to be able to take the logarithm of the monetary value of total Chinese development finance for each country and each year, I add 0.01 to each value as some countries do not receive any Chinese development finance in a given year.
[6] The methodology for tracking under-reported financial flows is documented and discussed in more detail by Strange, Parks, Perla and Desai (2015).

bulk of China's official development finance would not fall under the category of ODA (Bräutigam, 2011a). Official development finance, however, excludes *private* development finance such as worker remittances, FDI or portfolio equity.

Table 1 gives an overview of the major and minor recipients of Chinese official development finance in Africa over the 2000-2011 period. The volume is expressed in constant 2009 US dollars. Between 2000 and 2011, Ghana received by far the largest amount of Chinese development finance, namely US$ 11.6 billion. China's development finance is also highly skewed towards a few countries. The five major aid recipients (Ghana, Congo Republic, Ethiopia, Sudan and Angola) have received almost 50 percent of China's entire budget. At the other end, countries like Burkina Faso, Gambia, Sao Tome and Principe, and Swaziland did not receive any development finance from China. This is not a coincidence: all four countries had strong diplomatic ties with Taiwan throughout the period.[7]

My second dependent variable is a proxy for the relative importance of Chinese official development finance for an African recipient country. The variable is constructed as follows:

$$Relative\ CDF\ share_{i,t} = \frac{CODF_{i,t}}{Total\ CODF\ to\ Africa_t} - \frac{DACODF_{i,t}}{Total\ DACODF\ to\ Africa_t}$$

This variable therefore measures the difference between the relative share of Chinese official development finance and the relative share of traditional DAC official development finance[8] for each African country for all years during the 2000-2011 period. Positive (negative) shares for a specific recipient country correspond to a 'relative donor darling status' in the Chinese (Western) donor community. Table 2 shows the major and minor recipient of Chinese official development finance in relative terms. The major recipients of Chinese official development countries are displayed on the left of Table 2. Among the usual suspects are the resource-rich countries and largely authoritarian countries of Angola, Sudan, Equatorial Guinea and Zimbabwe. At the same time, however, Ghana and Mauritius, two prime examples of consolidated democratic governance in Africa, are among the major recipients of Chinese Development Finance in relative terms. In fact, Ghana is ranked first. While Ghana is often portrayed as a donor darling among the Western donor community (Hughes, 2005; Lawson, 2011), this is even more true for the Chinese donor community when looking at development finance in relative terms. North African countries like Egypt and Morocco, and Sub-Saharan African

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[7] Very recently, in the year 2013, the Gambian government has cut diplomatic ties with Taiwan.
[8] DAC official development finance includes both DAC official development assistance and other official flows.

countries like Tanzania, Mozambique, Uganda and Senegal receive a lower share of Chinese development finance than they receive from traditional DAC donors.

Table 1: Recipients of Chinese Official Development Finance in Africa, 2000-2011 (absolute)

Major			Minor		
Country	Volume (2009 US$ million)	% of CDF	Country	Volume (2009 US$ million)	% of CDF
Ghana	11600.00	16.44	Tunisia	84.10	0.12
Congo Republic	7810.00	11.07	Guinea-Bissau	83.90	0.12
Ethiopia	6560.00	9.30	Comoros	71.90	0.10
Sudan	5330.00	7.56	Benin	57.20	0.08
Angola	4230.00	6.00	Cape Verde	32.00	0.05
Equatorial Guinea	3770.00	5.34	Somalia	28.50	0.04
Zimbabwe	3490.00	4.95	Burkina Faso	0.00	0.00
Nigeria	3060.00	4.34	Gambia	0.00	0.00
Cameroon	3000.00	4.25	Sao Tome and Principe	0.00	0.00
South Africa	2330.00	3.30	Swaziland	0.00	0.00

Note: Chinese Official Finance between 2000 and 2011 amounted to US$ 70544.20 million (in constant 2009 dollars).
Source: Author's own calculations based on data from Strange, Dreher et al. (2015).

Table 2: Recipients of Chinese Official Development Finance in Africa, 2000-2011 (relative)

Major		Minor	
Country	Finance Share Difference (in percentage points)	Country	Finance Share Difference (in percentage points)
Ghana	7.84	Egypt	-4.90
Angola	6.91	Tanzania	-4.24
Sudan	5.40	Mozambique	-3.86
Equatorial Guinea	4.34	Uganda	-2.49
Zimbabwe	3.31	Morocco	-1.96
Cameroon	2.06	Burkina Faso	-1.91
Congo Republic	1.94	Senegal	-1.77
Algeria	1.77	Mali	-1.62
Nigeria	1.37	Malawi	-1.55
Mauritius	1.34	Madagascar	-1.40

Source: Authors' own calculations based on data from Strange, Dreher et al. (2015) and OECD/DAC Statistics database.

My main explanatory variable is the executive constraints (decision rule) variable from Polity IV (Jaggers & Gurr, 1995; Marshall, Jaggers, & Gurr, 2014), the most widely used dataset in political science according to Plümper and Neumayer (2010). I use the executive constraints variable because executive constraints can be considered the most important component for the combined

democracy-autocracy score (Gleditsch & Ward, 1997). According to Eckstein and Gurr (1975), decision rules are defined in the following manner:

> "Superordinate structures in action make decisions concerning the direction of social units. Making such decisions requires that supers and subs be able to recognize when decision-processes have been concluded, especially "properly" concluded. An indispensable ingredient of the processes, therefore, is the existence of Decision Rules that provide basic criteria under which decisions are considered to have been taken" (Eckstein & Gurr, 1975, p. 121).

At the operational level, this polity IV index (P4I) captures the extent of institutionalised constraints on the decision-making powers of chief executives, whether individuals or collectivities. The scale ranges between 0 and 7, whereby a value of zero corresponds to "unlimited authority" and a value of seven corresponds to "Executive Parity or Subordination" – e.g. accountability groups have effective authority equal to or greater than the executive in most areas of activity.[9] As a check for the robustness of our findings, I also use two other indices that capture democratic and autocratic state characteristics. This allows me to check the extent to which my results depend on a specific indicator of democratic/autocratic regime characteristics.

The second suitable explanatory variable for the purpose of this study is the polity2 index from the Freedom House data set. It needs to be emphasised that the authors of both Polity and Freedom House use similar definitions of democracy and both indices are based on subjective expert judgments. The Freedom House Index (FHI) provides values for all countries from 1972 onwards. It is "the second most used data set for measuring democracy after Polity" (Plümper & Neumayer, 2010, p. 215). The FHI is constructed in the following manner: both the civil liberties score[10] and the political rights score[11] by Freedom House are transformed into a 0-10 scale. Similarly, the polity2 index from the PolityIV dataset is transformed into a 0-10 scale. These three variables are then averaged into the FHI. The scale ranges from 0-10 where 0 is least democratic and 10 most democratic.

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[9] Examples for executive parity or subordination include, among others: (i) a legislature, ruling party, or council of nobles initiates much or most important legislation; (ii) the executive (president, premier, king, cabinet, council) is chosen by the accountability group and is dependent on its continued support to remain in office (as in most parliamentary systems); (iii) in multi-party democracies, there is chronic "cabinet instability".

[10] "Civil liberties allow for the freedoms of expression and belief, associational and organizational rights, rule of law, and personal autonomy without interference from the state" (FreedomHouse, 2016). Countries are graded between 1 (most free) and 7 (least free).

[11] "Political rights enable people to participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public office, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate" (FreedomHouse, 2016). Countries are graded between 1 (most free) and 7 (least free).

My third measure of democracy is the Vanhanen democratization index (Vanhanen, 2000). The Vanhanen Democratization Index (VDI) is based on two dimensions of democracy; public contestation (*competition*) and the right to participate (*participation*). The index is measured as the percentage of votes not cast for the largest party (*competition*) times the percentage of the population who actually voted in the election (*participation*). This product is divided by 100 to form an index that could theoretically vary from 0 (no democracy) to 100 (full democracy). In reality, however, the largest value is 49. Both the competition and participation dimension are weighted equally.[12] The index has been frequently used as an alternative proxy for democracy in the empirical literature (Chowdhury, 2004; Coppedge, Alvarez, & Maldonado, 2008; Neumayer, 2002). One major strength of the VDI is the large spatiotemporal coverage: it includes all independent contemporary countries of the world and their main predecessors since 1810, or from the year of independence.[13]

All three explanatory variables are different to the variable used by Dreher et al. (2015) who used the polity2 variable from the Polity IV dataset.[14] I can therefore test whether the results by Dreher et al. (2015) were driven by the specific indicator used in their analysis. Based on the qualitative, theoretical literature one would expect a strongly negative and highly statistically significant coefficient for the democracy index in the regression estimations.

A first exploration of the relationship between Chinese development finance and the average democracy level of African recipient governments is provided in the bivariate plots of Figure 1 and Figure 2. In Figure 1, I plot the average absolute Chinese development finance (in logarithmic form) against the average democracy level of African recipient government over the time period 2000-2011. Figure 1a uses the P4I as the measure of democracy. Figure 1b and Figure 1c use the FHI and the VDI, respectively. All three scatterplots show a weak, non-negative the relationship.

