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Authoritarian Partnerships or Genuine Development Cooperation?

Chinese Development Finance in Africa examined in different institutional environments.

by

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China has established itself as the most important partner of many African countries. However, it is often labelled as a purely self-interested actor, who helps authoritarians stay in power. This thesis aims to enhance our understanding of the nature of China's development finance through a two-step analysis. First, I investigate the allocation of Chinese aid to African countries, examining its relationship with two measures of institutional quality. Consistent with previous studies, no correlation is found, suggesting that China's development finance is extended to both democracies and autocracies in Africa without distinction. Following this, a qualitative case study of Zambia and Zimbabwe explores how Chinese aid impacts these countries and the extent to which institutional differences result in divergent outcomes. The findings indicate that debt to China poses fewer concerns than commonly assumed, but overall economic benefits remain modest. Projects frequently encounter implementation challenges, although Zambia experiences greater success than Zimbabwe, particularly in infrastructure. Nonetheless, governance issues lead to negative consequences of Chinese aid in both countries, notably in environmental degradation, labour standards, and continued resource dependency. These challenges are mirrored by growing anti-Chinese sentiments among the population.

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1. Introduction

China is still often classified as an emerging donor in the international aid architecture. This, however, is nowadays a misclassification. Far from lagging behind traditional donors, the country is one of the most important bilateral givers of aid for many countries globally. It does not adhere to traditional classification and reporting standard for aid (Official Development Assistance – ODA) that OECD countries use, which can make disentangling aid from other financial flows difficult. But financial flows less concessional than ODA can also be considered to be development aid (Brautigam 2010). Regardless of the strictness of standards used, China has become a big player in the global development community. Next to its neighbours in Asia, this holds especially true for African states, a primary destination for Chinese aid (Kiel Institute 2022). Many of the world least developed countries sit on the continent. Receiving much attention of other donors over the past decades, progress in development has been limited in many places. Traditional development partners have faced multiple issues. These include dealing with autocratic governments, corruption, or the mistrust faced from civilians and officials given European countries' colonial histories. China, a highly autocratic and corrupt country itself, without a colonial legacy in the region, faces fewer of these barriers. Moreover, as donors such as the OECD, EU, or countries like Germany, Sweden, or the US, often give aid based on factors like human rights or democratic transitions, China rarely conditions its aid on recipient countries' merits (Hoeffler and Sterck 2022).

Given those different approaches to aid however, much research however has not focussed on implementation and outcomes of said aid, but on geopolitical issues, or questions of “debt-trap diplomacy” or other forms of Chinese self-interest (cf. e.g., Carter 2017). For recipient countries, these issues will be less important than how much aid they can receive, and what that aid achieves. Adding to the body of research on these questions is the aim of this thesis. More specifically, it will be examined in how far Chinese aid allocation, implementation, and outcomes differ from democratic to non-democratic states. As traditional donors focus on more democratic countries, it is plausible China might fill the gap in more authoritarian states. Furthermore, the Western aid conditionality is not only an incentive to democratize or improve human rights, but also happens because of uncertainty about effectiveness of money given to autocracies (Youngs et al. 2024). How well, and in which ways, Chinese aid works given recipient countries' different political situations, is an important question – if not the most important question, as development should be the primary goal of aid, not geopolitical concerns or opening new markets.

In contributing to answers to these questions, this thesis consists of two main parts – a quantitative analysis of Chinese aid flows, and a comparative case study of Chinese aid in Zambia and Zimbabwe. More specifically, the following three research questions will guide this thesis.

1. Does China allocate more development finance to countries that are more authoritarian?
2. How does Chinese aid influence economic development, employment, as well as societal and environmental factors in Zambia and Zimbabwe respectively?
3. To what extent do divergent political contexts influence the efficacy, implementation, and impact of Chinese development finance?

Presenting the backdrop of question 1, chapter two briefly reviews literature on Chinese aid on the African continent in general. This is followed by the quantitative analysis, whose theoretical foundation, data, hypotheses, and models will be introduced in chapter three. AidData's (Custer et al. 2023) pioneering dataset on Chinese development projects will be the main source for this. Chapter four presents the regression results, and its implications for the case study.

In chapter five, I argue why Zambia and Zimbabwe's are suitable for a comparative case study and lay out comparison categories for the analysis. The comparative case study in chapter six will feature both

the national level as well as individual projects and make use of various source materials. Chapter seven offers a critical discussion of the presented work, before chapter eight concludes.

2. China in Africa – Literature Review

The aim of this chapter is threefold. First, historical and contemporary contexts of Chinese aid involvement in Africa will be summarized. Second, general effects of Chinese aid observed on the continent are looked at. Finally, I discuss and problematize the lack of research conducted on potential differences of aid projects in authoritarian versus democratic countries.

2.1 History of Chinese engagement in Africa

While China is nowadays widely acknowledged as an important development cooperation partner to African countries, the magnitude of financial flows from the PRC to the continent this century remains underappreciated. Not only is China the biggest partner of most African countries, in some it even outweighs commitments from all other donors added together (Amusa et al. 2016a). These scales of financing still a recent development, China's cooperation with Africa has a surprisingly long history, stretching back to the days when it was an underdeveloped nation itself. Projects such as public buildings, stadiums, and most notably, the Tanzania-Zambia railway, were financed through interest-free Chinese loans as early as the 1970ies (Schiere 2011). Alas, few early projects reached those dimensions, but numerous small-scale schemes were undertaken. China sent experts in agriculture and medicine for technical assistance, enabled exchange programs for students, and continued providing interest-free loans and other concessionary forms of financial assistance (Brautigam 2010, 41ff.).

As China grew economically, so did its efforts on the African continent. The turn of the millennium is often seen as the start of a new era in Chinese aid, both in terms of volume and strategy. FOCAC, the Forum on China-Africa Cooperation, was established in 2000, largely following pleas from African diplomats (Murphy 2022, 56). Held triennially since then, alternating between Beijing and African capitals, FOCAC now serves as the primary channel through which China gives aid to countries on the continent. The African Union (AU) has a seat at the table, and receives direct resources from China, e.g., funding for its headquarters in Addis Ababa, Ethiopia.¹ Most projects however are still implemented bilaterally (ibid., 76f.). FOCAC grew with every iteration, both in numbers of countries participating (recognition of the PRC as the sole representative of China is the only condition) and heads of governments participating, indicating the ever-increasing importance of China as a partner to African countries. Its strict policy of non-interference in internal affairs is emphasised in the forum's founding principles (FOCAC 2009), and likely attractive to many African governments.

In 2006, the establishment of the China-Africa Development Fund (CAD Fund) was announced, which remains the largest single instrument of Sino-African investment (Schickerling 2012). Moreover, many concessional forms of finance, from debt forgiveness to interest-free loans, are planned and pledged at FOCAC. Since 2018, the forum is officially embedded into China's largest and most prominent foreign relations project, the Belt and Road Initiative (BRI). Originally coined "One Belt and Road Initiative" in 2013, it was presented as a project that seeks to foster economic growth through the creation of physical linkages, coined corridors, across the Central Asia at first (Ruta 2018). It quickly expanded beyond that limited regional scope, and Africa is today the continent that receives the most BRI funding behind Asia. "Through several refinements, the BRI has gone from a corridor initiative to promote the development of Asian connective infrastructure to a global initiative encompassing projects in a diverse array of sectors, from infrastructure to education" (Gambino 2022, 296). In reality, BRI today is composed of much more than just connectivity infrastructure projects, perhaps to the point of obscurity.² Nonetheless, BRI has become perhaps the single most recognizable brand in development finance, and infrastructure such as ports, railways, highways, or power plants,

¹ Which, allegedly, was bugged by Chinese officials, an occurrence even kept under covers by the AU itself for years (cf. Fidler 2018).

² Projects from water parks to music camps have had the label BRI attached to it (Kuo and Kommenda 2018).

have been needed on the continent for many decades. While the main bulk of Chinese financial flows go to projects in these sectors, health and agriculture have remained on the radar, often through sending qualified professionals such as doctors and agricultural experts, as well as the necessary equipment. Main aims are the improvement of agricultural yields and overall food security (Scoones et al. 2016). In the Health Care sector, China has been a significant player since long before the Covid-19 pandemic, not least because it is a relatively simply way of supplying aid, that has noticeable effects for the local populations (Carter 2017). Overall, there are few public infrastructure projects on the continent that have no Chinese involvement³, and many governments depend on injections of money from China to function. Given limited success of traditional donors' development cooperation in Africa, how has the PRC fared so far?

2.2 Outcomes of Chinese aid in Africa

Naturally, outcomes of those various Chinese-funded projects differ. Many argue China is a purely self-interested partner, solely interested in securing resources, export markets, and geopolitical support. Following this notion, any positive results for African countries and its citizens would merely be unintended consequences at best, if not contrary to Chinese interests at worst⁴ (cf. Isaksson and Kotsadam 2018). However, the general view of China's involvement in development cooperation is not as bleak (cf. e.g., Brautigam 2010, Swedlund 2017, and Lubinda and Jian 2018). Notwithstanding the likelihood that China is a *largely* self-interested actor, there remains significant room for its African partners' advancements. Furthermore, even if acting completely selfishly, China needs positive outcomes on the ground to bolster its legitimacy and prevent deterring governments and companies from collaboration (Carter 2017).

At the centre of this debate is the question of debt. After all, the main form of Chinese aid comes in the form of concessional loans, meaning partner countries still must pay back sizeable parts of what they receive from Beijing. Given China loans freely and condition-free, it is the main creditor to most African governments, who regularly and increasingly are in debt-distress. The common accusation is that China imposes harsh terms on its loans, banking on countries' inability to repay, and gaining leverage (Schier 2011). Al-Fadhat and Prasetyo (2022) sketch this so coined debt-trap diplomacy in more detail: China deliberately gives out loans so high the lenders are unlikely to be able to repay them. The terms of these loans allow the PRC to take over strategic sectors as collateral. Due to structural power imbalances, lender governments have little choice but to accept. Most often this involves infrastructure, built using the Chinese loans. Ports, for instance, taken over in this fashion on decades-long leases allow Chinese companies to dock at no cost. Geopolitical rivals might have to pay steep fees to get their exports into the countries. Finally, China is said to also seek financial influence, promoting the yen as an alternative to loans in US Dollars.

Undeniably, Chinese loans do contribute to the high levels of debt distress many African countries face. Yet at the same time, much more than just alleged Debt Trap Diplomacy is at play. First, the governments taking on those massive loans share the responsibility. Just because they have the option of endlessly borrowing from China does not mean they must.⁵ Second, other lenders rarely engage in more generous debt breaks or cancellations than China, their contributions to overall debt levels flying under the radar. Finally, arguably the main driver behind debt distress is (mostly) out of China's control – the value of the US Dollar. Despite its efforts to promote the renmibi internationally, most of Chinese loans are denominated in US Dollars – as are loans from other creditors. When the Dollar

³ Although the extent to which they can be considered as some form of aid certainly differs.

⁴ If, e.g., economic rents or employment opportunities can either go to Africans or Chinese people.

⁵ The most used example of so-called Chinese Debt Trap Diplomacy, the Hambantota port in Sri Lanka, is one such case. President Mahinda Rajapaksa went out of his way to secure the loan, ignoring domestic and international warnings that the port will become a White Elephant, and the loan too large to repay. Moreover, Chinese loan constitute less than 10 per cent of Sri Lanka's overall debt (Singh 2018 and Jones and Hameiri 2020).

appreciates in value, this makes debt repayments much more difficult for governments. They then scramble for foreign reserves as their own currency depreciates, struggling to repay even loans that were sensible at time of disbursement (Varoufakis 2023, 166 and Augustine 2019). Then there is the issue of the term Debt Trap Diplomacy itself. Brautigam (2019) reveals that it stems from an Indian think tank and was incepted and used for purposes of negative propaganda (cf. also Singh 2020). Not only Indian sources brought that narrative into play, but also the Trump administration, authorising a CIA public opinion campaign (Reuters 2024). In fairness, Chinese loans usually lack transparency (Onjala 2018). Problematic by itself, this also prevents public scrutiny, and contributes to the Debt Trap Diplomacy narrative.