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[12] The values of *competition* and *participation* can be combined variously, depending on how much weight should be given to both competition and participation. Bollen (1979, 1980), for example, excludes the degree of electoral participation from his concept of democracy because he thinks that the percentage of the population voting in an election does not necessarily reflect the degree of political democracy.
[13] However, the VDI does suffer from several drawbacks. First, the index does not disaggregate the concept of democracy. Even though the index avoids problems of conceptual logic, it forgoes the "opportunity to flesh out the concept analytically and to provide a bridge between the abstract concept of democracy and its more concrete attributes" (Munck & Verkuilen, 2002, p. 15). Second, Plümper and Neumayer (2010) doubt "whether regime type can be measured solely based on election results data, which not only ignores important institutional features of democracies but also precludes a change in the democracy score between elections" (p. 215). Third, Vanhanen's objective index does not pay much attention to subjective judgments that shape the selection of "objective" indicators (Bollen, 1979, 1980, 1993; Hadenius, 1992; Munck & Verkuilen, 2002).
[14] The polity2 variable from the Polity IV Project is a 21-point index that proxies regime authority ranging from -10 (hereditary monarchy) to +10 (consolidated democracy).

Figure 1: Relationship between Absolute Chinese Development Finance and Democracy Level of African Recipient Governments, 2000-2011

a): Democracy Index from Polity IV
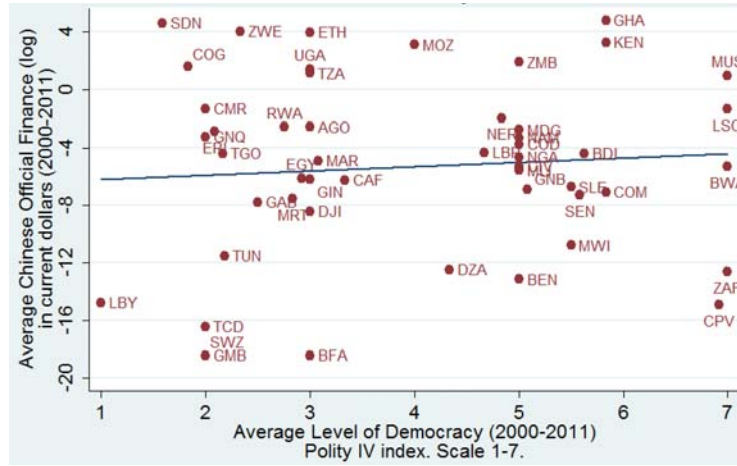
b): Democracy Index from Freedom House
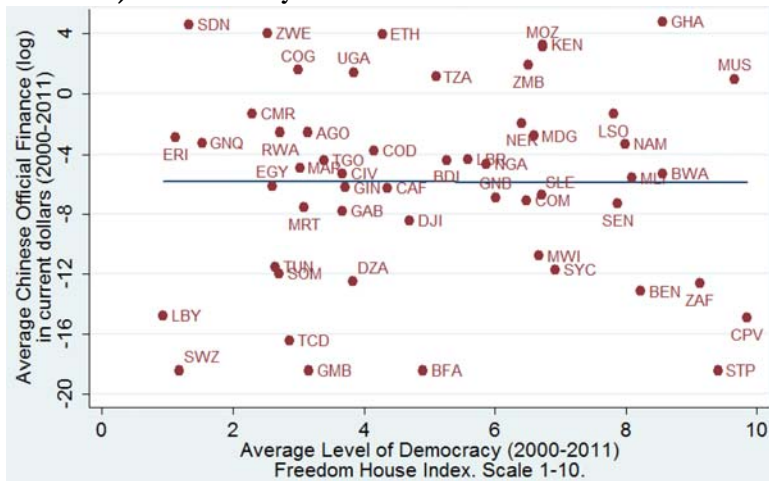
c): Democracy Index from Vanhanen
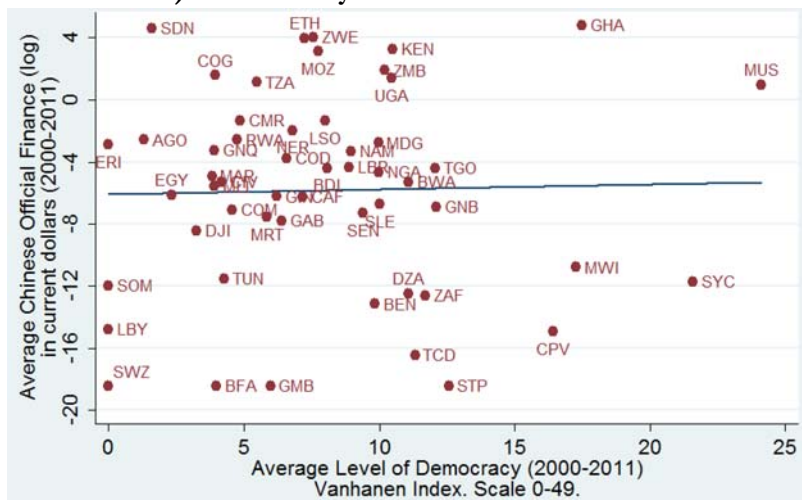
Figure 2: Relationship between Relative Chinese Development Finance and Democracy Level of African Recipient Governments, 2000-2011

a): Democracy Index from Polity IV
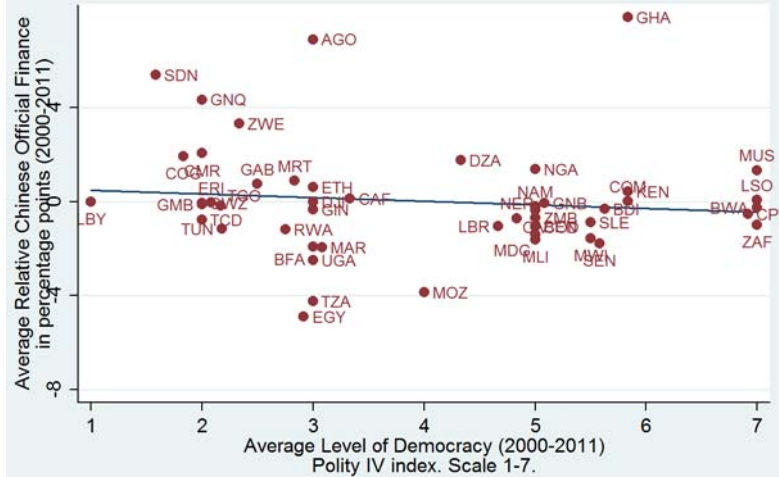
b): Democracy Index from Freedom House
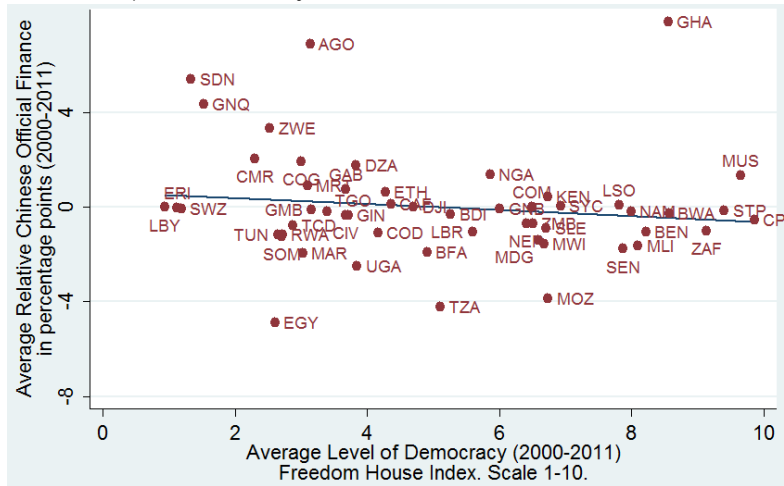
c): Democracy Index from Vanhanen
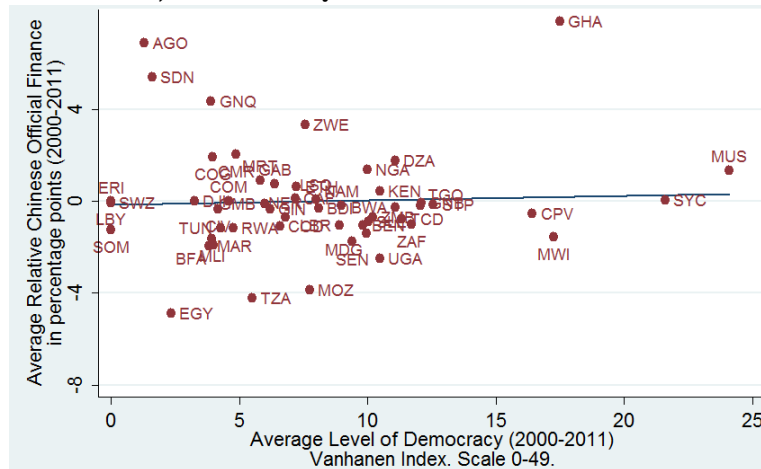
Figure 2 plots the relative share of Chinese development finance against the three democracy indicators. The bivariate relationship is slightly negative when using the Polity IV and Freedom House index as a proxy for democracy. The negative relationship disappears when the Vanhanen Democracy Index is used. Overall, the bivariate correlations presented in Figure 1 and Figure 2 do not suggest that Chinese development finance is systematically flowing to more authoritarian recipient countries as often suggested by anecdotal evidence.

Using OLS regression, I test whether the descriptive statistics confirm my first impressions. In the econometric analysis, I explore to what extent Chinese development finance systematically target more authoritarian regimes if compared to democratic ones controlling for other potential confounding factors. I use the yearly level of Chinese development finance in logarithmic form as the dependent variable. The main explanatory variable of interest is the democracy/autocracy score for each recipient country i over time t. Similar to Dreher et al. (2015), I lag the time-varying explanatory variable by one year to mitigate endogeneity concerns. The regression specification for the analysis is:

$$aid_{it} = \beta_0 + \beta_1 * democracy_{it-1} + \beta_2 * strategic_{it-1} + \beta_3 * economic_{it-1} + \beta_4 * geographic_{it-1} + \beta_5 * language_i + \beta_6 * institutional_{it-1} + \beta_7 * conflict_{it-1} + \tau_t + \varepsilon_{it}$$

where aid_{it} measures China's development finance to country i in year t; $democracy_{it-1}$ is the level of democracy as measured by the respective democracy index explained above. β_1 captures the relationship between Chinese development finance and the level of democracy in the recipient country. I also include vectors of time-varying covariates and one time-invariant covariate of Chinese development finance (English language), in order to control for potential confounding factors. τ_t represents year-fixed effects and ε_{it} is a stochastic error term.