But overall, while China could undoubtedly be a more benevolent creditor, painting it as the sole, or even main, contributor to debt distress in African countries is short-sighted. The case study of Zambia and Zimbabwe will discuss this in further detail.

Just after the question of debt, the issue of resource exploitation is routinely brought up when discussing China in Africa. All sorts of resources, from oil to minerals, present on the continent, are mined, often with questionable environmental standards. Those raw materials are rarely processed within African countries, but shipped to China, meaning the process of value-adding does not benefit the economies in Africa (Zhao 2014). While Chinese-supported processing and manufacturing is starting to pop up in Africa, employment opportunities for locals are limited, as Chinese migrant workers are preferred (ibid. and Yang 2021). Further limiting industrialisation in many African countries may be cheap Chinese imports – low wages and developed industries in China are said to flood African markets with cheap goods, against which local producers cannot compete. While this issue would not be a direct impact of Chinese development aid, infrastructure such as ports enable more and more imports of Chinese goods. However, “the overarching fear that the African markets will be swamped by cheap Chinese imports has so far not been proven” (Gu et al. 2022, 14). And, as Chinese wages rise and become less competitive, more manufacturing shifts to Africa – at a slow pace however (Yang 2021). Positive impacts of cheap Chinese goods can also not be underestimated. Especially in the telecommunications sector, affordable digital infrastructure as well as consumer goods such as phones are invaluable to many in Africa, enabling communication, and services such as online banking (Granados Hernandez 2022).⁶

On the ground, positive impacts of Chinese development finance are certainly felt. Additional infrastructure, from ports to railways to highways, benefit (parts of) the population, *ceteris paribus* (Zhao 2014). Efforts in agriculture are associated with higher yields and more profits, though effects are largely localised, and investment in cash instead of staple crops can have adverse effects on food security (Scoones et al. 2016). Finally, in the health sector, Chinese aid is directly associated with reduced infant mortality (Cruzatti et al. 2023). In other health care aspects, effects are less clear cut. With Chinese help, more hospitals have been built in numerous African countries. Often however, few nurses and doctors are available to staff these new hospitals, so health care professionals working in new hospitals are missed in existing ones. This means there are more hospitals, but overall hospital quality is reduced (ibid.). During the Covid-19 pandemic, Chinese medical aid helped slow the spread of the virus, increase the number of vaccinated, and thus reduce economic fallouts, without however meeting African policy makers’ priorities of early detection and community trust building (Nantulya 2021).

More generally, the pandemic reduced Chinese financial flows to Africa, with future lending expected to “decrease, become more selective and require a more serious justification” (Deych 2023, 248). However, Covid-19 only exacerbated an existing trend, as Chinese investments and aid have peaked in 2018 and 2015 respectively (China Africa Research Initiative 2024a and 2024b).

⁶ Issues like digital surveillance and potential control over internet access and information flows notwithstanding (cf. Teevan and Domingo 2022).

2.3 Plentiful theories, limited evidence? Aid in democracies and autocracies

To reiterate: Chinese aid has tangible benefits for African people, most obviously in infrastructure and health care. Overarching doubts relate to debt sustainability, resource exploitation, industrialisation, and employment opportunities, as well as environmental degradation and human rights abuses. The former is rarely thematized in contemporary research, whereas potential issues are on the minds of researchers, policy makers, and publics. In parts, this focus is justified. Chinese aid does not take place in a vacuum, but within the international aid architecture. In many cases, it complements traditional donors, and provides competition that could improve quality and implementation of aid overall (Woods 2008). But the non-interference and ask-and-you-shall-receive approach adopted by China not only contrasts starkly with Western methods but might also undermine them. Aid conditionality imposed by actors like the EU or US might incentivize improving human rights or democratic processes in absence of other options. Ultimately though, countries can just turn to China, which threatens the West's ability to press for desirable political outcomes (Dreher et al. 2021). But how valid is this criticism of Chinese practices, when few sustained improvements have been made towards democracy, better protections of human rights, or reducing corruption (Guillaumont et al. 2023)? In 2006, Taylor argued that most rebukes of China partnering with autocracies have been nothing but blind criticism, while aid outcomes are overlooked⁷ – in contemporary, especially Western, research, little has changed.

In fairness, two factors impede research on Chinese aid outcomes in autocracies. First, authoritarian countries are not exactly famous for transparency and good reporting – even more so when dealing with projects involving China. Second, democracy and authoritarianism are not a binary classification, but two sides of a spectrum. African countries especially often take up a murky space between the two, with high volatility in democratisation processes. Thus, research discussing aid in authoritarian versus democratic contexts largely stays within hypotheses, with little evidence backing up claims made.

This is not to say these ideas are not valid. Schiere (2011) argues aid and investment are more effective when coexisting with good domestic governance, for example through successfully insisting on hiring unskilled locals. And indeed, in countries with weaker collective labour rights, Chinese companies are much more likely to hire Chinese migrant workers over domestic individuals (Yang 2022). However, there is also evidence for China undermining trade unions, indicating they try to circumvent institutions associated with good governance (Isaksson and Kotsadam 2020). Furthermore, negative consequences of Chinese aid, such as heightened local corruption or increased salience of ethnic identities, are not limited to authoritarian countries (ibid and Zhao 2014). But the big questions remain mostly unanswered. Differences in aid outcomes in Economic Growth, industrialisation or environmental impacts between more democratic and more autocratic countries are largely unaccounted for. If the notions that Chinese aid is largely self-interested is correct, and more democratic countries are more resistant to Chinese exploitation are correct, this should be reflected in Chinese aid allocation. One would expect more money to flow to authoritarian countries, where returns on investment are bigger for China – be those returns purely financial, or through gains in infrastructure or structural power. Additionally, Chinese development finance might fill in gaps in authoritarian countries, whereas democracies already receive aid from the traditional donors. Thus, the discrepancy could be even bigger. The next two chapters will examine the relationship between a country's democratisation and its likelihood of receiving development finance from China. If this relationship is negative, the common criticisms of Chinese aid practices are likely justified. An absence of this relationship, or even the opposite outcome would necessitate further research into Chinese aid outcomes.

⁷ Which is not to say outcomes are necessarily desirable.

3. Quantitative Analysis

In this chapter, all relevant previous literature, datasets, and models, will be introduced. First, previous quantitative analyses regarding Chinese aid in Africa will be discussed, together with how the main data set was formed. I then introduce the dataset on Aid Data and the various outcome variables. Following that, the explanatory variables will be shown, before I discuss some modifications to the datasets that were necessary. Finally, my hypotheses and models are displayed.

3.1 Literature review and aid data

Ways in which China allocates aid has seen more scholarly attention over the past decades, as aid volumes increased dramatically. Typically, aid from China is seen as easier to obtain and condition-free, contrary to aid from traditional western donors (Dreher and Fuchs 2015). These are more likely to make money available only when certain ideas regarding democracies, policies, or human rights are met. In contrast, China, an authoritarian country itself, prides itself on non-interference in other countries' internal affairs (Bräutigam 2009, 148f.). The one strict condition it imposes is recognition of its sovereignty, as opposed to recognising the government in Taipei (Copper 2016, 143f.). This is the main determinant of Chinese aid globally, as recently shown by Hoeffler and Sterck (2022). My empirical work expands on their research, which itself draws from Dreher et al. (2018). Since China does not adhere to reporting standards on aid used by OECD donors, tracking and understanding its aid is notoriously difficult. Using a 2017 dataset, Dreher et al. (2018) analyse the difference of financial flows that are "ODA-like", i.e., are comparable to official development assistance from OECD members, and other forms of financial flows that are closer to market conditions. Applying this analysis to Africa, they find that Chinese aid is primarily determined by foreign policy considerations, so, in essence, whether a state recognises Beijing. Other forms of financial flows, that often consist primarily out of loans, are more likely to be driven by Chinese economic interests. Amusa et al. (2016b) support that notion, with additional findings suggesting that population size is another predictor of various forms of Chinese aid. Furthermore, they find some weak evidence for a positive relationship between political rights and aid allocation.

The team behind Dreher et al. (2018) have, together with a wider range of researchers, compiled the most exhaustive database of Chinese development projects to date (Custer et al. 2023), which also serves Hoeffler and Sterck (2022) and will be used here as well. For most projects, this database distinguishes between ODA-like and other kinds of financial flows. Hoeffler and Sterck (2022) use only ODA projects-like projects to analyse determinants of aid. For the most part, they replicate Dreher et al.'s earlier results. In this analysis, I am interest in different explanatory variables, and the impact of all sorts of Financial Flows from China to African countries. Thus, I use all observations relating to Africa from Custer et al.'s (2023) most recent dataset. This dataset contains a total of 20985 projects, 9348 of which are in Africa. The main unit of analysis are not the projects however, but countries. Given limitations with the explanatory variables, expanded on below, all data will be aggregated to the country level over the whole observation period. This means that the year of project commitment or implementation is not considered, and neither are changes over time in the explanatory variables. While this weakens my models' causal power, it is unlikely that small year on year changes in the explanatory variables have an immediate impact on Chinese aid. Such mechanisms are better explained by qualitative analysis, as exemplified by the case later study of Zambia and Zimbabwe.

The main dataset includes has an exhaustive list of variables that cannot all be considered. I will first elaborate on the two main outcome variables, before discussing further variables used for analysis, followed by variables foregone for various reasons.

Most importantly, the volume of money attributed to a country is an important outcome variable. Unfortunately, only around half of the projects in the dataset have an observation for this variable. Thus, any interpretation of it must be treated with caution. All available observations of this variable

are added up by country, using constant 2021 US\$ to ensure comparability.

The second main outcome variable is the number of projects by country. Using this slightly makes up for the lack of projects which financial volumes have been observed. But again, since only the number, not the volume, is considered here, any results do not allow conclusions by themselves.

Furthermore, it is conceivable that more democratic recipient countries are more likely to properly report on projects, which could be reflected by the dataset. To examine this, two variables are used. The first is a country-mean of the Data Completeness Variable. Second, I calculate the share of projects without a known financial volume, by country. Regressing these two variables on the explanatory variables will show determinants of underreported financial flows.

Finally, I aggregate a range of variables that describe undertaken projects in more detail. These include the share of Grants and the Share of Loans by country, the share of infrastructure projects, the share of Investment Project Loans, and the share of various sectors. These variables will be discussed in more detail in the analysis results, as well as the appendix.

In addition to the outcome variables used, several interesting variables had to be discarded. Information on the type of receiving, lending, funding, and implementing agencies were too diffuse to be used in regression analysis. Values on interest rates of loans could have served as an insightful variable but are only observed for a handful of projects. The same is true for the deviation between planned implementation and actual implementation date. On the one hand, red tape in more authoritarian countries might delay implementation. On the other hand, additional regulation or public consultation in the more democratic countries might prolong the process. The small number of observations on this variable prohibits quantitative analysis, but it will be considered in the case study. Two more interesting variables could have been the share of Acquisition loans and the share of refinancing projects – but again, the number of projects where either variable applied to was prohibitively small. A last relevant variable that could not be used was a project's stated intent, as the overwhelming majority of projects had "Development" stated.

3.2 Explanatory Variables

The aim of the quantitative analysis is to examine if the level of democracy or authoritarianism in a country influences the influx of Chinese Financial Flows. Used by both Dreher et al. (2018) and Hoeffler and Sterck (2022), it is a common control variable. I do the same here but utilize different, more mainstream, data sources. To approximate the countries' levels of democracy, two indices are used. First, the Economist Intelligence Unit's (2023) dataset on the level of democracy is used. It combines different information into an index with values from 0-10. To best approximate a country's level overtime, the regressions use the average value of the index, taken from the years 2006, 2008, and 2010 to 2022.