$strategic_{it-1}$ is a vector of foreign policy variables. To test whether Beijing's One-China policy is a significant determinant of Beijing's aid allocation, I use a dummy variable that is equal to one if the respective African recipient government maintained diplomatic relationships with the Taiwanese government in a given year. The data comes from Rich (2009), Brautigam (2011a) and is updated by the author of this paper. I also employ a variable that accounts for voting alignment with China in the UNGA. For a given year, the index equals one if a state always agrees with China. It is equal to zero if it always votes the other way. If one state votes yes and the other abstains, the vote is coded as 0.5. Data on voting alignment comes from Bailey, Strezhnev and Voeten (2015). I also control for (log) net ODA

received from all DAC donors (in constant 2009 US$) as Chinese development activities could increasingly compete with those of the West.[15]

$economic_{it-1}$ represents the economic motives of China's development finance. By controlling for population size I try to capture the market-seeking motive of China's development finance to Africa. I use population size as proxy for the market size of the respective recipient country. At the same time, population size could capture the strategic interests of donor countries, as "there is an exogenous small country bias in aid such that smaller countries get higher aid per capita and higher aid as ratio to their income" (Easterly, 2009, p. 388). If the coefficient on population is strongly positive and highly statistically significant, I interpret this as the economic motive "overriding" the strategic motive. The interpretation would be the other way around if the coefficient on population is strongly negative and highly statistically significant.

In order to capture needs-based, altruistic motives of Chinese development assistance, I use GDP per capita data as a proxy for the recipient country's level of development. On the basis of need it is expected that poorer countries should receive more development finance, ceteris paribus. Both population and GDP per capita data come from the World Bank's World Development Indicators (WDI).

As qualitative evidence suggests that a bulk of China's development assistance is tied to the purchase/procurement of Chinese goods, I will also control for the log (net) import value of Chinese goods and services (in constant 2009 US$) for each African partner country. Data on Chinese exports to African partner countries are obtained from the United Nations Commodity Trade Statistics Database (UN Comtrade). I will take the logarithm of all three variables (population, GDP per capita, imports from China) to facilitate the interpretation of the regression coefficients.

Furthermore, $institutional_{it-1}$ captures the overall institutional quality of the recipient country. My composite index for institutional quality is constructed in the following way: I average all six World Bank good governance indicators for each recipient country for each year. The data comes from the World Bank's Good Governance Indicators (Kaufmann, Kraay, & Zoido-Lobatón, 2000). Since China's development finance is supposedly shaped by the policy of non-interference in domestic political affairs, I do not expect the coefficient to be strongly positive.

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[15] In order to be able to take the logarithm of the monetary value of total net ODA received from all DAC donors, I only take positive ODA flows into account. Negative ODA flows will be recorded as zero ODA flows. I then simply add 0.01 to each value – including both positive and zero values – before taking the logarithm.

geographic$_{it-1}$ denotes the set of two proxies for natural resource wealth. One variable is oil rents as a percentage of GDP. Oil rents are the difference between the value of crude oil production at world prices and total costs of production. The other variable is gas rents as a percentage of GDP. Natural gas rents are the difference between the value of natural gas production at world prices and total costs of production. Given China's increasing demand for natural resources, I expect a strong positive relationship between Chinese development finance and natural resource rents. The data on both gas and oil rents come from the World Bank's World Development Indicators (WDI).

I also introduce a conflict variable that controls for the degree of political violence in the recipient country. I expect a positive relationship between Chinese development finance and conflict as more aid – especially humanitarian assistance – should be allocated to more conflict-prone areas. Last but not least, I add a binary indicator that is equal to one if English is considered at least the third-most common language in the recipient country. The reason why I control for English language has to do with the set-up of the AidData's China's Official Finance to Africa Dataset (version 1.2). The dataset

> "draws primarily upon Chinese and English-language sources. Therefore, the dataset may underrepresent China's development finance activities in states where other languages are more prominent in media outlets, business relations and politics. In particular, we expect a negative bias against Francophone and Lusophone African states" (Dreher et al., 2015, p. 14).

Data on English language come from Mayer and Zignago (2011). Similar to the main explanatory variable, I will lag the time-varying control variables by one year to mitigate endogeneity concerns. Table 3 provides the summary statistics of my main variables for the empirical analysis. A detailed overview of the data and its sources used in the analysis is given in Appendix C.

Table 3: Summary Statistics

Variable Name	Obs	Mean	Std. Dev.	Min	Max
Dependent Variable					
Abs. Chinese Development Finance (log)	636	-5.69	10.82	-18.42	8.88
Rel. Chinese Development Finance	636	0.00	0.06	-0.34	0.62
Explanatory Variable					
Democracy Index (Polity IV)	572	3.93	1.80	1.00	7.00
Democracy Index (Freedom House)	613	4.93	2.51	0.75	10.00
Democracy Index (Vanhanen)	578	7.86	6.05	0.00	29.80
Control Variables					
Taiwan Recognition	636	0.11	0.31	0.00	1.00
UN Voting with China	636	85.12	14.80	0.00	100.00
Western ODA (log)	635	4.86	3.11	-18.31	9.34
Imports from China (log)	635	4.38	2.45	-4.64	9.47
Population (log)	636	1.93	1.57	-2.51	5.10
GDP per capita (log)	636	6.80	1.15	4.65	10.07
Conflict	612	0.61	1.48	0.00	7.00
Gas Rents (% of GDP)	617	0.79	2.62	0.00	21.25
Oil Rents (% of GDP)	616	7.08	16.27	0.00	78.25
English Language	636	0.43	0.50	0.00	1.00
Institutional Quality	636	-0.66	0.61	-2.49	0.87

4. EMPIRICAL ANALYSIS

Table 4 reports the OLS estimates when using the P4I. In the base specifications, column (1) and column (5), I do not find a strong negative and highly statistically significant coefficient on democracy. Therefore, my OLS results suggest that more authoritarian recipient governments do not systematically receive more development finance from China while controlling for all the potential confounding factors discussed above.

In column (1) and column (5), I do not control for year and regional fixed effects. The coefficient for Taiwan recognition is strongly negative and highly statistically significant in six out of eight cases. This result provides evidence of a strong connection between Beijing's One-China policy and its aid allocation. Countries that maintain diplomatic relationships with Taiwan receive less development finance from China, ceteris paribus, in both absolute and relative terms. The magnitude of the coefficient is large. On average, a country that holds diplomatic relationships with Taiwan receives almost 15 percent less development finance compared to a country that does not have diplomatic ties with Taiwan, holding all other factors constant.

As expected, the coefficient for English language is both positive and statistically significant. As mentioned above, it is more likely that AidData's TUFF methodology picks up Chinese official financing projects in English-speaking countries vis-à-vis non-English-speaking countries. An African recipient country where English can be considered at least the third most common language receives, on average, 4.24 percent more development finance from China compared to a country where English is not considered to be among the three most important languages.

I do not find empirical evidence that countries which receive more Chinese development finance import on average more goods from China. Quantitatively, a one-percent increase in imports from China decreases official financing from Beijing in absolute terms by 0.36 percent. This result is not straightforward and requires an explanation. It might be the case that the scope for tying aid to purchase goods from China is especially high in those countries that have very weak trade relationships with China to begin with, i.e. smaller African trading countries that import less from China at an absolute scale if compared to other larger African trading countries. The opposite is true for countries that have already established strong trade relationships with other more traditional trading partners. Second, the coefficient on Western ODA is highly statistically significant. My results suggest that a one-percent increase in Western ODA is associated with a 0.32 percent increase in official financing.

Third, countries that tend to be poorer receive, on average, more development finance from China in absolute terms. This result suggests that China's aid allocation is at least partly driven by needs-based motives. Fourth, there exists some empirical evidence that oil-rich countries tend to receive, on average, more development finance in both absolute and relative terms, ceteris paribus. My empirical findings strongly reject the claim that Chinese development finance mainly targets countries with poor institutional quality. Moreover, I do not find empirical evidence that recipient countries who show a strong voting alignment with China in the UNGA receive more development finance from Beijing, ceteris paribus. With regard to population size, my results suggest that more populous countries do benefit from greater Chinese development assistance. In column (2) and column (6), I include a set of year dummy variables in the regression to account for year fixed effects. In column (3) and column (7), I capture unobserved time-invariant heterogeneity at the regional level using regional fixed effects, without controlling for year fixed effects. The regression specifications in column (4) and column (8) control for both year fixed effects and regional fixed effects. My results do not change in any fundamental way. The only two variables that have a large explanatory power in almost all eight regression specifications are the Taiwan dummy and the English language dummy.