Serving as an alternative measure of democracy/authoritarianism is the Freedom House Index (Freedom House 2024), measuring political rights and civil liberties with values from 0-100. Again, the average of several years is used in the regressions, namely from 2013 to 2024, since before 2013 a different scoring system was used.

The averages of these two measures are highly correlated at 0.89. But as they still measure different phenomena, both will still be used and reported separately.

Next to these explanatory variables of interest a range of controls is used. First, the 2019 GDP in constant 2015 US\$ 2019 (World Bank 2024a; Statista 2024 for Eritrea) is used to control for economic size. Population in 2019 is another control (World Bank 2024b). Regressions are run controlling for GDP and population, as well as for population and GDP per capita.⁸ Third, taken from Hoeffler and Sterck (2022), the total natural resources rents as share of GDP in 1999 controls for the importance of

⁸ The 2019 GDP divided by the 2019 population.

⁹ For Eritrea, the most recent available value was from 2011 and was used instead (World Bank 2024d).

natural resources for a country's economy (World Bank 2024c). It represents the difference between the value of natural resource production and total local production costs. A final control is a dummy variable, indicating if a country is landlocked or not.

3.3 Data modifications

Originally, 9348 projects in Africa are in the dataset, but this is not the final number of projects contributing to the analysis. As suggested by the dataset's authors, observations with variable "Recommended for Aggregates" set to No are excluded. These are projects that have been suspended, cancelled, or not reached the commitment stage (yet). Furthermore, a number of countries/ entities had to be taken out of the analysis, as no reliable data on the Freedom House Index and/or the Democracy Index was available. These are Western Sahara, Somalia, Somaliland, South Sudan, Seychelles, and Sao Tome and Principe. Since they only represent a very small share of the continent's economy, and a relatively small share of the population, the exclusion should not cause too many issues. Of the remaining 50 countries, only one has no project in the database – Eswatini. It was still included in the regressions, with all values concerning the aid set to zero. Overall, 7442 projects were included.

3.4 Hypotheses and Models

As previously indicated, the main aim of the thesis's quantitative part is to examine whether China is more likely to provide money on aid projects in countries that are less free, or less democratic. Further, I check if certain types of projects are more associated with democracy or freedom. This could be a higher propensity to loan instead of grant money to authoritarian countries, or a higher likelihood of health-related projects in democracies. Finally, two measures for data quality are also used as outcome variables. For all models, the control variables are population, a landlocked dummy, total resource rents as share of total GDP, and GDP and/or GDP per capita. The average Democracy and Freedom House Index over time serve as the explanatory variables of interest, respectively. The unit of analysis is countries.

The regression models thus look like this:

$$OuV = \beta_0 + \beta_1 Index + \beta_2 population + \beta_3 landlocked + \beta_4 resource\ rent + \beta_5 GDP (per\ capita) + \varepsilon$$

OuV denotes the various outcome variables, β_0 the intercept, β_1 either the Democracy or the Freedom House Index, β_2 the population, β_3 the landlocked dummy, β_4 the share of total resource rents of GDP, β_5 either GDP or GDP per capita, and ε the error term.

4. Results

This chapter lays out the important regression results, with further tables available in the appendix. Overall, neither the Democracy nor the Freedom House Index have much impact on Chinese Development Finance on the African continent. Variables like population, resource rent, and economic performance are better predictors, as found by previous research. Nonetheless, some results will be discussed in more detail in this chapter, before placing them into the broader context, and discussing implications for the qualitative research.

Table 1 and 2 show regression results for the most interesting outcome variable, the total amount of aid. When controlling for population, resource rent, landlocked, and economic performance (either total economic output, or GDP per capita), neither the Democracy nor the Freedom House Index show a significant impact on the volume of Chinese aid. Population is the only significant predictor in both models, which is an expectable result – larger countries receive more financial influx. When controlled for population, economic output is not a significant predictor of aid, showing that China grants and lends money to richer and poorer states alike. The variable for share of resource rents of GDP shows some significance in both models and is positive, meaning China is likely giving more money to countries where there is more profit to make from natural resources. However, most of the variance of total aid volume is not explained, with adjusted r-squares of around 0.17 for the models in Tables 1 and 2.

Table 1 Regression of Total Aid Volume on the average Democracy Index

	(1) aid	(2) aid	(3) aid	(4) aid	(5) aid	(6) aid
avgdemocracy	-407.1 (-0.46)	-294.6 (-0.36)	-401.0 (-0.48)	476.5 (0.53)	491.6 (0.54)	655.0 (0.68)
population		0.000112** (2.96)	0.0000765 (1.13)	0.000103 (1.57)	0.000110 (1.62)	0.000119** (3.21)
GDP2019			1.52e-08 (0.63)	7.50e-09 (0.32)	4.19e-09 (0.17)	
resourcerent				371.5* (2.26)	365.0* (2.20)	384.1* (2.23)
landlocked					-1430.9 (-0.46)	-1884.7 (-0.60)
gdp_per_ca~a						-0.207 (-0.32)
_cons	8005.0 (2.00)	4632.3 (1.19)	5186.2 (1.30)	-2127.4 (-0.42)	-1729.4 (-0.34)	-1990.6 (-0.40)
N	50	50	50	50	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 2 Regression of Total Aid Volume on the average Freedom House Index

	(1) aid	(2) aid	(3) aid	(4) aid	(5) aid	(6) aid
avgFHI	-62.56 (-0.98)	-45.35 (-0.76)	-52.77 (-0.86)	13.40 (0.20)	9.962 (0.15)	14.74 (0.21)
population		0.000109** (2.90)	0.0000710 (1.05)	0.0000980 (1.48)	0.000103 (1.51)	0.000119** (3.16)
GDP2019			1.65e-08 (0.69)	9.49e-09 (0.41)	6.80e-09 (0.28)	
resourcerent				349.6* (2.07)	338.5 (1.97)	346.3 (1.97)
landlocked					-1314.8 (-0.42)	-1613.2 (-0.51)
gdp_per_capita						-0.0526 (-0.09)
_cons	8969.5** (2.89)	5390.6 (1.72)	5829.1 (1.81)	-469.2 (-0.11)	159.5 (0.03)	46.39 (0.01)
N	50	50	50	50	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

To better approximate the data, I also ran regressions of the ln of aid, with both the variable for Democracy and for FHI squared. Results for this are reported in Table 3. As with the untransformed regression, only population appears to be a good predictor. Adjusted r-squared values are slightly higher at around 0.2, but the overall picture stays the same – the volume of Chinese financing is difficult to explain quantitatively.

Tables 4 and 5 show a similar outcome. Here, the outcome variable is the total number of projects by country. Adjusted r-squared values are even lower here, with 0.13 and 0.09 respectively. While the low number of observations, given that there are only 50 countries considered, contributes to that, this also shows that individual relationships between China are more important in predicting Financial Flows, than comparable variables are. Nonetheless, the results show again that population is the only stable predictor. In the model controlling for democracy, GDP per capita is significant, too, negatively impacting the number of projects. Ergo, China is slightly more likely to conduct projects in poorer countries. Finally, the coefficient of the Democracy Index in Table 3 is significant as well. A coefficient of 15 is relatively large, given the constant of 73, which means that more democratic states might attract more Chinese development projects. But again, given the low r-squared of the model, this interpretation can only be taken very cautiously.

Another way of analysing the variable on number of projects is the Poisson regression, which is specifically useful when the outcome variable is count data, not continuous numbers. Using this method, results were no different. Only population serves as a reliable predictor with a sizeable coefficient, and Pseudo R-squared values remain below 0.2.¹⁰

¹⁰ Poisson Output Tables can be found in the Appendix.

Table 3 Regressions of In Aid Volume on squared explanatory variables

	(1) ln_aid	(2) ln_aid
democracysq	0.00616 (0.44)	
population	1.96e-08*** (4.01)	1.94e-08*** (3.90)
gdp_per_ca~a	-0.0000259 (-0.29)	-0.00000623 (-0.08)
resourcerent	0.0250 (1.10)	0.0203 (0.89)
landlocked	-0.313 (-0.76)	-0.289 (-0.70)
FHIsq		0.000239 (0.02)
_cons	7.181*** (15.17)	7.299*** (14.88)
N	49	49

t statistics in parentheses
 * p<0.05, ** p<0.01, *** p<0.001

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Table 4 Regression of the number of total projects on the average Democracy Index

	(1) total_obs	(2) total_obs	(3) total_obs	(4) total_obs	(5) total_obs	(6) total_obs
avgdemocracy	5.204 (0.84)	5.838 (0.98)	7.748 (1.29)	11.65 (1.77)	11.65 (1.75)	15.06* (2.16)
population		0.00000629* (2.30)	0.00000126* (2.62)	0.00000138** (2.85)	0.00000138** (2.75)	0.00000632* (2.36)
GDP2019			-2.73e-10 (-1.59)	-3.08e-10 (-1.78)	-3.06e-10 (-1.68)	
resourcerent				1.652 (1.37)	1.655 (1.35)	2.189 (1.75)
landlocked					0.542 (0.02)	-2.823 (-0.12)
gdp_per_ca~a						-0.0100* (-2.12)
_cons	126.9*** (4.51)	107.9*** (3.83)	97.98** (3.44)	65.45 (1.78)	65.30 (1.73)	73.40 (2.01)
N	50	50	50	50	50	50

t statistics in parentheses
 * p<0.05, ** p<0.01, *** p<0.001

Table 5 Regression of the number of total projects on the average Freedom House Index

	(1) total_obs	(2) total_obs	(3) total_obs	(4) total_obs	(5) total_obs	(6) total_obs
avgFHI	0.230 (0.51)	0.331 (0.75)	0.447 (1.02)	0.755 (1.52)	0.771 (1.53)	0.820 (1.61)
population		0.00000637* (2.31)	0.0000124* (2.56)	0.0000136** (2.78)	0.0000134* (2.67)	0.00000666* (2.41)
GDP2019			-2.59e-10 (-1.50)	-2.92e-10 (-1.69)	-2.79e-10 (-1.54)	
resourcerent				1.628 (1.31)	1.681 (1.32)	1.935 (1.50)
landlocked					6.253 (0.27)	5.774 (0.25)
gdp_per_capita						-0.00743 (-1.65)
_cons	139.0*** (6.29)	118.1*** (5.13)	111.3*** (4.80)	81.94* (2.55)	78.95* (2.30)	94.72** (2.76)
N	50	50	50	50	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

While number and overall volume of projects are not explained by the Democracy or Freedom House Index, perhaps the type of projects conducted in a country might show a relationship. Regressing various outcome variables shows very few relationships, however. The share of grants and loans respectively shows no significant results, and neither does the share of projects classified as infrastructure. Investment Project Loans Projects, defined as “a loan that is provided to finance the provision of goods, works, or services to support a public or private investment project” (Custer et al. 2023), as a share of total projects, are also not influenced by Democracy or Freedom House scores (see Appendix for detailed regression outputs). The AidData dataset also classifies projects as belonging to a number of certain sectors. Many of the sectors have very few projects, limiting the chance of finding significant relationships. As expected, most regressions on individual sectors’ shares have no significant result. This is exemplified by Table 6.

One exception to this are the results for the share of education-related projects – coefficients for both Democracy and Freedom House Index are highly significant, as presented in Table 7. For Democracy especially, the effect is rather large – one additional point in the index raises the share of education-related projects by two percentage points, the mean value of this variable being 14.2 per cent. While the adjusted r-squared of this model is low at .19, the overall results still suggest that more democratic countries value education much higher. While perhaps expectable, this might be the most interesting connection found in the quantitative analysis – it will, however, not be the focus of the qualitative part of the thesis but could provide an avenue for future research.