Table 4: Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, Polity IV

Dependent Variable: Chinese Official Finance	Absolute				Relative			
	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
Democracy (P4 index)	0.11	-0.11	-0.05	-0.22	0.07	0.10	0.00	0.03
	(0.32)	(0.33)	(0.33)	(0.33)	(0.18)	(0.19)	(0.20)	(0.21)
Taiwan Recognition	-14.90***	-15.11***	-14.01***	-14.36***	-0.73	-0.71	-1.30**	-1.25**
	(1.18)	(1.24)	(1.32)	(1.36)	(0.46)	(0.48)	(0.55)	(0.57)
UN Voting with China	0.02	-0.01	0.01	-0.01	0.00	0.01	0.01	0.02
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)	(0.01)	(0.01)	(0.02)
Western ODA (log)	0.32**	0.19	0.24*	0.14	0.01	0.03	-0.02	-0.00
	(0.15)	(0.15)	(0.14)	(0.14)	(0.04)	(0.05)	(0.05)	(0.05)
Population (log)	0.70	0.81*	0.89*	0.93**	-0.46**	-0.48**	-0.28	-0.28
	(0.43)	(0.42)	(0.47)	(0.46)	(0.22)	(0.23)	(0.28)	(0.28)
Imports from China (log)	-0.37**	-0.55***	-0.09	-0.25	0.07	0.09	-0.03	-0.01
	(0.19)	(0.19)	(0.22)	(0.23)	(0.21)	(0.22)	(0.21)	(0.22)
GDP per capita (log)	-1.51**	-2.10***	-1.27*	-1.89**	-0.13	-0.05	0.11	0.24
	(0.63)	(0.68)	(0.73)	(0.82)	(0.43)	(0.43)	(0.50)	(0.46)
Gas Rents (% of GDP)	-0.27	-0.22	-0.10	-0.10	-0.02	-0.02	0.08	0.09
	(0.19)	(0.20)	(0.21)	(0.21)	(0.12)	(0.13)	(0.12)	(0.13)
Oil Rents (% of GDP)	0.08**	0.10**	0.06	0.08*	0.05*	0.05*	0.02	0.02
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)	(0.04)
English language	4.33***	4.38***	2.26**	2.44**	1.09**	1.07*	1.55**	1.49*
	(0.90)	(0.91)	(1.09)	(1.12)	(0.53)	(0.55)	(0.78)	(0.82)
Conflict	0.30	0.46	0.24	0.43	0.86*	0.83*	0.79*	0.76
	(0.37)	(0.39)	(0.38)	(0.40)	(0.48)	(0.47)	(0.48)	(0.48)
Institutional Quality	-0.21	1.25	-0.08	1.16	-0.32	-0.52	-0.26	-0.48
	(1.28)	(1.33)	(1.26)	(1.32)	(0.79)	(0.93)	(0.71)	(0.85)
Constant	1.08	6.84	-3.89	2.60	-0.42	-1.34	-3.43	-4.77
	(6.03)	(6.48)	(7.40)	(8.37)	(3.45)	(3.64)	(4.17)	(4.10)
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Regional FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	514	514	514	514	514	514	514	514
R^2	0.27	0.30	0.29	0.31	0.06	0.06	0.07	0.08
adj. R^2	0.25	0.27	0.27	0.28	0.04	0.02	0.04	0.03

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

I then test the relationship between Chinese development finance and the democracy level of the recipient country using the FHI and the VDI, respectively (Table 5 and Table 6). I do not find a strong

statistically significant relationship between the autocracy level of the recipient country and the amount of development assistance received from China. In fact, the coefficient on the VDI is positive and statistically significant. This result would suggest that more democratic countries tend to receive, on average, more development finance from China. Given the potential drawbacks associated with the VDI, I do not want to overemphasize this empirical finding. Rather, this result should be interpreted as additional empirical evidence against the popular claim that Beijing's development finance systematically targets more authoritarian recipient countries. When using both the FHI and the VDI as proxies for the democracy level of African recipient countries, the overall results are very similar to those found in Table 4. Interestingly though, the population coefficient is statistically significant when using absolute Chinese development finance as dependent variable (columns 1-4). Those results suggest that more populous countries do receive more development finance from China, which would underline the strong market-seeking motive of Beijing's official financing.

The weak relationship between the autocracy level of the recipient country and Chinese development assistance also holds when the sample is reduced to Sub-Saharan Africa only (Appendix B, Table B.3). When controlling for time fixed effects and regional fixed effects, Chinese development finance in absolute terms is positively correlated with oil rents and negatively correlated with GDP per capita.

The model presented above may suffer from endogeneity problems in the form of omitted variable bias, measurement error or reverse causality. For example, is it the case that Chinese development finance worsens the good governance record of African recipient countries? A large qualitative body of literature suggests that Chinese official financing might harm or even systematically weaken good governance in recipient countries (Collier, 2007; Naím, 2007; Taylor, 2007a, 2007b; Tull, 2006; Zhao, 2014). If reverse causation is a serious concern here, the error term is likely to be correlated with the explanatory variables leading to biased and inconsistent OLS estimates.

Table 5: Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, Freedom House Index

Dependent Variable: Chinese Official Finance	Absolute				Relative			
	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
Democracy (FH Index)	0.22	-0.00	0.01	-0.18	0.10	0.11	-0.05	-0.03
	(0.26)	(0.27)	(0.30)	(0.30)	(0.14)	(0.15)	(0.15)	(0.16)
Taiwan Recognition	-14.71***	-15.00***	-13.99***	-14.48***	-0.64	-0.62	-1.23**	-1.20**
	(1.14)	(1.20)	(1.29)	(1.34)	(0.41)	(0.42)	(0.48)	(0.49)
UN Voting with China	0.01	-0.02	-0.01	-0.03	0.00	0.00	0.00	0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)	(0.01)	(0.02)	(0.02)
Western ODA (log)	0.34**	0.19	0.27*	0.14	0.03	0.04	0.01	0.02
	(0.15)	(0.15)	(0.14)	(0.15)	(0.04)	(0.05)	(0.05)	(0.05)
Population (log)	0.89**	0.98**	1.05**	1.09**	-0.36	-0.37	-0.20	-0.20
	(0.42)	(0.41)	(0.45)	(0.44)	(0.23)	(0.24)	(0.27)	(0.28)
Imports from China (log)	-0.47**	-0.66***	-0.18	-0.35	-0.02	-0.02	-0.10	-0.09
	(0.20)	(0.19)	(0.23)	(0.23)	(0.21)	(0.23)	(0.21)	(0.23)
GDP per capita (log)	-1.17*	-1.95***	-0.94	-1.71**	0.06	0.09	0.30	0.33
	(0.65)	(0.69)	(0.70)	(0.77)	(0.41)	(0.39)	(0.45)	(0.41)
Gas Rents (% of GDP)	-0.23	-0.19	-0.08	-0.08	0.02	0.02	0.10	0.10
	(0.19)	(0.20)	(0.22)	(0.22)	(0.11)	(0.12)	(0.12)	(0.12)
Oil Rents (% of GDP)	0.09***	0.11***	0.09**	0.10**	0.06**	0.06**	0.05	0.05
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)	(0.04)
English language	4.48***	4.48***	2.42**	2.56**	1.22**	1.23**	1.46*	1.47*
	(0.88)	(0.88)	(1.08)	(1.10)	(0.52)	(0.54)	(0.76)	(0.80)
Conflict	-0.36	-0.11	-0.38	-0.11	0.42	0.40	0.39	0.37
	(0.39)	(0.40)	(0.39)	(0.40)	(0.43)	(0.43)	(0.43)	(0.43)
Institutional Quality	-0.74	1.20	-0.35	1.34	-0.39	-0.49	-0.00	-0.10
	(1.41)	(1.50)	(1.44)	(1.51)	(0.79)	(0.87)	(0.77)	(0.83)
Constant	-1.26	6.16	-5.48	2.16	-1.74	-2.13	-4.03	-4.45
	(6.36)	(6.89)	(7.07)	(7.89)	(3.59)	(3.62)	(3.95)	(3.78)
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Regional FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	540	540	540	540	540	540	540	540
R^2	0.25	0.29	0.27	0.30	0.04	0.05	0.05	0.05
adj. R^2	0.24	0.25	0.25	0.26	0.02	0.00	0.02	0.01

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

Table 6: Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, Vanhanen Democracy Index

Dependent Variable: Chinese Official Finance	Absolute				Relative			
	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
Democracy (Vanhanen Index)	0.15*	0.08	0.14*	0.09	0.09	0.09*	0.06	0.07
	(0.08)	(0.08)	(0.08)	(0.08)	(0.06)	(0.06)	(0.05)	(0.05)
Taiwan Recognition	-14.79***	-14.85***	-13.77***	-14.00***	-0.67**	-0.66*	-1.04**	-1.01**
	(1.05)	(1.07)	(1.15)	(1.18)	(0.33)	(0.35)	(0.41)	(0.42)
UN Voting with China	0.01	-0.02	-0.00	-0.03	0.00	0.01	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
Western ODA (log)	0.35**	0.19	0.28*	0.16	0.03	0.05	0.01	0.03
	(0.14)	(0.15)	(0.14)	(0.15)	(0.04)	(0.05)	(0.05)	(0.05)
Population (log)	0.95**	1.07***	1.09**	1.13**	-0.34	-0.35	-0.18	-0.19
	(0.41)	(0.40)	(0.45)	(0.44)	(0.24)	(0.24)	(0.28)	(0.28)
Imports from China (log)	-0.51***	-0.67***	-0.24	-0.40*	-0.05	-0.03	-0.13	-0.12
	(0.20)	(0.20)	(0.22)	(0.23)	(0.22)	(0.23)	(0.22)	(0.24)
GDP per capita (log)	-1.14*	-1.76***	-0.90	-1.54**	0.10	0.16	0.36	0.43
	(0.62)	(0.65)	(0.68)	(0.75)	(0.43)	(0.42)	(0.47)	(0.43)
Gas Rents (% of GDP)	-0.25	-0.21	-0.13	-0.14	0.00	0.00	0.08	0.08
	(0.20)	(0.20)	(0.22)	(0.23)	(0.12)	(0.12)	(0.12)	(0.13)
Oil Rents (% of GDP)	0.09**	0.10***	0.09**	0.11**	0.06**	0.06**	0.05	0.05
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)	(0.04)
English language	4.17***	4.26***	2.19**	2.48**	1.09**	1.09**	1.41**	1.39*
	(0.89)	(0.89)	(1.06)	(1.09)	(0.51)	(0.53)	(0.71)	(0.75)
Conflict	-0.44	-0.21	-0.48	-0.25	0.38	0.35	0.34	0.31
	(0.39)	(0.40)	(0.39)	(0.40)	(0.42)	(0.42)	(0.42)	(0.42)
Institutional Quality	-0.78	0.61	-1.06	0.15	-0.48	-0.62	-0.49	-0.62
	(1.12)	(1.14)	(1.10)	(1.12)	(0.70)	(0.77)	(0.68)	(0.75)
Constant	-1.50	9.50	-3.48	6.86	-2.24	-3.09	-3.75	-4.67
	(5.22)	(6.29)	(5.68)	(6.97)	(3.39)	(3.52)	(3.72)	(3.47)
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Regional FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	535	535	535	535	535	535	535	535
R^2	0.26	0.29	0.28	0.30	0.05	0.05	0.05	0.06
adj. R^2	0.24	0.26	0.25	0.27	0.03	0.01	0.02	0.01

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

The figures in Appendix A show the recent democratic/autocratic trajectory for several African countries between 2000 and 2011. The figures include major recipients of Chinese development assistance (Angola, Ethiopia, Ghana, Sudan and Zimbabwe), minor recipients (Cape Verde, Comoros, Guinea-Bissau, Swaziland), and also countries that rank in the middle (Central African Republic, Kenya and Mauritania). At first sight, I do not find systematic dramatic deteriorations in the democracy level among major recipients of Chinese development finance. In fact, looking at the entire period 2000-2011, the democratic/autocratic trajectory is fairly constant for some major recipients (such as Angola and Zimbabwe), slightly deteriorating for countries like Ethiopia (such as Ethiopia), and even slightly improving in other countries (such as Ghana). My descriptive statistics and the quantitative evidence by Bader (2015) suggest that the concern of reverse causality should not be overemphasised. But, in order to account for the possibility of reverse causality and other potential endogeneity issues, I use alternative estimation models in Section 5.2.

5. ROBUSTNESS

This section presents some additional robustness checks. Section 5.1 presents results using fixed effects and random effects estimation techniques to account for unobserved heterogeneity. Section 5.2 addresses the possibility for reverse causality using instrumental variable regression estimation.

5.1. FE and RE estimation

In order to capture unobservable time-invariant determinants (u_i), I run both random effects (RE) estimations and fixed effects (FE) estimations for both absolute Chinese official development official finance (Table 7) and relative Chinese official development finance (Table 8). Both tables report the regression results, the overall R^2 and the p-value of the Hausman (1978) specification test to compare the suitability of the RE assumptions versus the FE assumptions.

Looking at Table 7, the effects of time-invariant variables such as English language are partialled out in FE model (columns 1-3). Column (1) displays the results for the P4I, column (2) and column (3) do the same for the FHI and the VDI, respectively. Similar to the OLS results reported above, I do not find any negative statistically significant relationship between the democracy level of the recipient country and Chinese development finance. The only two variables that are highly statistically significant in all three specifications is the (non-)recognition of Taiwan and imports from China. A country that recognises Taiwan over the PRC receives on average almost 10 percent less development finance

compared to a country has recognises the PRC over Taiwan. At the same time, the FE results suggest that, on average, countries that import more from China seem to receive less development finance from China.

Columns 4-6 show the results for the RE model. In all three cases, there is no significant statistical negative relationship between my main explanatory variable 'democracy level' and Chinese official financing. The Taiwan coefficient is once again highly statistically significant. Since the RE model assumes that the entity's error term is not correlated with the predictors, it allows for time-invariant variables such as English language to play a role as explanatory variable. Similar to my OLS results, the English language is a significant determinant of Chinese development finance. Compared to the results presented in the FE model, the coefficient on population has greatly been reduced and is no longer statistically significant. Since the Hausman test suggests that both RE and FE are consistent estimators when using the P4I, the RE specification – which is more efficient than the FE specification – should be preferred. The fixed effects model, however, should be considered for the specifications using the FHI and the VDI.

Table 8 shows the FE and RE results when using relative Chinese official development finance as dependent variable. Similar to the results found in Table 7, there is no negative statistical relationship between the relative amount of Chinese official development finance received and a recipient country's level of democracy. Interestingly, the coefficient on Taiwan is no longer statistically significant. The coefficient on English language, however, remains statistically significant. In all cases, the random effects specification should be preferred.

Table 7: Absolute Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, Random and Fixed-Effects Estimation

Dependent Variable: Abs. Chinese Official Finance	FE (1) PolityIV	FE (2) FH	FE (3) Vanhanen	RE (4) PolityIV	RE (5) FH	RE (6) Vanhanen
Democracy	0.02	0.53	0.21	0.27	0.47	0.21**
	(0.70)	(0.67)	(0.13)	(0.41)	(0.33)	(0.10)
Taiwan Recognition	-10.76***	-10.18***	-10.66***	-13.70***	-13.56***	-13.93***
	(3.14)	(3.05)	(3.05)	(1.94)	(1.93)	(1.89)
UN Voting with China	0.01	-0.01	-0.00	0.02	0.01	0.01
	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)
Western ODA (log)	-0.01	-0.03	-0.02	0.23	0.23	0.24
	(0.17)	(0.18)	(0.18)	(0.15)	(0.15)	(0.15)
Population (log)	3.96	8.76	7.48	0.73	0.85	0.87
	(14.78)	(14.25)	(14.23)	(0.60)	(0.59)	(0.59)
Imports from China (log)	-1.86**	-1.58*	-1.66*	-0.26	-0.29	-0.33
	(0.88)	(0.85)	(0.85)	(0.32)	(0.32)	(0.32)
GDP per capita (log)	-1.26	-2.58	-2.55	-1.19	-0.90	-1.01
	(2.46)	(2.32)	(2.31)	(0.86)	(0.86)	(0.84)
Gas Rents (% of GDP)	0.14	0.10	0.16	-0.16	-0.12	-0.14
	(0.41)	(0.41)	(0.41)	(0.23)	(0.23)	(0.23)
Oil Rents (% of GDP)	0.15	0.16	0.16	0.08	0.09*	0.09*
	(0.11)	(0.11)	(0.11)	(0.05)	(0.05)	(0.05)
English language	-	-	-	4.31***	4.54***	4.17***
				(1.40)	(1.37)	(1.38)
Conflict	0.90	0.73	0.67	0.37	-0.17	-0.19
	(0.59)	(0.56)	(0.56)	(0.48)	(0.45)	(0.45)
Institutional Quality	1.60	2.09	1.55	-0.86	-1.59	-1.06
	(3.26)	(3.18)	(3.07)	(1.65)	(1.78)	(1.51)
Constant	7.07	3.30	6.62	-2.63	-5.69	-3.55
	(34.20)	(33.56)	(33.51)	(7.38)	(7.71)	(6.78)
Observations	514	540	535	514	540	535
R^2 (overall)	0.163	0.110	0.125	0.270	0.248	0.254
Hausman p-value				0.063	0.011	0.009

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

Table 8: Relative Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, Random and Fixed-Effects Estimation

Dependent Variable: Rel. Chinese Official Finance	FE (1) PolityIV	FE (2) FH	FE (3) Vanhanen	RE (4) PolityIV	RE (5) FH	RE (6) Vanhanen
Democracy	-0.28	0.36	0.08	0.04	0.10	0.08
	(0.48)	(0.46)	(0.09)	(0.22)	(0.19)	(0.06)
Taiwan Recognition	0.29	0.89	0.70	-0.66	-0.50	-0.57
	(2.14)	(2.11)	(2.13)	(1.06)	(1.09)	(1.04)
UN Voting with China	0.00	-0.00	-0.00	0.00	0.00	0.00
	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)
Western ODA (log)	-0.06	-0.06	-0.05	-0.00	0.01	0.01
	(0.12)	(0.12)	(0.12)	(0.09)	(0.10)	(0.09)
Population (log)	-8.34	-5.24	-5.52	-0.44	-0.37	-0.35
	(10.09)	(9.84)	(9.92)	(0.32)	(0.32)	(0.31)
Imports from China (log)	0.19	0.30	0.24	0.04	-0.01	-0.04
	(0.60)	(0.59)	(0.59)	(0.17)	(0.18)	(0.18)
GDP per capita (log)	-1.17	-1.35	-1.41	-0.23	-0.04	-0.00
	(1.68)	(1.60)	(1.61)	(0.47)	(0.49)	(0.46)
Gas Rents (% of GDP)	0.57**	0.53*	0.55*	0.03	0.06	0.04
	(0.28)	(0.29)	(0.29)	(0.12)	(0.13)	(0.13)
Oil Rents (% of GDP)	0.03	0.03	0.03	0.06**	0.06**	0.06**
	(0.07)	(0.07)	(0.08)	(0.03)	(0.03)	(0.03)
English language	-	-	-	1.10	1.21*	1.10
				(0.70)	(0.71)	(0.70)
Conflict	0.48	0.52	0.49	0.83***	0.46	0.42
	(0.40)	(0.39)	(0.39)	(0.29)	(0.28)	(0.28)
Institutional Quality	1.77	1.21	1.33	-0.11	-0.23	-0.30
	(2.23)	(2.20)	(2.14)	(0.92)	(1.03)	(0.84)
Constant	27.13	18.19	20.61	0.60	-0.90	-1.28
	(23.34)	(23.19)	(23.37)	(4.21)	(4.52)	(3.91)
Observations	514	540	535	514	540	535
R^2 (overall)	0.001	0.001	0.001	0.060	0.043	0.046
Hausman p-value				0.488	0.674	0.690

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

5.2. 2SLS estimation

In order to tackle endogeneity issues, I instrument the current day democracy level with the democracy level at each country's year of independence. The rationale for using the democracy level at each country's year of independence as an instrument for a country's contemporary democratic institutions goes back to the theory of institutional path dependence in economics (David, 1994; Greif, 1994; North, 1990) and historical institutionalism in political science (Hall & Taylor, 1996; Pierson & Skocpol, 2002; Putnam, 1993). Applying the path dependence theory to this case implies that the level of democratic institutional characteristics of a country is bound by its previous institutional history. For both the P4I and the VDI I have data available for each African country from its year of independence onwards. Unfortunately, the data on the FHI only exists from 1972 onwards. The FHI is therefore excluded from the 2SLS analysis.