Table 6 Regressions of Share of Industry, Mining, and Construction Projects

	(1) share_320	(2) share_320
avgdemocracy	-0.000983 (-0.34)	
population	2.48e-10* (2.23)	2.31e-10* (2.09)
gdp_per_capita	-0.00000291 (-0.15)	-8.20e-08 (-0.05)
resourcerent	0.000215 (0.42)	-0.0000747 (-0.01)
landlocked	0.00223 (0.24)	0.000744 (0.08)
avgFHI		-0.000241 (-1.19)
_cons	0.0243 (1.61)	0.0328* (2.39)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 7 Regressions of Share of Education Related Projects

	(1) share_110	(2) share_110
avgdemocracy	0.0207** (3.30)	
population	3.85e-10 (1.60)	4.44e-10 (1.77)
gdp_per_capita	0.00000296 (0.07)	0.0000351 (0.86)
resourcerent	0.000813 (0.72)	0.000666 (0.57)
landlocked	0.0169 (0.83)	0.0295 (1.41)
avgFHI		0.00128** (2.79)
_cons	0.0324 (0.99)	0.0532 (1.71)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Another hypothesis for how democratic states might differ from their less democratic counterparts is reporting on foreign funded development projects. To assess this, the Average Data Completeness Score by country is regressed on the same set of explanatory variables (results with squared terms can be found in the appendix), with results given in Tables 8 and 9. As previously, the results have little explanatory power, with r-squared values in both models below 0.25. Population has a significant effect when including the Democracy and the Freedom House Index, which shows that smaller countries provide data of higher quality in collaboration with China. The FHI score also shows a significant effect, but the small coefficient prohibits a reliable interpretation of that.

Table 8 Regression of the Average Data Completeness Score on the average Democracy Index

	(1) mean_DataC~s	(2) mean_DataC~s	(3) mean_DataC~s	(4) mean_DataC~s	(5) mean_DataC~s	(6) mean_DataC~s
avgdemocracy	0.0407 (0.95)	0.0453 (1.10)	0.0450 (1.06)	0.0729 (1.56)	0.0728 (1.54)	0.0873 (1.75)
population		4.53e-09* (2.39)	4.44e-09 (1.30)	5.29e-09 (1.54)	5.24e-09 (1.48)	4.73e-09* (2.46)
GDP2019			3.89e-14 (0.03)	-2.06e-13 (-0.17)	-1.80e-13 (-0.14)	
resourcerent				0.0118 (1.38)	0.0119 (1.37)	0.0137 (1.53)
landlocked					0.0116 (0.07)	-0.0201 (-0.12)
gdp_per_ca~a						-0.0000263 (-0.78)
_cons	2.907*** (14.90)	2.770*** (14.22)	2.771*** (13.73)	2.539*** (9.71)	2.536*** (9.46)	2.532*** (9.68)
N	50	50	50	50	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 9 Regression of the Average Data Completeness Score on the average Freedom House Index

	(1) mean_DataC~s	(2) mean_DataC~s	(3) mean_DataC~s	(4) mean_DataC~s	(5) mean_DataC~s	(6) mean_DataC~s
avgFHI	0.00343 (1.09)	0.00417 (1.39)	0.00417 (1.35)	0.00685 (1.99)	0.00701 (2.01)	0.00735* (2.09)
population		4.70e-09* (2.49)	4.67e-09 (1.38)	5.76e-09 (1.70)	5.54e-09 (1.59)	5.12e-09* (2.68)
GDP2019			1.20e-14 (0.01)	-2.74e-13 (-0.23)	-1.53e-13 (-0.12)	
resourcerent				0.0142 (1.64)	0.0147 (1.67)	0.0156 (1.74)
landlocked					0.0594 (0.37)	0.0425 (0.27)
gdp_per_ca~a						-0.0000166 (-0.53)
_cons	2.932*** (19.26)	2.778*** (17.67)	2.778*** (17.14)	2.523*** (11.34)	2.494*** (10.51)	2.517*** (10.61)
N	50	50	50	50	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

An alternative to measuring the data quality is looking at the share of projects for which the researchers failed to find a reliable Table on the financial volume. I regress the share of those projects by country on the same set of variables. As with the Data Completeness Score, little validity for the hypothesis that more democratic countries have better reporting is found. Neither the coefficient for the Democracy Index, nor for the Freedom House Index is significant (see Tables 10 and 11, and the

appendix for regressions with squared terms). Only population stands out again as a possible explanation, with a negative relationship between population size and the share of missing values. As previously identified, smaller countries seem to provide better data on aid projects in collaboration with China.

Overall, less democratic or free countries do not seem more likely to be associated with worse reporting regarding Chinese projects than democratic ones. This somewhat refutes the notion that the PRC likes to shroud itself in secrecy as much as possible, as one would assume opportunities for that would be far greater when working with authoritarian states. Furthermore, these results make the other regressions run more precise – had data quality been worse for autocratic states, this would have invalidated the results.

Table 10 Regression of Share of Projects without an indicated volume on the average Democracy Index

	(1) avg_mis~2021	(2) avg_mis~2021	(3) avg_mis~2021	(4) avg_mis~2021	(5) avg_mis~2021	(6) avg_mis~2021
avgdemocracy	-0.0182 (-1.45)	-0.0202 (-1.86)	-0.0197 (-1.76)	-0.0217 (-1.73)	-0.0215 (-1.70)	-0.0204 (-1.51)
population		-2.06e-09*** (-4.13)	-1.90e-09* (-2.11)	-1.96e-09* (-2.13)	-1.87e-09 (-1.96)	-2.11e-09*** (-4.06)
GDP2019			-6.98e-14 (-0.22)	-5.23e-14 (-0.16)	-9.69e-14 (-0.28)	
resourcerent				-0.000839 (-0.36)	-0.000927 (-0.40)	-0.000754 (-0.31)
landlocked					-0.0192 (-0.44)	-0.0204 (-0.47)
gdp_per_ca~a						-0.0000321 (-0.35)
_cons	0.571*** (10.06)	0.634*** (12.32)	0.631*** (11.84)	0.648*** (9.21)	0.653*** (9.07)	0.655*** (9.27)
N	50	50	50	50	50	50

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

In summary, little evidence is found for China being more likely to allocate aid to more authoritarian countries. Factors such as population and resource rents are more likely to influence Chinese donor behaviour, as also found by Dreher et al. (2018) and Hoeffler and Sterck (2022). Amusa et al.'s (2016b) results which included a higher likelihood of aid allocation to countries with more political rights could not be replicated here. However, other explanatory variables had a much bigger impact in their findings as well. So, in essence, my research adds to the body of literature showing little to no quantitative links between recipient countries' politics and China's financial flows. Any significant results in my analysis are undermined by the models' low explanatory power¹¹. This underlines the fact that qualitative analyses seem superior in determining cause and effect of Chinese aid projects in Africa regarding political institutions.

¹¹ To simplify presentation of regression results, (adjusted) r-squared values are not included in the Tables, since they are low to very low in any case.

Table 11 Regression of Share of Projects without an indicated volume on the average Freedom House Index

	(1) avg_mis~2021	(2) avg_mis~2021	(3) avg_mis~2021	(4) avg_mis~2021	(5) avg_mis~2021	(6) avg_mis~2021
avgFHI	-0.00107 (-1.16)	-0.00141 (-1.76)	-0.00136 (-1.66)	-0.00155 (-1.64)	-0.00163 (-1.70)	-0.00155 (-1.61)
population		-2.11e-09*** (-4.18)	-1.90e-09* (-2.10)	-1.97e-09* (-2.12)	-1.86e-09 (-1.95)	-2.19e-09*** (-4.19)
GDP2019			-8.99e-14 (-0.28)	-7.05e-14 (-0.21)	-1.34e-13 (-0.39)	
resourcerent				-0.000960 (-0.41)	-0.00122 (-0.51)	-0.000964 (-0.39)
landlocked					-0.0309 (-0.70)	-0.0341 (-0.78)
gdp_per_ca~a						-0.00000583 (-0.68)
_cons	0.541*** (12.08)	0.610*** (14.52)	0.607*** (14.04)	0.625*** (10.24)	0.639*** (9.86)	0.650*** (10.03)
N	50	50	50	50	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

5. Assessing the Role of institutional quality – the case of Zambia and Zimbabwe

Zambia and Zimbabwe fit into this picture rather well. Being on relatively opposite ends of both the Democracy and Freedom House indices, they still see about equally large amounts of Chinese money flowing into their respective country. While neither is a massive country, both boast sizeable populations. Furthermore, high potential for resource rents, another predictor for Chinese Financial Flows, are prominent features of both countries' economies. But of course, there is more to this than just people, copper, or diamonds. Next to indicating some potential flaws in my models used in the quantitative analysis, this shows, first and foremost, that the amount of aid given to African countries by China can only be explained by examining individual cases. Looking at the two neighbouring countries, this will be the content of the remainder of this thesis. This chapter will first briefly compare and contrast Zambia and Zimbabwe, laying out why the two are suitable for a comparative case study. It then turns to the development of comparison categories, along which the analysis will be conducted.

5.1 Zambia and Zimbabwe – passing resemblance or nearly identical?

The exercise of comparing two different countries is always a stretch. Haiti and the Dominican Republic share the same island yet are radically differently developed. North and South Korea share nothing but name and the Korean peninsula, while the Democratic Republic of Congo and the Republic of Congo have seen different trajectories since independence. When conducting country comparisons, one therefore has to tread carefully, keeping different geographies, histories, or institutional features in mind. That being said, the following case study comparing differences in implementation, efficacy, and impacts of Chinese aid in Zambia and Zimbabwe is scrutinizing these exact institutional differences. In other aspects, the two countries show high similarities, making a comparison feasible. Both are former British colonies, gaining de-facto independence from the UK in 1964 and 1965 respectively.¹² Zambia has a significantly larger land area than Zimbabwe, of 752,614 km² compared to 390,745km². Other than that, they share geographic commonalities. As landlocked, relatively hilly or even mountainous countries, both have their tropical to subtropical climate moderated by altitude, with smaller areas classified as dry to semi-arid. These conditions make both countries relatively well suited to agriculture, which constitutes one of the two main economic pillars of both countries. Mining makes up the other pillar. In Zambia, copper is the primary mining good, whereas Zimbabwe hosts large platinum and diamond reserves. Despite these natural riches, both countries are amongst the poorest in the world. For Zambia, the 2022 GDP per capita was just \$1,467 in constant US dollars, with Zimbabwe's value slightly above that at \$1,677 (World Bank 2024e). Finally, population size is roughly equal as well, as Zambia has 20 million people, and Zimbabwe 16.3 million (World Bank 2024b).

Politically however, big differences emerge. Zimbabwe has essentially been a one-party state since independence, with the Zimbabwe African National Union – Patriotic Front (ZANU-PF) under control of Robert Mugabe ruling the country without break since 1980. Mugabe oversaw periods of unparalleled inflation (The Economist 2016), multiple disputed and violent elections, as well as agricultural degradation following disastrous land reforms (CIA 2024). One of the results is high inequality (Gini-Index score of 50.3 in 2019, World Bank 2024f), meaning few Zimbabweans profit from the country's mineral wealth, while many live in absolute poverty. Aged 93, Mugabe was eventually ousted in a 2017 military coup and replaced by his vice president Emmerson Mnangagwa, continuing the ZANU-PF's legacy as the sole ruling party. All this is reflected by a Freedom House Index score of 28/100 (Freedom House 2024), and a Democracy index of 2.92/10 (Economist Intelligence Unit 2023). Zimbabwe is thus classified as authoritarian and not free.

¹² Although Zimbabwe only gained official independence in 1980.

Zambia, nowadays, boasts much higher scores. Both its Democracy Index of 5.8 (ibid.) and its Freedom House Index of 54 (Freedom House 2024) put it well above the Sub-Saharan African average. It is however not a democracy, but only classified as a hybrid regime, which still is a stark contrast to Zimbabwe. Zambia had its own experience with a one-party rule, with the United National Independence Party (UNIP) banning all other parties in 1972. Economic mismanagement, amplified by instable copper prices, led to protests and pressure on the government in the late 1980ies, culminating in the end of the one-party state in 1990 and, relatively free and fair, elections in 1991 (Lakemfa 2021). The decade after saw political instability and repeated coup attempts, as well as a failed effort by President Frederick Chiluba to change the constitution to allow for a third presidential term in 2001. Since then, regular elections took place, with varying degrees of allegations of vote fraud by opposition parties. The 2021 election however was won by the opposition candidate by a large margin (BBC 2021), indicating the general progress towards democracy made in the country.

Overall, Zambia has much more democratic institutions than Zimbabwe, thus representing different sides of the autocracy-democracy spectrum. A comparison of impacts of Chinese development finance on both only makes sense however, when both receive similar amounts, and comparatively large amounts, of Chinese aid. Looking at Custer et al.'s (2023) dataset, this is the case. Only 6 countries in Africa have seen more aid projects than Zambia and Zimbabwe, and both are in the top ten in terms of total indicated financial volume. Remarkably, they have almost the same amount of completed or ongoing projects, at 217 and 219. In terms of value, Zambia's projects are significantly larger though, at around \$14 billion compared to \$5 billion US-Dollars. Part of this is explained by the fact that a third of Zimbabwean projects have no indicated value, compared to just a quarter of projects in Zambia whose value is unaccounted for. In total however, we can still assume projects in Zambia have a higher volume in total. Despite this difference, the key pillars for the proposed comparative case study are still valid: Zambia and Zimbabwe are very similar countries but differ in their political systems. Both are among the largest receivers of Chinese development finance, both in volume of projects. Thus, we are not going to compare apples to oranges.

5.2 Comparison categories

Given the relatively unexplored topic of the case study, there is no commonly agreed upon way to compare development finance outcomes across countries, much less when focussing on differences in governance. Guiding the comparative case study, five comparison categories from the issues most associated with Chinese development finance are used. These will be introduced in this section, along with some comments on how and why they were chosen.

Recapping common criticisms of Chinese development finance, debt is the first issue that arises. Given the prevalence of the debt-trap notion in the literature, this category needs no further introduction. It will be analysed on the state level, using literature specific to either country, as well as government documents and press releases relating to the issue of debt.

Economic impacts are divided into two categories – one focussing on macro-outcomes on the state level, the other on the way in which the populations benefit from projects, e.g., through employment opportunities, potential spillovers into other sectors, or participation in resource revenues. The Economy category will make use of available academic literature and reliable news articles, as disentangling effects of Chinese financing on the national level from scratch would require efforts beyond the scope of this thesis. In Economic Participation, I focus more on economic sustainability, individual projects and public perceptions.

Category four focuses on the usefulness of individual Chinese provided infrastructure projects for the local populations and economies. Do they provide tangible benefits, or become white elephants, as many critics predict for Chinese projects?

Finally, other factors where differences might be expected are grouped into the Emergent Themes category. This includes, e.g., environmental degradation and human rights abuses, but also subjects that might arise from the various source materials used throughout the comparative case study.

Table 2 Comparison Categories

Category	Unit of Analysis	Sources	Additional Information
Debt	State	Literature + Documents+ Press	
Economy	State	Literature + Press	GDP, employment, etc.
Economic Participation	Project	Press + Documents	Employment, Spillovers, (Resource) Exploitation
Infrastructure	Project	Press + Documents	Usage, Impact, etc.
Emergent Themes	Various	Various	Environment, Human Rights, etc.

Some commonly cited problems regarding Chinese financing are notably absent here. Issues such as corruption, discouragement of civil society, lack of transparency, or local dissatisfaction with the PRC (cf. Isakson and Kotsadam 2020, Zhao 2014, and Schiere 2011) are not part of the comparison categories¹³. They are part of the reason Zimbabwe is considered undemocratic or rather Zambia as more democratic. Differences here I thus consider as enablers of potential diverging outcomes between Zambia and Zimbabwe, and not as direct results of Chinese involvement.

The various source materials are consciously used in the comparative case study. If systemic differences in implementation and outcomes of Chinese aid projects exist, they could be found in academic literature, but also in government releases¹⁴ or the press. Furthermore, insights on whether differing institutional qualities can be the core reason are best found when considering a broad range of sources.

Before conducting the analysis, the implications of possible results should be briefly talked through. Based on western aid allocation and literature, the hypothesis is that aid in Zambia, the more democratic country, will provide more benefits to the population, and exhibit fewer negative impacts. Results along those lines would back up the more conventional approach to aid allocation by the traditional donors. If my results suggest the opposite outcome, this will indicate that Chinese development finance is more successful in institutional environments that mimic the PRC – which would not be entirely unplausible, given the domestic successes in economic development. Finally, another possible outcome is that there are no or little differences between Zambia and Zimbabwe. I would suggest two possible reasons for this. First, it could be a result of no or little success in both countries, or even negative impacts of Chinese development finance. This would raise questions about the general efficacy of cooperating with the PRC. Second, no differences in outcomes could also signify that Zambia's institutional quality is not different enough from Zimbabwe's. While it is much more democratic, it still has its fair share of undemocratic features.

¹³ Note that human rights abuses in connection to Chinese projects will be regarded as outcomes, as mentioned above.

¹⁴ How trustworthy government documents from non-democratic and rather untransparent countries, i.e. Zimbabwe and the PRC are, is discussed later.

6. Comparative Case Study

Chapter six contains the comparative case study. Here, I will identify potential differences across the five comparison categories in respect to differing outcomes and implementations of Chinese development finance in Zambia and Zimbabwe. First, the prominent issue of debt is analysed, followed by the other macro category of national economic impacts. After that, the impact of individual projects on citizens' economic opportunities and effects will be scrutinized. Category four will deal with the key infrastructure projects in both countries, and the question of if they provide tangible improvements to people's lives. Finally, a range of other issues, including but not limited to environmental and human rights records, that become apparent from the sources are looked at. Each category's results are presented throughout this chapter, while the overall findings and the discussion thereof will take place in chapter seven.

6.1 Debt

Both Zambia and Zimbabwe have recently and historically been burdened by debts. Struggles to repay them have been a common occurrence for both states. For both, China constitutes the biggest bilateral source of debt, although to varying degrees. Of Zambia's total external debt, touted to be around \$14 billion US, around ten per cent stem from the Chinese private sector, and 20 per cent from official Chinese sources (Jones et al. 2024). Zimbabwe's 2023 public external debt sat at \$12.7 billion US (Zimbabwe 2024 National Budget). Official Tables of how much of this debt is owed to China are hard to come by, reflected by varying estimates in the press, ranging from less than 25 percent, or \$3 billion US (Niathy, 2024), to "most" (africanews 2024). The latter is a sensationalist overstatement, so that both public debt levels, as well as China's share of that debt, is comparable for Zambia and Zimbabwe.

While China is the largest bilateral lender for both countries, its role in either's debt distress is routinely overstated. Compromising about a third, if not less, of Zimbabwe's and Zambia's total foreign debt, Chinese loans are significant, but not overmounting, which is important context. Thus, those loans will not be analysed within the issue of overall debt sustainability. Instead, the focus is on differences in taking out loans, as well as in restructuring and repayments. First, both countries' recent histories of debt as well as the entrance of China as a significant lender are painted.

Since independence, Zimbabwe has had problems with debt, partially stemming from loans the colonial government took out. A plethora of problems contributed to difficulties and failures to meet external obligations, such as limited economic growth, policy failures, and rampant domestic inflation (Simbrisio et al. 2021). Its first and most significant default was in 1999, on an IMF loan, and the country has been unable to access IMF resources ever since (IMF 2024). Zimbabwe increasingly had to turn to bilateral lenders, as well as private institutions to fund government expenses and repay other loans. Over time, conditions on those loans got worse and worse, and Zimbabwe "is in arrears for servicing its debt" (African Development Bank 2023). Repayments not only tighten the government's leeway on spending its limited resources, but they also put the country in a limbo. Lack of economic growth means the country has to take on higher debts, which in turn limits opportunities for state-induced economic growth (Bonga et al. 2015). Continued periods of inflation and exchange rate fluctuations increasingly added to repayment struggles as well. Nothing exemplifies this better than the April 2024 launch of its sixth currency since 2009 (Mutsaka 2024).

Zimbabwe's unsustainable debt is also associated with illicit financial flows, as well as rising poverty and inequality (African Forum and Network on Debt and Development 2018). On top of that, sanctions from multiple western countries impede potential for growth (Mafundikwa 2024). While despite those sanctions, many western nations do have lent to Zimbabwe through the Paris Club, the

World Bank, or the European Investment Bank (African Development Bank 2023), the situation gives particular importance to China as a partner and lender. Zimbabwe's potent mixture of debt defaulting, international isolation, high inflation, and negative economic growth, particularly around 2000-2008 coincided with China's rise as a global lender (African Forum and Network on Debt and Development 2018). According to Al-Fadhat and Prasetyo (2022), this gave China extreme bargaining power over Zimbabwe, representing a prime example of the debt trap policy. The first part of this are debts too high to repay, with unfavourable conditions for the borrowing country. Then, strategic control over important sectors is taken, making up for missed loan payments. Third, China presses for domestic adoption of the renminbi. This argument will serve as the benchmark for this section, for Zimbabwe and Zambia, as the latter's history of debt paints a similar picture.

Since the turn of the century, Zambia has had fewer problems with debt, but defaulted on its debt in 2020. As the Covid-19 pandemic hit and global copper demands reduced, it was unable to repay loans stacked up over the preceding decade (Gort and Brooks 2023). While Zambia still had access to more loans from traditional lenders, China's offers were better. Put plainly, offers were higher and with fewer (if any) conditions attached as compared to the IMF or Western bilateral lender countries (Brautigam 2021). As with Zimbabwe, high debt became unsustainable as Economic Growth failed to keep up.

For part one of Al-Fadhat's and Prasetyo's (2002) argument, debts that are too high to repay, there is thus little difference between Zambia and Zimbabwe. While Zimbabwe has not defaulted on its recent debts, much of it is in arrears. Consequently, both countries have debts are too high, with China being the biggest single contributor to either. Judging the conditions on loans is not feasible. It is however possible to look at differences in how China behaved in terms of loan implementation and debt forgiveness.

The nature of China's and Zimbabwe's governments means that transparency is not a major concern. Thus, it is difficult to obtain details on specific loans. What is known that most of Zimbabwean debt to China stems from the Mugabe era, with the subsequent government borrowing less (The East African 2022). In the African Forum's and Network on Debt and Development 2018 report it is argued that most deals were government-to-government. These would have avoided most public scrutiny and thorough negotiations. Thus, Mugabe's government likely had simple channels to secure loans and was incentivised to borrow too much. Ganda (2020) even sees Chinese money as a bailout for the government amidst economic crisis – taking up high amounts of debt was easier and safer than sensible economic reforms. Mudavanhu (2014) supports the notion that accepting Chinese financing was largely self-serving for the political elite.

For Zambia, things are trickier, and perhaps exemplify what one would expect from an imperfect democracy. Brautigam (2021) shows Chinese loans in Zambia to be on smaller scales, and with many different Chinese contractors involved. It has however lead to a situation in which Chinese companies compete with one another for contracts in Zambia, and the total volume of credits is not controlled by the Chinese government directly. Ironically, increased scrutiny and more stringent tender processes seem to have contributed to higher levels of Zambian debt to China. The former Zambian government was seemingly aware of this issue, as in 2021 it was revealed that overall public debt to China was almost twice as high as previously communicated (Brautigam and Wang 2021). While the overall external debt that was reported was likely correct, the share Chinese lenders had was not (ibid.). China thus contributed more to Zambia's debt distress (and default in 2020) than it did to Zimbabwe's. Ofstad and Tjønneland (2019) however stress that "The Zambian government must take full responsibility for the debt crisis as they have received ample warnings against the increasing debt burden from its own economists and opposition" (p. 2). This shows accountability in Zambia only goes that far.