For the P4I (VDI) to be a valid instrument, it must meet two conditions. First, the democracy index in the independence year must meet the instrument relevance condition. Variation in the democracy level present in a country's year of independence is related to variation in a country's contemporary level of democracy. Moreover, my instrument must meet the instrument exogeneity condition. The level of democracy in a country's year of independence must be uncorrelated with the error term ui. Or put differently, I must rule out any direct effect of the instrument on the dependent variable or any effect running through omitted variables (Angrist, Imbens, & Rubin, 1996).

Table 9 reports the 2SLS estimates for absolute Chinese official development finance. In columns (1)-(3), I use the P4I as measure of democracy. Column (1) controls neither for year nor regional fixed effects. In column (2), I add year-fixed effects to the model. The model in column (3) controls for both year-fixed effects and regional fixed effects. The specifications in columns (4)-(6) do the same when using the VDI as democracy variable. The first stage regressions results are excluded due to limited space but are available upon request. In all six regression specifications, the coefficient on democracy remains statistically insignificant and is in fact larger than the OLS estimate reported in Table 4. This may therefore suggest that the democracy coefficient in the uninstrumented regression suffered from attenuation bias (Wooldridge, 2002). Similar to my previous results, there exists a strong and highly statistically significant inverted relationship between the recognition of Taiwan and Chinese development assistance. The coefficient on English language is also strongly positive and highly statistically significant in most cases.

Table 9: Absolute Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, 2SLS Estimation

Dependent Variable: Absolute Chinese Official Finance	2SLS (1) PolityIV	2SLS (2) PolityIV	2SLS (3) PolityIV	2SLS (4) Vanhanen	2SLS (5) Vanhanen	2SLS (6) Vanhanen
Democracy	1.56	1.28	2.91	0.78*	0.81**	0.79*
	(1.37)	(1.46)	(2.26)	(0.40)	(0.39)	(0.46)
Taiwan Recognition	-13.06***	-13.36***	-9.97***	-14.16***	-14.08***	-12.77***
	(1.96)	(2.07)	(3.33)	(1.42)	(1.43)	(1.59)
UN Voting with China	0.04	0.01	0.04	0.04	0.03	0.01
	(0.03)	(0.04)	(0.05)	(0.03)	(0.04)	(0.04)
Western ODA (log)	0.26	0.16	0.15	0.33***	0.27**	0.28*
	(0.16)	(0.15)	(0.15)	(0.12)	(0.13)	(0.15)
Population (log)	1.12*	1.16**	1.21**	1.12**	1.22**	1.08**
	(0.60)	(0.58)	(0.56)	(0.55)	(0.52)	(0.49)
Imports from China (log)	-0.52**	-0.63***	-0.47	-0.88***	-0.94***	-0.57**
	(0.23)	(0.21)	(0.31)	(0.30)	(0.26)	(0.28)
GDP per capita (log)	-0.89	-1.34	-1.16	-0.48	-0.54	-0.56
	(0.81)	(1.00)	(1.02)	(0.86)	(1.00)	(1.00)
Gas Rents (% of GDP)	-0.33	-0.30	-0.41	-0.25	-0.27	-0.29
	(0.21)	(0.22)	(0.34)	(0.23)	(0.23)	(0.30)
Oil Rents (% of GDP)	0.10**	0.10***	0.10**	0.10***	0.10**	0.13***
	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)
English language	3.92***	3.97***	2.86**	3.66***	3.54***	1.58
	(0.94)	(0.95)	(1.27)	(1.15)	(1.15)	(1.39)
Conflict	-0.20	-0.02	-0.49	-0.90	-0.82	-0.78
	(0.59)	(0.63)	(0.80)	(0.57)	(0.60)	(0.59)
Institutional Quality	-3.27	-1.98	-4.94	-4.13*	-3.96	-4.22
	(2.96)	(3.48)	(4.57)	(2.38)	(2.65)	(2.90)
Constant	-11.71	-2.69	-13.70	-13.85	-12.95	-14.14
	(13.01)	(16.89)	(19.83)	(10.06)	(12.60)	(13.20)
Year FE	No	Yes	Yes	No	Yes	Yes
Regional FE	No	No	Yes	No	No	Yes
Observations	514	514	514	485	485	485
R^2, first stage	0.48	0.50	0.55	0.31	0.35	0.37
adj. R^2, first stage	0.47	0.48	0.53	0.29	0.32	0.34
F statistic, first stage	20.48	17.95	9.86	20.36	22.43	16.02

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

Similar to the FE results presented above, there is a highly significant negative relationship between trade imports from China and Chinese official financing. Interestingly, both the coefficient on population and oil rents are strongly positive and highly statistically significant in at least five out of six cases. The 2SLS results suggest that both population size and oil rents as a percentage of GDP are major determinants of Chinese official finance. In contrast to oil rents, gas rents cannot be considered a major determinant for Chinese development finance. The coefficient on Western ODA only turns out to be significant when using the VDI rather than the P4I. Contrary to my previous results, the coefficient on institutional quality has become larger in absolute magnitude (more negative). However, the coefficient is only significant at the 10 percent level in one out of six cases. The claim that Chinese development assistance systematically targets countries with weaker institutions can therefore be refuted.

The relatively high R^2 and adjusted R^2 from fitting the first-stage regression indicate the high relevance of my instrument. Since my instrument is strongly correlated with the endogenous democracy variable, my instrumental-variables estimators exhibit less bias when compared to the OLS estimators reported in Table 3. In all but one case, the instrument is strong, since my first-stage F-statistics exceeds the rule-of-thumb threshold of 10 (Staiger & Stock, 1997; Stock & Watson, 2012; Stock, Wright, & Yogo, 2002).[16] I cannot answer the question of whether my instrument meets the exogeneity condition; as the regression coefficients are exactly identified, I cannot deploy a test of overidentifying restrictions.

The 2SLS results for relative Chinese official development finance are reported in Table 10. While the coefficient on democracy has a negative sign, the bivariate relationship of democracy and relative Chinese official development finance is still not statistically significant. The highly statistically significant inverted relationship between the recognition of Taiwan and *relative* Chinese official development assistance only holds for the VDI, but not for the P4I. The coefficients on both population and oil rents are only statistically significant in two out of six cases. The coefficient on English language remains statistically significant at all times. Overall, my empirical results do not provide empirical evidence that Chinese development finance systematically flows to more authoritarian countries, holding all other factors constant.

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[16] Stock, Wright and Yogo (2002) suggest that the F statistic must be above 10 for inference based on the 2SLS estimator to be reliable when there is one endogenous regressor.

Table 10: Relative Chinese Development Finance and Democracy Level of African Recipient Countries, 2000-2011, 2SLS Estimation

Dependent Variable: Relative Chinese Official Finance	2SLS (1) PolityIV	2SLS (2) PolityIV	2SLS (3) PolityIV	2SLS (4) Vanhanen	2SLS (5) Vanhanen	2SLS (6) Vanhanen
Democracy	-0.96	-0.98	-1.34	-0.00	-0.00	-0.10
	(1.33)	(1.47)	(2.20)	(0.24)	(0.24)	(0.30)
Taiwan Recognition	-2.03	-2.08	-3.16	-0.80**	-0.81**	-1.30**
	(1.72)	(1.88)	(3.25)	(0.39)	(0.39)	(0.59)
UN Voting with China	-0.01	-0.01	-0.01	-0.00	0.00	0.00
	(0.02)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)
Western ODA (log)	0.06	0.05	-0.01	0.05	0.06	0.02
	(0.08)	(0.05)	(0.06)	(0.05)	(0.05)	(0.07)
Population (log)	-0.76	-0.75*	-0.41	-0.51	-0.51*	-0.31
	(0.47)	(0.45)	(0.31)	(0.32)	(0.30)	(0.31)
Imports from China (log)	0.18	0.16	0.09	-0.02	-0.02	-0.14
	(0.31)	(0.26)	(0.27)	(0.31)	(0.29)	(0.29)
GDP per capita (log)	-0.57	-0.64	-0.08	-0.14	-0.15	0.15
	(0.76)	(1.00)	(0.76)	(0.62)	(0.71)	(0.69)
Gas Rents (% of GDP)	0.03	0.04	0.22	0.03	0.03	0.16
	(0.13)	(0.14)	(0.26)	(0.12)	(0.12)	(0.16)
Oil Rents (% of GDP)	0.05	0.05	0.01	0.07**	0.07**	0.06
	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)	(0.04)
English language	1.38**	1.39**	1.31*	1.14**	1.17**	1.82**
	(0.62)	(0.67)	(0.72)	(0.55)	(0.58)	(0.93)
Conflict	1.21*	1.21*	1.16	0.54	0.53	0.51
	(0.69)	(0.72)	(0.80)	(0.50)	(0.51)	(0.51)
Institutional Quality	1.85	2.01	2.19	0.16	0.17	0.58
	(3.03)	(3.76)	(4.82)	(1.61)	(1.80)	(2.17)
Constant	8.65	9.99	8.42	-0.00	-0.00	-0.10
	(12.30)	(16.66)	(18.73)	(0.24)	(0.24)	(0.30)
Year FE	No	Yes	Yes	No	Yes	Yes
Regional FE	No	No	Yes	No	No	Yes
Observations	514	514	514	485	485	485
R^2, first stage	0.48	0.50	0.55	0.31	0.35	0.37
adj. R^2, first stage	0.47	0.48	0.53	0.29	0.32	0.34
F statistic, first stage	20.48	17.95	9.86	20.36	22.43	16.02

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

6. CONCLUSION

Until very recently the growing literature on China's economic embrace of Africa has mainly been driven by qualitative studies and anecdotal evidence. A bulk of theoretical literature suggests that development finance from non-traditional, non-democratic donors, such as China, to developing countries could actively promote autocracy in recipient states and offset the efforts of traditional democratic DAC donors to deliver development assistance to democratic recipient countries.