Brautigam and Wang (2021) argue that the large number of different Chinese lenders might contribute to higher difficulties in debt restructuring, which will be examined now. At first glance, the higher

number of Chinese lenders corresponds to a higher number of individual debt cancellations, alleviating some concerns (Brautigam 2022). Incorporating those smaller lenders into the bigger picture however remains difficult. Zambia joined the G20 Common Framework and is described as its “test case” (Whitehouse 2024), not least due to the complications of multiple Chinese lenders. Nonetheless, progress was made¹⁵, as over \$ 6 bn US in bilateral debt were restructured in 2023, as well as a recent agreement on the restructuring of \$ 3 bn US in Zambian Eurobonds. China seemingly was not a roadblock in these negotiations, but a constructive contributor – despite “a lot of finger pointing (at China) in the early days that was somewhat unfair” (Jones et al. 2024).

Zimbabwe undoubtedly would not receive similar treatment. Still owing money to the World Bank, it is ineligible for the G20 Common Framework (Pfende 2021). But its lack of diplomatic ties to the West and low institutional quality would likely prevent similar outcomes to Zambia in debt restructuring regardless. This means China as the largest bilateral creditor is even more crucial to debt relief here, evidence of which is sparse. Recently, a cancellation of interest-free loans was widely reported on, but the amount remains unspecified. This is in line with previous debt restructuring instances, where only interest-free loans have been cancelled (Acker et al. 2020). Other treatments have included minor interest rate reductions and maturity extensions of individual loans (ibid.). A more comprehensive approach to debt relief is not apparent, different to China’s willingness to negotiate with Zambia and its other lenders.

So overall, both Zambia and Zimbabwe have borrowed too much from China, but through different channels, and with divergent recent experiences in debt relief. With no evidence of overtly unfavourable loan conditions, argument one of the debt-trap is partially correct at best in either case.

As for argument two, China taking control over strategic sectors, no instances are apparent. Zambia especially emphasises it is not giving up control over strategic sectors. Furthermore,

“Chinese companies have already had ample opportunity to invest in Zambia’s energy sector as independent power operators (and have declined) and have been steadily investing in mining since purchasing the derelict Chambishi mine in 1998. It seems unlikely that there was a Chinese conspiracy to draw Zambia into debt as a roundabout way to acquire assets. Furthermore, official sources familiar with details of Zambian debts confirmed that none of Zambia’s Chinese loans were secured with collateral or assets.” (Brautigam 2021, 10)

Zimbabwe has not seen any takeover of assets either, although it has started securing loans with assets such as platinum reserves (Niathy 2024). Still, little indicates either country is about to give up strategic control because of debt to China. Zimbabwe did adopt the renminbi as its official currency in 2014, as Al-Fadhat and Prasetyo (2022) note in favour of the debt-trap argument. The fail to mention however that Zimbabwe adopted a whole portfolio of international currencies, not just the renminbi (Mpofu 2014). Thus, argument three for the debt-trap remains invalid for Zimbabwe, which holds true as well for Zambia. As Carmody (2020) suggests, the situation might be closer to a dependency, not a trap.

The debt issue shows lots of similarities, but also some differences between Zambia and Zimbabwe. They have comparable amounts of Chinese debt, both absolutely and in relation to overall debt. Differences arise in the way loans were taken up, as well as in recent restructuring experiences. Their diverging forms of government are a likely contributor to this. In terms of outcomes, high debt levels plague both countries in various ways. China is undoubtedly the most important single contributor to this, but considering either Zambia or Zimbabwe to be in a Chinese debt-trap would be disingenuous. However, as pointed out earlier in this section, debt distress is intricately linked to Economic Growth – or a lack thereof. Thus, the following analysis of Chinese contributions to macroeconomic

¹⁵ Albeit slowly (cf. e.g., George 2024).

developments in Zambia and Zimbabwe comes with the ominous presence of debt, like the sword of Damocles hanging overhead.

6.2 Economy

This section deals with macroeconomic effects of Chinese Development Finance in Zambia and Zimbabwe. It will be relatively brief, given the macroeconomic issue of debt has already been covered, and available literature on the topic is relatively sparse. With this in mind, evidence from Chinese FDI projects is also used to supplement results regarding just Development Finance.

Given Zambia's and Zimbabwe's long lasting economic struggles, we can preclude Chinese development finance, or indeed FDI, have not caused lasting macroeconomic turnarounds. An elaborate statistical analysis by Claudio-Quiroga and colleagues (2021) finds no relationship between Chinese FDI and Economic Growth in either Zambia or Zimbabwe, contrary to the other three African countries in the study. They propose the natural resource curse as the main reason for this. Lack of absorptive capacity in the domestic economies as well as institutional inadequacies are also suggested as causes. Tongue-in-cheek, one might say that Zambia and Zimbabwe are too underdeveloped and too reliant on natural resources to benefit from Chinese investments. Following this logic, Zambia's better institutions are not enough to counteract the principal issue of economic stagnation.

This is not to say Zimbabwe's government was conducive to effective use of Chinese finance. As discussed previously, Mugabe's administration's Looking East Policy, which opened the door for Chinese investments, is seen as politically motivated (cf. also Ojakorotu and Kamidza 2018). Thus, it is unlikely particular attention was paid to development potential by Zimbabwean officials. For instance, Ganda (2020) points out that Chinese companies often do not adhere to local laws, and corruption is frequent. He describes labour relations as poor, specifically regarding low wages and poor worker treatment. High-paying jobs are out of reach for most Zimbabweans and largely reserved for Chinese workers (Hogwe and Banda 2017) – which also means locals cannot gain experience in skilled positions. Both are connected to the political system, in which loyalty matters above competency when hiring officials. It also shows that Zimbabwe's economy and institutions discourage investment from other international sources, leaving few alternatives to China. The mining sector, which has attracted FDI from other countries, is connected to GDP growth when resource prices are high (Gochero and Boopen 2020) – an unsustainable plan for development. China has also primarily invested in mining. Furthermore, Chinese finance however offers little in terms of local spillovers, whatever sector is invested in (Ganda 2020).

The lack of multiplier effects is observed in Zambia as well. One main reason is that Chinese loans often go to Chinese constructors (African Forum and Network on Debt and Development 2018) who also tend to hire Chinese immigrant workers instead of locals. Postel (2015) shows how Chinese labour migration to Zambia has been steadily increasing. Jobs for Zambians have been created. In 2017 alone, of the 70,000 newly created jobs, 60 % are supposedly the result of Chinese commercial activity, according to the Ministry of Labour in Zambia (Shieh et al. 2021). Unsurprisingly, the sectors with most jobs are construction, and especially mining (Sinkala and Zhou 2014). However, most of these jobs are low-skilled, often temporary, and offer little long-term perspective. Knowledge spillovers are “very minimal” (Lubinda and Jian 2018, 206), as Zambian entrepreneurs and officials lack direction and capacity (ibid.). In theory, there is also a trade-off between transfer of technology and knowledge and creation of a plentiful low-skilled jobs – in reality, neither is happening on a larger scale (Sinkala and Zhou 2014). Chinese firms instead prioritise short-term thinking and cost cutting, especially in the lucrative copper sector (Haglund 2009). Zambian tender processes invite a plurality of Chinese actors and incentivise competition – but apparently without the intended outcomes.

Overall, neither Zambia nor Zimbabwe sees a positive large-scale economic impact of Chinese financing. In Zimbabwe, China can call the shots as officials lack authority and skill. In Zambia, the fragmentation of Chinese actors on the ground, a result of some governmental capacity, is not

managed to the benefit of its people.

6.3 Economic Participation

The previous section has shown there is little evidence of sustained macroeconomic impact of Chinese finance in either Zambia or Zimbabwe. Nonetheless, positive developments on the smaller scale are not out of the question. The following paragraphs deal with experiences in employment, resource exploitation, and economic spillovers through individual projects, public perception, and scientific and journalistic sources.

For both countries, positive perception of China's impact has been rapidly declining. Afrobarometer poll show that while in 2014, 72 % of Zambians viewed China's political and economic influence as somewhat or very positive, this Table dropped to 42 % in 2022 (Chibwili 2024). Negative sentiments towards Chinese individuals and companies are on the rise, exemplified by "considerable nervousness and xenophobic attitudes and practices" (Cheelo and Nakamba-Kabaso 2018). Afrobarometer surveys show a similar cooling attitude towards China in Zimbabwe. Whereas 48 % of respondents thought China's impact was somewhat or very positive in 2014, only 24 % shared that opinion in 2022 (Afrobarometer 2014 and 2022). Interestingly, people from rural areas view China's engagement more positively than urban citizens. A survey of urban professionals from 2023 also reveals that only 37 % view China's influence favourably (Hatungimana and Nagao 2023)¹⁶. Attempts at strikes in Chinese construction sites have long been reported, and occasional boycotts of Chinese products reflect negative sentiments as well (Smith 2012). Dissatisfaction with Chinese involvement has even found its way into the language. The term "zhing-zhong", initially reflecting the way Zimbabweans perceived Mandarin Chinese's sound, turned into a derogatory term for Chinese people. Today, it is also widely used to refer to something being inferior, from products to infrastructure or ideas (Mbiba 2017). Finally, the few independent newspapers "display a great deal of animosity towards the Chinese" (Hodzi et al. 2012, 88).

Overall, public perception in both Zambia and Zimbabwe shows many citizens do not feel like they benefit from Chinese involvements.

A reason for this is a feeling of Chinese resource grabs. Hogwe and Banda (2017) describe how minerals mined through Chinese-Zimbabwean projects have to be sold to China at under market-value. Such big mining projects also drive small-scale domestic miners out of them market (Matiashe 2024). For Zambia's copper industry, comparable issues of discounted resource exports to China have not arisen. The country's dependence on the metal's world market prices however are not a sustainable growth pathway, especially as exports of raw or semi-raw materials without further processing to China continue to be the norm (Hampaye et al. 2024).

An important difference for Zambia is whether projects are conducted by Chinese state-owned-enterprises or privately-owned ones. The former are associated with stricter following of Zambian laws, which, as pointed out by Shieh et al. (2021) are good on paper. However, a lack of enforcement capacity is used by private Chinese¹⁷ to circumvent rules and regulations (ibid.). This again shows us how Zambian institutions are not developed enough to achieve markedly better results when compared to Zimbabwe.

However, some differences are notable. China's Special Economic Zones in Zimbabwe, for instance, are largely focussed on minerals (Lianxing and Chuanjiao 2015), whereas more diversified initiatives are in unspecified phases of planning (Nyamukondiwa 2023). Zambia was the first country in Africa to setup special economic Zones with China (Hampwaye et al. 2024). While there was also an initial

¹⁶ Afrobarometer's lower Table is explained by 34.8% of respondents answering "Don't know" in the 2022 survey. Hatungimana and Nagao (2023) do not specify whether this was an option in their survey.

¹⁷ And private companies from other countries

focus on mining and raw products, subsequent Special Economic Zones are described as much more diversified (ibid.), with more value-added production happening in Zambia. While it is too early to really gauge the impact of this, it shows that the Zambian government has a higher commitment and capacity to try and ensure diversified economic development in deals with China than the Zimbabwean regimes have and have had.

Projects in digitization further highlight this point. The 2015 launch of “Smart Zambia”, in collaboration with Chinese telecommunications giant Huawei, ought to upgrade digital infrastructure, and standardise computing systems of different levels of government (Savana 2015). Ergo, Zambia is trying to enhance its administrative capacity and efficiency with the help of Chinese expertise. Smart Zambia is complemented by additional projects targeting the enhancement of digital infrastructure and the initial connection of more rural areas to the internet (cf. Custer et al. 2023). While this can only lay the groundwork for economic development, it is a step in the right direction.

Overall, the economic impacts of China’s engagement are poor in both countries. Initial positive views in the populations have soured overtime. Especially in Zimbabwe, few things point to sustainable economic development. For Zambia, governmental capacity is not high enough to make the most out of Chinese investments, but some positive signs are visible.

6.4 Infrastructure

Through its Belt and Road Initiative, China has built much infrastructure in Zambia, Zimbabwe, and beyond. Its aim is “to improve connectivity and cooperation on a transcontinental scale” (Ruta 2018), and foster economic growth through physical linkages, or corridors. However, many attribute the initiative to a domestic Chinese problem, namely overcapacity in the construction sector (cf. Kun 2014 and Huang 2016). This implies a Chinese strategy to construct as much infrastructure as possible abroad, primarily to keep its own construction industry afloat. If that is the scenario, China could be open to finance and construct numerous large-scale projects, regardless of whether they suit their partner countries’ needs. While infrastructure is undoubtedly lacking in Zambia and Zimbabwe, this does not mean that Chinese built projects do serve the people. Impact and quality of Chinese built infrastructure will be analysed in this section, focussing mainly on transportation and large-scale energy projects.

Few, if any projects in Africa, represent the Sino-African relationship better than the TAZARA railway in Tanzania and Zimbabwe. Built in the 1970ies with the primary goal of connecting Zambia and its copper to the ocean (Breuer 2017), it has long been described as crucial to Zambia’s economy (Fallon 2013), and also transported many people back and forth. For more than two decades now though, the railway has been in decline, exemplified by safety concerns and unprofitability (ibid. and Reuters 2013). While freight traffic has picked up since 2013, it is not enough to become profitable (Tanzania-Zambia Railway Authority 2023). In 2023 though, China entered negotiations with Zambia and Tanzania to revitalise the line with up to \$ 1 billion in investments (Rogers 2024). Similarly, 2024 has seen negotiations for a revamp of Zimbabwe’s state owned railway company financed by China (Ndlovu 2024). Naturally, what will come of both is yet to be seen. However, China’s renewed attention to railways in Zambia and Zimbabwe holds positive signs for low-emission transportation of people and goods.

Receiving more international attention are Chinese-funded airports. Most notably of all perhaps is Robert Gabriel Mugabe in Zimbabwe’s capital Harare, which received numerous upgrades, among them a new international terminal, funded by Exim Bank and constructed by Chinese constructors (Xinhua 2023). Capacity increased to 6 million passengers a year, more than triple the highest annual number recorded at the airport (Bhebe 2023). President Mnangagwa praises the airport’s quality and claims “positive effects to the country’s economy, ‘including skills and technology transfer, as well as the creation of employment and empowerment opportunities.’” (Xinhua 2023) Given the airport’s overcapacity and cost, combined with Zimbabwe’s inability to generate significant multiplier effects,

it's doubtful that the renovation will prove to be a sensible priority. That exact story has played out already at Victoria Falls airport.

Initially a small and out of date facility, Victoria Falls airport was renovated and expanded from 2012 to 2016, financed by Exim Bank and constructed by Chinese enterprises (Alfa Shaban 2019). The relaunch tripled the airport's capacity which now sits at over 1.6 million passengers a year and enabled wide-bodied aircraft to land close to the major tourist destination (Sundaymail 2017). In 2017, passenger numbers increased by about a quarter to 284,330 passengers. During Covid, numbers decreased dramatically, but rebounded to 234,600 in 2022, with more expected in 2023 (Bhebe 2023). The airport's expansion has indeed increased flight traffic, which also translated to higher hotel occupancies (Sundaymail 2017). It is however far below its new capacity, even in peak travel times. Further, there are reports that many tourists just use the airport to get to the Victoria falls, while booking stays, tour guides, and restaurant tables in nearby Zambia. Insecurity about the economic situation of the country and high prices because of the de-facto use of the US Dollar are cited as main reasons (ibid.). Thus, much of the economic benefit of the new, functional airport do not stay in Zimbabwe because of underlying systemic issues.

Zambia itself has an airport close to Victoria falls as well, Harry Mwanga Nkumbula International. It sees passenger numbers on par with its Zimbabwean counterpart, despite lower capacity and fewer airlines touching down (Zambia Airport Ltd. 2024). This again shows tourists prefer being on the Zambian side of the border. In parallel to the renovation on Zimbabwe's Victoria Falls airport, there have been upgrades to it as well, incidentally not financed by China. It has however been active in building and renovating Zambia's other three international airports, the Kenneth Kaunda International Airport serving Lusaka, and two smaller airports serving the tourism and copper industry respectively (Custer et al. 2023). While all three have seen growing numbers of passengers, the pandemic years aside, all run well under their capacities (Zambia Airport Ltd. 2023). Since they airports function and have increased air traffic, few would consider the airport projects as complete failures. Nonetheless, they make up a significant part of Zambian debts to China, and few citizens could ever afford taking a flight. As with Robert Mugabe International in Zimbabwe, they do not seem like a sensible priority for sustainable development.

This holds true even more so for two large stadiums built in Lusaka and Ndola, which combined have added more than \$100 million to Zambia's debt to China, while rarely attracting crowds larger than 5,000 (Jalloh and Wan 2019 and Orr 2020). Such flagship projects add little to ordinary Zambians' lives and are another explanation for the growing resentment discussed in the previous section.

Zimbabwe also struggled with a stadium. Its National Sports Stadium was renovated in cooperation with China from 2006-2010 – only to be in disrepair again today, with the government struggling to find funds for further renovations (cf. Chikamhi 2023 and Chibamu 2024). Ganda (2020) expands on this issue: “The Chinese have been accused of delivering projects of poor quality at an inflated cost.” (p. 946) Proper tendering processes are rarely followed, and corruption is commonplace, leading to limited supervision subpar infrastructure. Sometimes, this also means projects take much longer to complete than initially intended – contrary to the common praise that Chinese companies work quickly and efficiently. The Kunzwi dam, e.g., supposed to supply the capital region with water, was a project started in 2005 – as of today, completion is not expected before 2026 (Hogwe and Banda 2017 and Manomano 2024). Again, tendering processes were apparently not followed (Hogwe and Banda 2017). Another major project, the Matabeleland Zambezi water pipeline, received a loan of over \$860 million from Chinas Exim Bank in 2012 (Custer et al. 2023). It was supposed to provide water to citizens and agriculture. While construction did start, it faced many delays. Strikingly, Zimbabwe had also not waited for all necessary ratifications of the Zambezi Watercourse Commission Protocol, without which it could not legally draw water from the Zambezi River (Hove 2015). Eventually, the project came to a halt in 2019, as the Chinese government pulled out of the project due to concerns over Zimbabwe's high risk in infrastructure financing. This shows that Zimbabwe's governance environment

undermines important infrastructure projects¹⁸, despite China's willingness to invest large sums. While Zimbabwe's government has continued works on the project independently of China, progress has been slow (Netsianda 2021). A final example of showing implementation issues is the Gwanda solar power plant. Planned as a Zimbabwean-Chinese joint venture, financed with an Exim Bank loan, the project ground to a halt as contractual disputes with Zimbabwe's state owned power utility company arose (Custer et al. 2023), likely because of financial concerns over the project. In a court ruling, it was decided the project had to be implemented or Intratek, the Zimbabwean contractor, had to be paid substantial damages. A revised implementation plan was set up, which saw Chinese funding being pulled out. Despite new international funding sources (ibid.), the project is still stalling, and the site "overgrown with bushes and shrubs, lacking signage and proper facilities." (Harris 2024) Media reports make no mention of the Chinese contractor anymore (cf. ibid and Munyoro 2023), indicating Zimbabwe has lost all Chinese support on the project. While this case restores some faith in Zimbabwe's legal system, it also illustrates the state's lacking financial capacity and administrative power.

In Zambia, similar experiences are less common. The Lusaka-Ndola Dual Carriageway, for instance, has seen sustained progress. Largely financed by China, its expected final price will be less than fifty per cent of the original calculations (Lusaka Times 2024a).¹⁹ Most of the construction was done by a Chinese contractor. 20 per cent of the work though went to local Zambian enterprises, underscoring some attempts at skill transfers and economic participation into the project (Zanis News 2024). Replacing existing infrastructure that has seen frequent accidents and long travel times, the upgraded road should increase safety and support economic activities between two major population centres (Lusakatimes 2024a). The Lusaka Urban Road Project was a similar success. Not only was it completed in time, cost saving also enabled to upgrade a longer stretch of road than initially planned, all while hiring 41 subcontractors (Custer et al. 2023). Not all road projects have gone as smoothly, however. The Kawambwa-Mporosko road, which was set to be substantially upgraded, has seen no work done yet. Instead, a corruption scandal, terminated the project. A domestic subcontractor to the Chinese construction firm allegedly bribed its way into the project, paying money to a former government minister (Mbewe 2022). Chinese involvement in Zambian infrastructure has generally been associated with increased corruption (Lifuka 2022), underlining the nation's governance problems.

Next to roads, electricity generation plays a major part in Chinese infrastructure projects in Zambia. At Musonda Falls, a hydropower plant received significant upgrades. Increased electricity generation will be used for "land aggregation, agro-processing, small-scale mining" (Lusakatimes 2020) and more. Despite some delays in finishing construction, this project can be considered a success, with tangible benefits to surrounding regions (ibid. and Custer et al. 2023). Similarly, the Luanza Hydropower Station was expanded in cooperation with China, a project that finished about a year later than intended (Custer et al. 2023). Despite its completion, there have been controversies surrounding the project, since the Chinese contractor was not selected through competitive bidding and had underperformed in previous construction contracts (ibid.). At the power station, this became apparent as the "'bridge on the access road to the power station had collapsed' and the 'office block was not in use despite having been completed'." (ibid.) Moreover, since 2023 electricity generation has been significantly reduced due to low water levels, putting the long-term feasibility of the project into doubt (Lusaka Times 2024b).

Overall, Zambia has had better experiences with Chinese infrastructure. While both countries suffer from expensive flagship projects that are at risk of becoming white elephants, Zimbabwe has seen

¹⁸ The Matabeleland Zambezi Water Project has been failed to implement long before Chinese involvement as well, to no success. See Gideon and Alouis (2013) for a detailed analysis.

¹⁹ Not excluding the possibility the original price was intentionally inflated to now bolster the project's efficiency.

much more problems in finishing infrastructure project. Quality related issues are also more common in Zimbabwe. Zambia's governance has helped achieve successful infrastructure projects, but corruption remains an issue.

6.5 Emergent Themes

The final section deals with issues common in the literature and media associated with Chinese aid projects in Zambia and Zimbabwe. Environmental issues and working standards are the main concerns routinely seen in the literature.

China's environmental track record is poor in both countries. In Zimbabwe, not adhering to environmental laws is the norm for Chinese enterprises (Ganda 2020). As the country does not have a "comprehensive legislative framework" (UN-Habitat 2024) on climate change and environmental issues to begin with, this brings with it substantial risks to nature and adjacent communities. Hogwe and Banda (2017) note "visible [...] environmental degradation." (p. 244) It should be noted that there have been significant investments into renewable energy in both countries as well. But immediate impacts on the environment likely outweigh that fact.

Zambia, one of the countries with the most intact ecosystems on earth, is also endangered by a Chinese disregard of environmental practices (Cheelo and Nakamba-Kabaso 2018). Especially the mining sector's impact on the environment has worsened since the beginning of China's involvement. There are accusations of China essentially exporting environmental damage by closing mines at home and defying environmental regulations in Zambia (McKinney et al. 2020). Damages range from "serious pollution of air, water, and land; damaging wildlife habitat and displacing local communities without adequate compensation." (Dynamic 2016). It seems neither country has the capacity to enforce environmental regulations. A more cynical explanation could be that officials at the national and local level might turn a blind eye to the Chinese misconduct. They could fear any persecution of Chinese companies might put future investments at risk.

Similar oversight issues also plague citizens working for Chinese enterprises, most often in the mining sector. In Zambia, "they suffer from abusive employment conditions that fail to meet domestic and international standards and fall short of practices among the copper mining industry elsewhere in Zambia" (Human Rights Watch 2011), often directly threatening health and safety. Reports to the Zambian government are discouraged, all the while the Chinese companies are allegedly protected by the government (Makoshori 2012). Similarly in Zimbabwe, "hard labour, exposure to risky conditions, violation of labour laws, long working hours, non-payment of overtime, [and] disregard of public holidays" (Hogwe and Banda 2017, 244) are commonplace. Physical abuses like beating and locking up workers are also reported (Makoshori 2012 and Longhi 2012). As in Zambia, "Chinese companies seem to have a kind of protection from the government" (ibid.). In both countries, labour unions are routinely suppressed, and attempts at organising can result in being fired (ibid. and Shieh et al. 2021). While some of these reports are more than a decade old, they show that Chinese companies in both countries essentially have free reign, and governments are not willing to challenge them.