Only very little empirical work has analysed the nature of Beijing's official finance and that of other non-DAC donors. One of the main aims of this study has been to shed light on China's development finance activities in Africa using quantitative estimation techniques. More specifically, this study set out to examine whether Chinese development finance systematically flows to more authoritarian countries in Africa, ceteris paribus. I have used both absolute Chinese official development finance and a proxy for relative Chinese official development finance to answer the research question.

Using various econometric estimation techniques, I do not find a strong negative and highly statistically significant relationship between the democracy level of a recipient country and Chinese development finance. Or put differently, Chinese development finance does not systematically target more authoritarian countries, controlling for political, economic, institutional, strategic and geographic factors. This finding remains unchanged if I reduce the sample to Sub-Saharan Africa only. The finding also survives several robustness checks including FE, RE and instrumental variable estimation.

My empirical results are only partly in line with the theoretical expectations. The only two major determinants of Chinese development finance that remain highly statistically significant irrespective of the econometric estimation model chosen are two categorical variables: (i) whether a country recognises the PRC or Taiwan and (ii) whether English can be considered one of the three most common languages in the recipient country. Furthermore, I do not find a strongly negative and highly statistically significant relationship between the good governance record of a recipient country and Chinese official finance. The accusation that that Beijing's official finance to developing countries must be considered 'rogue aid' seems unjustified.

While DAC members are required to officially report their data on official development assistance to the OECD, non-DAC donors' reporting takes place on a voluntary basis. As long as non-DAC donors like China refuse to make their development finance activities publicly available, researchers and policymakers alike have to rely on databases such as the TUFF for the time being. The disclosure of

development finance data by governments outside the DAC would have the potential of "enriching the aid effectiveness agenda with the practices and experiences of South-South cooperation" (DCD-DAC, 2010, p. 10).
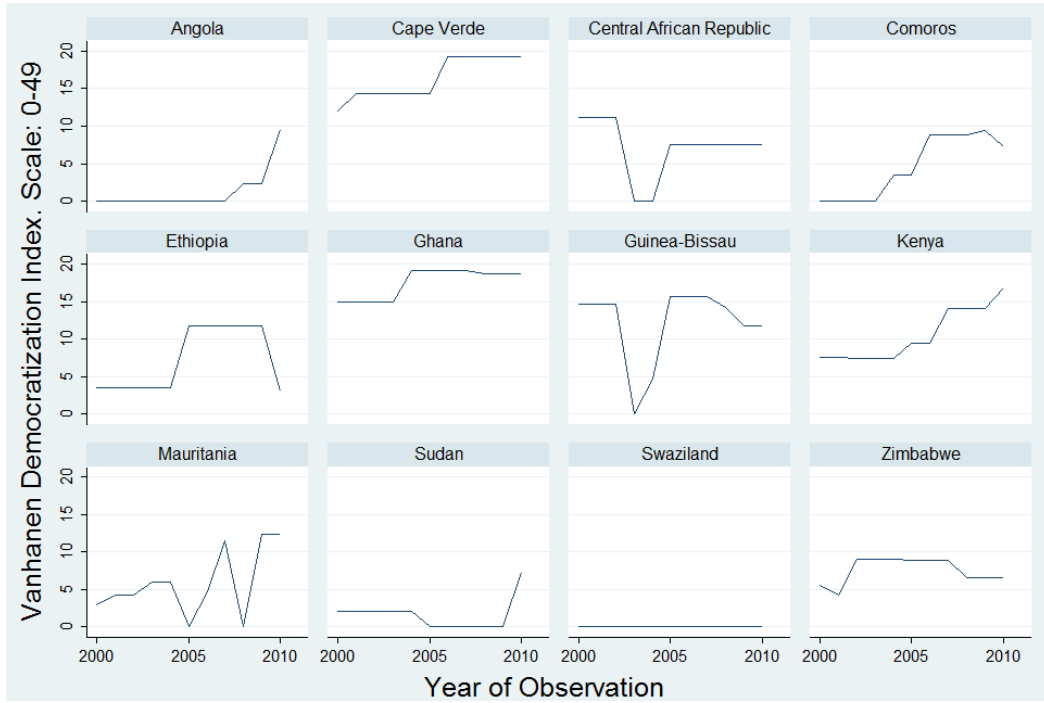
APPENDIX A: LIST OF FIGURES

Figure A.1: Evolution of Democracy for Selected African Countries, 2000-2011 (Polity IV Index)
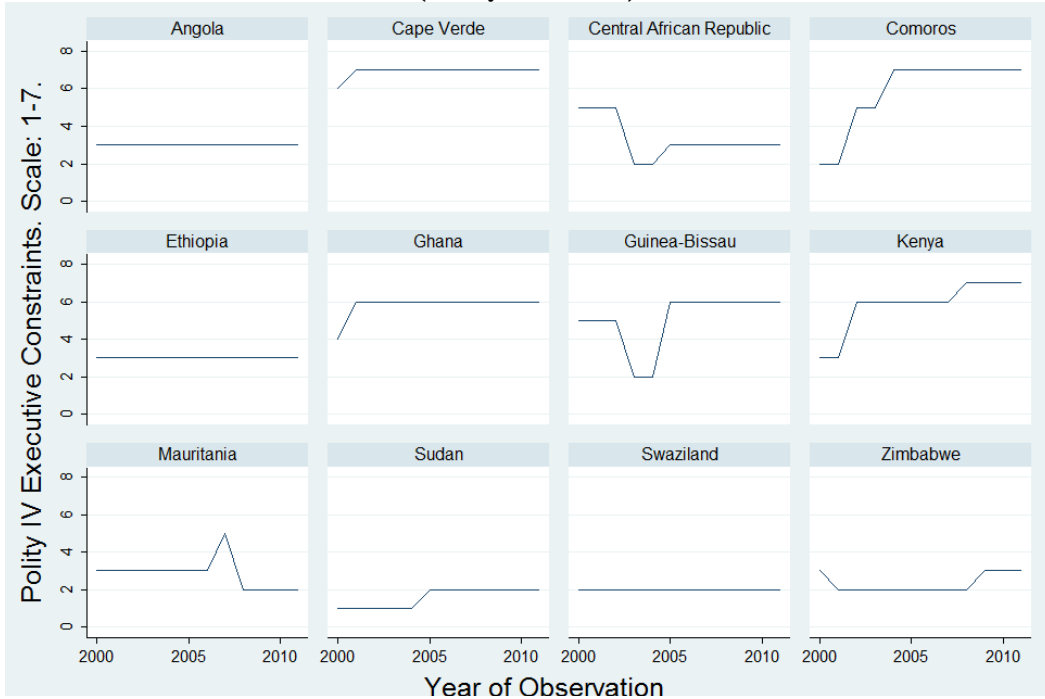
Figure A.2: Evolution of Democracy for Selected African Countries, 2000-2011 (Freedom House Index)

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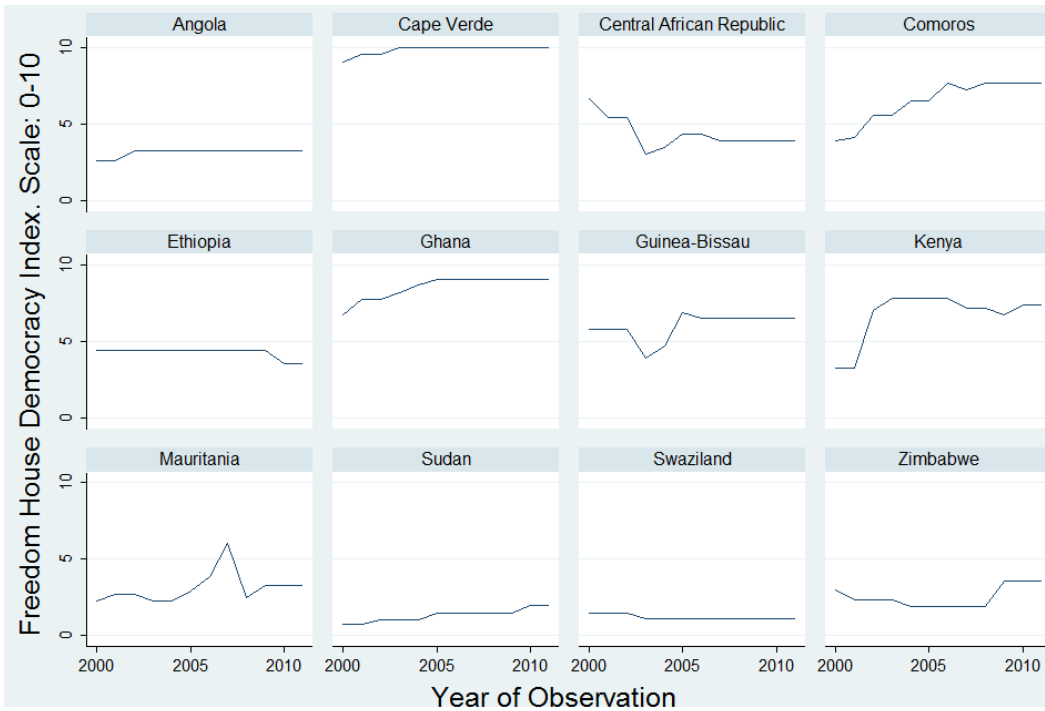
Figure A.3: Evolution of Democracy for Selected African Countries, 2000-2011 (Vanhanen Democratization Index)

**Table B.1: Absolute Chinese Development Finance and
Democracy Level of Sub-Saharan African Recipient Countries, 2000-2011**

Dependent Variable: Absolute Chinese Official Finance	OLS (1) PolityIV	OLS (2) PolityIV	OLS (3) FH	OLS (4) FH	OLS (5) Vanhanen	OLS (6) Vanhanen
Democracy	0.07	-0.09	0.11	-0.00	0.15*	0.10
	(0.34)	(0.35)	(0.30)	(0.30)	(0.08)	(0.08)
Taiwan Recognition	-14.89***	-14.25***	-14.86***	-14.24***	-14.79***	-14.05***
	(1.19)	(1.42)	(1.16)	(1.39)	(1.06)	(1.23)
UN Voting with China	0.02	-0.02	0.01	-0.04	0.01	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Western ODA (log)	0.04	-0.14	0.06	-0.15	0.07	-0.14
	(0.21)	(0.22)	(0.21)	(0.21)	(0.21)	(0.21)
Population (log)	1.07**	1.01**	1.21**	1.18**	1.24***	1.20**
	(0.49)	(0.49)	(0.47)	(0.47)	(0.46)	(0.47)
Imports from China (log)	-0.42**	-0.34	-0.52**	-0.46*	-0.58***	-0.49**
	(0.19)	(0.23)	(0.21)	(0.24)	(0.20)	(0.23)
GDP per capita (log)	-1.02	-1.96**	-0.85	-1.78**	-0.83	-1.69**
	(0.72)	(0.82)	(0.69)	(0.77)	(0.67)	(0.75)
Gas Rents (% of GDP)	0.58*	0.49	0.62*	0.48	0.66**	0.49
	(0.33)	(0.34)	(0.32)	(0.33)	(0.33)	(0.33)
Oil Rents (% of GDP)	0.06	0.10**	0.08**	0.13***	0.08**	0.13***
	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
English language	3.92***	2.76**	4.16***	2.98***	4.00***	2.81**
	(0.97)	(1.16)	(0.98)	(1.14)	(0.94)	(1.13)
Conflict	0.17	0.37	-0.49	-0.20	-0.56	-0.28
	(0.37)	(0.40)	(0.41)	(0.41)	(0.40)	(0.40)
Institutional Quality	-0.55	0.82	-0.66	0.62	-1.02	-0.05
	(1.29)	(1.35)	(1.47)	(1.51)	(1.11)	(1.12)
Constant	-1.07	9.63	-1.61	10.59	-2.67	8.18
	(6.32)	(7.64)	(6.46)	(8.02)	(5.45)	(6.96)
Year FE	No	Yes	No	Yes	No	Yes
Regional FE	No	Yes	No	Yes	No	Yes
Observations	459	459	485	485	484	484
R^2	0.29	0.34	0.27	0.32	0.27	0.32
adj. R^2	0.27	0.30	0.25	0.28	0.26	0.29

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

Table B.2: Relative Chinese Development Finance and
Democracy Level of Sub-Saharan African Recipient Countries, 2000-2011

Dependent Variable: Rel. Chinese Official Finance	OLS (1) PolityIV	OLS (2) PolityIV	OLS (3) FH	OLS (4) FH	OLS (5) Vanhanen	OLS (6) Vanhanen
Democracy	-0.01	0.02	-0.01	-0.04	0.07	0.07
	(0.20)	(0.23)	(0.16)	(0.17)	(0.06)	(0.06)
Taiwan Recognition	-0.77	-1.27**	-0.77*	-1.24**	-0.66*	-1.02**
	(0.49)	(0.60)	(0.44)	(0.51)	(0.34)	(0.42)
UN Voting with China	0.00	0.02	0.00	0.01	0.00	0.01
	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)
Western ODA (log)	-0.03	0.01	-0.00	0.01	0.00	0.02
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Population (log)	-0.30	-0.26	-0.20	-0.15	-0.19	-0.15
	(0.25)	(0.28)	(0.25)	(0.28)	(0.25)	(0.28)
Imports from China (log)	0.10	0.04	0.02	-0.06	-0.01	-0.08
	(0.21)	(0.22)	(0.21)	(0.22)	(0.22)	(0.24)
GDP per capita (log)	0.10	0.29	0.24	0.39	0.29	0.49
	(0.53)	(0.48)	(0.47)	(0.43)	(0.48)	(0.44)
Gas Rents (% of GDP)	-0.23	-0.17	-0.21	-0.22	-0.19	-0.20
	(0.25)	(0.24)	(0.25)	(0.23)	(0.25)	(0.24)
Oil Rents (% of GDP)	0.05	0.02	0.06**	0.06	0.06**	0.06
	(0.03)	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)
English language	0.81	1.38	0.91	1.34	0.90*	1.27
	(0.55)	(0.85)	(0.57)	(0.84)	(0.52)	(0.77)
Conflict	0.83	0.80	0.36	0.35	0.32	0.29
	(0.55)	(0.54)	(0.47)	(0.47)	(0.47)	(0.46)
Institutional Quality	-0.37	-0.62	-0.23	-0.29	-0.59	-0.85
	(0.83)	(0.88)	(0.83)	(0.84)	(0.72)	(0.74)
Constant	-1.71	-4.33	-2.23	-3.78	-3.47	-6.04*
	(3.92)	(4.11)	(3.75)	(3.49)	(3.67)	(3.49)
Year FE	No	Yes	No	Yes	No	Yes
Regional FE	No	Yes	No	Yes	No	Yes
Observations	459	459	485	485	484	484
R^2	0.06	0.07	0.04	0.05	0.04	0.05
adj. R^2	0.03	0.02	0.02	0.00	0.02	0.00

Notes: Robust standard errors are shown in parentheses. ***denotes significance at the 1% level, ** at the 5% level, *at the 10% level.

APPENDIX C: DATA AND SOURCES

Variable Name	Definition	Source
Dependent Variable		
Chinese Development Finance (abs.)	(Log) Official Finance (ODA+OOF) amount in constant 2009 US$	Aid Data (Strange et al., 2015)
Chinese Development Finance (rel.)	Relative importance of Chinese development finance	Aid Data/OECD data
Explanatory Variables		
Democracy Index (Polity IV)	Executive constraints (decision rule) variable. Scale ranges between 0 ("unlimited authority") and 7 ("Executive Parity or Subordination"), lag	Polity IV Dataset (Marshall et al., 2014)
Democracy Index (FH)	Freedom House polity2 variable. Scale ranges from 0 (least democratic) and 10 (most democratic); lag	Freedom House dataset (Freedom House, 2016)
Democracy Index (Vanhanen)	Percentage of votes not cast for the largest party (competition) times the percentage of the population who actually voted in the election (participation), divided by 100. Index could vary from 0 (no democracy) to 100 (full democracy); lag	Polyarchy Dataset (Vanhanen, 2000, 2016)
Control Variables		
Taiwan Recognition	=1 if country has diplomatic relations with Taiwan, 0 otherwise; lag	Bräutigam (2011a), Rich (2009), own update
UN Voting with China	Voting alignment with China in the UN General Assembly on all votes; lag	Bailey, Strezhnev and Voeten (2015)
Western ODA (log)	(Log) Western (DAC donors) total net bilateral official development assistance flows; lag	OECD/DAC Development Finance Statistics (OECD, 2016)
Imports from China (log)	(Log) net import value of Chinese goods and services (in constant 2009 US$) for each African partner country; lag	UN Comtrade via WITS (UN Comtrade, 2016)
Population (log)	(Log) Total population size; lag	WDI (World Bank, 2016)
GDP per capita (log)	(Log) GDP per capita (constant 2009 US$); lag	WDI (World Bank, 2016)
Conflict	Total summed magnitudes of all societal intrastate major episodes of political violence (civil violence, civil war, ethnic violence ethnic war). Scale: 0 (lowest) to 10 (highest); lag	Center for Systemic Peace (Marshall, 2014)
Gas Rents (% of GDP)	Gas rents as percent of GDP. Natural gas rents are the difference between the value of natural gas production at world prices and total costs of production; lag	WDI (World Bank, 2016)
Oil Rents (% of GDP)	Oil rents as percent of GDP. Natural gas rents are the difference between the value of natural gas production at world prices and total costs of production; lag	WDI (World Bank, 2016)
English Language	=1 if English is at least the third most-common language, 0 otherwise	CEPII (Mayer and Zignago, 2011)
Institutional Quality	Institutional Quality index. Average of all six World Governance Indicators; lag	WGI (World Bank, 2016)

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