A reason for this is the tight-knit relationship China has with either government. In Zimbabwe, this becomes apparent in gestural aid projects, e.g., the donation of 100 busses to Harare, incidentally during election campaigns (Custer et al. 2023). Also during election season, the donation of T-shirts to the Mugabe campaign almost comically underscores how reciprocal elite interests are often the most important part in Zimbabwe-China relations (ibid.). This becomes more sinister taking Chinese military aid to the Mugabe administration into account, which directly helped the regime suppress its people (Hodzi et al. 2012). Political analyst Charles Mangongera put it like this at the time:

"The defence college not only marks the continued militarisation of Zimbabwean society, but also the dominance of Chinese interests in the country. Zimbabwe is not under threat of attack from anyone and such a huge investment could have gone into improving the situation at our defunct state"

universities. Mugabe sees the military as a source of his power and will now do anything to please the military chiefs.” (Ndlovu 2012)

While the military eventually got too strong for Mugabe, elite interests are evidently a high priority in the two countries’ cooperation. In other sectors, some efforts do directly serve the people, however. In agriculture, Zimbabwe has strongly benefitted from Chinese help (Anshan et al. 2012). When help was not given in grants or free equipment, repayment terms often included manageable amounts of agricultural products (Hogwe and Banda 2017). Only the strong focus on tobacco and other cash crops is criticized (ibid.). Similarly, efforts in the health sector, ranging from new hospitals, the sending of doctors and nurses as well as medicines and vaccines is largely viewed as positive (Custer et al. 2023). The same holds true for Zambia, which also received donations in the health sector, as well as food relief and fertiliser, for instance (ibid.).

7. Discussion

Before concluding the thesis, this chapter discusses some issues and concerns over the research conducted here. It primarily concerns the qualitative analysis, but will start, chronologically, with some thoughts on the quantitative analysis.

As presented in chapter four, the quantitative analysis has few statistically significant results, and the models' corresponding explanatory power is weak. This can mean two things. It could show that there is no pattern in Chinese allocation of funds to African countries, as also indicated by previous studies. Another possibility is that the chosen data and econometric methods were not apt to capture the whole picture. More elaborate procedures might have found different results. Likely, it is a mixture of the fact China essentially borrows and grants money to everyone who wants it, as all as the selection of statistical tools that were not wholly adequate.

Regarding the qualitative case study, some more issues arise, which I will talk about one by one. First, given China's and Zimbabwe's, but also Zambia's institutional qualities, transparency is difficult to come by. That means official publications are not necessarily trustworthy – if they are obtainable in the first place. Repeatedly, accessing Zimbabwean governmental websites was not possible, even when using different browsers or VPN services. Moreover, the available literature on each country, particularly in relation to China, is quickly exhausted. Therefore, I had to depend on journalistic articles more than I would have preferred, with the reliability of these sources being hard to verify.

I also could not focus on changes overtime, which especially relates to the end of the Mugabe reign, as well as to recent reductions of Chinese investments in both countries. Furthermore, the complexity of these Chinese involvements is difficult to overstate. Separating development finance from standard Chinese FDI was not possible. To fully gain an understanding of China's impact, implications of trade would have to be considered as well. For instance, cheap Chinese imports could undermine the competitiveness of domestically produced goods.

In addition to that, the complex structure of Chinese development Finance, including state-owned and private enterprises, government officials, banks, and export credit agencies, was only briefly touched upon and should have been paid more attention. This would have been easier when considering fewer sectors, and perhaps reducing the comparison categories to one or two. However, I choose to cover multiple fields to contribute to a broader understanding.

8. Conclusion

This thesis supports the existing literature's view that Chinese aid allocation in Africa is independent of institutional qualities. Population, economic performance, and resource rents are the only reliable predictors. The comparative case study of Zambia and Zimbabwe, examining the impacts of Chinese aid, only partially substantiates the notion that Zambia's institutions should lead to better outcome. Both countries have similar levels of debt to China, which negatively impact fiscal performance. A true debt-trap however, as often suggested, is not apparent in either country. It also seems that neither country has the capacity to benefit economically from Chinese involvement. Job creation, economic diversification, or multiplier effects are rare phenomena, although Zambia shows some better signs than Zimbabwe. This trend continues in infrastructure, a major part of Chinese projects. While both fall foul of prioritising shiny flagship projects with little use, Zambia can boast some successes, specifically in energy infrastructure and roads. The mining sector, which sees the largest influx of Chinese money, is riddled with problems. Zambian and Zimbabwean workers are equally subject to exploitation and abuse and most mined goods are exported raw without corresponding value-adding industries in the country. Chinese mining companies also disregard most environmental legislation. This fits into the broader picture, that governments in both countries not only lack the capacity, but also the willingness to challenge Chinese companies and officials. Some cooperation is strictly elite serving, even more so in Zimbabwe under the Mugabe regime.

While overall Zambia does fare a little better, it can be assumed that the institutional differences are not large enough enable substantially better outcomes than in Zimbabwe. While legislation at times is described as good, enforcement is lacking. This begs the question whether similar analysis in countries with better performing economies that have a similar institutional gap would see different results of Chinese development finance.

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Table 12 Regressions of Total Number of Projects on Squared Explanatory variables

	(1) total_obs	(2) total_obs
democracysq	1.801* (2.44)	
population	0.000000657* (2.48)	0.000000692* (2.52)
gdp_per_capita	-0.0116* (-2.38)	-0.00848 (-1.85)
resourcerent	2.269 (1.86)	1.943 (1.57)
landlocked	-5.692 (-0.25)	5.992 (0.26)
FHIsq		0.994 (1.89)
_cons	103.0*** (4.11)	108.1*** (4.11)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 13 Regressions of Average Data Completeness Score on squared Explanatory Variables

	(1) mean_DataC~s	(2) mean_DataC~s
democracysq	0.00976 (1.82)	
population	4.85e-09* (2.52)	5.23e-09** (2.72)
gdp_per_capita	-0.0000332 (-0.94)	-0.0000224 (-0.70)
resourcerent	0.0137 (1.55)	0.0142 (1.64)
landlocked	-0.0339 (-0.21)	0.0387 (0.24)
FHIsq		0.00757* (2.06)
_cons	2.717*** (14.96)	2.678*** (14.52)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 14 Regressions of Share of Projects without an indicated Volume on Squared Explanatory Variables

	(1) avg_mis~2021	(2) avg_mis~2021
democracysq	-0.00228 (-1.58)	
population	-2.14e-09*** (-4.11)	-2.21e-09*** (-4.22)
landlocked	-0.0171 (-0.39)	-0.0335 (-0.77)
resourcerent	-0.000740 (-0.31)	-0.000723 (-0.31)
gdp_per_capita	-0.00000159 (-0.17)	-0.00000451 (-0.52)
FHI		-0.00163 (-1.63)
_cons	0.612*** (12.47)	0.617*** (12.28)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 15 Regressions on the Share of Projects classified as Infrastructure Projects

	(1) mean_Infra	(2) mean_Infra
avgdemocracy	0.0104 (0.85)	
population	7.98e-10 (1.71)	8.22e-10 (1.74)
gdp_per_capita	-0.00000683 (-0.83)	-0.00000506 (-0.65)
resourcerent	0.00431 (1.98)	0.00414 (1.87)
landlocked	-0.0429 (-1.09)	-0.0369 (-0.93)
avgFHI		0.000571 (0.66)
_cons	0.199** (3.12)	0.213*** (3.63)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 16 Regressions on the Share of Projects classified as Grants

	(1) share_Grant	(2) share_Grant
avgdemocracy	0.00762 (0.42)	
population	-1.42e-09* (-2.05)	-1.32e-09 (-1.91)
gdp_per_capita	-0.0000192 (-1.57)	-0.0000201 (-1.78)
resourcerent	-0.00135 (-0.42)	-0.0000893 (-0.03)
landlocked	0.0638 (1.09)	0.0735 (1.27)
avgFHI		0.00151 (1.18)
_cons	0.821*** (8.68)	0.773*** (9.01)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 17 Regressions on the Share of Projects Classified as Loan

	(1) share_Loan	(2) share_Loan
avgdemocracy	0.0124 (0.95)	
population	1.92e-09*** (3.84)	1.93e-09*** (3.80)
gdp_per_capita	0.00000924 (1.05)	0.0000118 (1.42)
resourcerent	0.00420 (1.80)	0.00373 (1.57)
landlocked	-0.0464 (-1.10)	-0.0403 (-0.95)
avgFHI		0.000474 (0.51)
_cons	0.0326 (0.48)	0.0608 (0.96)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 18 Regressions of the Share of Investment Project Loan Projects

	(1) mean_IPL	(2) mean_IPL
avgdemocracy	0.00393 (0.34)	
population	1.35e-09** (3.06)	1.35e-09** (3.01)
gdp_per_capita	0.00000225 (0.29)	0.00000331 (0.45)
resourcerent	0.00446* (2.16)	0.00414 (1.98)
landlocked	-0.0355 (-0.95)	-0.0342 (-0.91)
avgFHI		0.0000186 (0.02)
_cons	0.0656 (1.09)	0.0815 (1.47)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 19 Regressions of Share of Health-Related Projects

	(1) share_120	(2) share_120
avgdemocracy	-0.00856 (-0.92)	
population	-6.95e-10 (-1.94)	-6.92e-10 (-1.90)
gdp_per_capita	-0.00000609 (-0.97)	-0.00000812 (-1.37)
resourcerent	0.0000200 (0.01)	0.000524 (0.31)
landlocked	-0.000956 (-0.03)	-0.00447 (-0.15)
avgFHI		-0.000185 (-0.28)
_cons	0.333*** (6.85)	0.306*** (6.79)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 20 Regressions of Share of Water Supply and sanitation related projects

	(1) share_140	(2) share_140
avgdemocracy	-0.000778 (-0.34)	
population	2.14e-11 (0.25)	1.29e-11 (0.15)
gdp_per_capita	-0.00000130 (-0.85)	-0.00000126 (-0.88)
resourcerent	0.0000983 (0.24)	0.00000394 (0.00)
landlocked	-0.00422 (-0.57)	-0.00509 (-0.70)
avgFHI		-0.000129 (-0.80)
_cons	0.0293* (2.47)	0.0328** (3.03)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 21 Regressions of Energy related Projects

	(1) share_230	(2) share_230
avgdemocracy	-0.00367 (-0.99)	
population	4.10e-10** (2.86)	3.95e-10** (2.74)
gdp_per_capita	0.00000116 (0.46)	0.00000698 (0.30)
resourcerent	0.000206 (0.31)	0.000167 (0.25)
landlocked	0.00690 (0.57)	0.00441 (0.37)
avgFHI		-0.000280 (-1.05)
_cons	0.0432* (2.22)	0.0423* (2.36)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 22 Regressions of Share of other Social Infrastructure Projects

	(1) share_160	(2) share_160
avgdemocracy	0.00524 (1.26)	
population	-1.37e-10 (-0.86)	-1.19e-10 (-0.74)
gdp_per_capita	0.00000144 (0.51)	0.00000218 (0.83)
resourcerent	-0.0000575 (-0.08)	-0.0000464 (-0.06)
landlocked	-0.0116 (-0.87)	-0.00827 (-0.61)
avgFHI		0.000363 (1.23)
_cons	0.0469* (2.16)	0.0502* (2.51)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 23 Regressions of Share of Transport and Storage Projects

	(1) share_210	(2) share_210
avgdemocracy	0.00444 (0.98)	
population	3.69e-10* (2.11)	3.78e-10* (2.13)
gdp_per_capita	-0.00000267 (-0.87)	-0.00000189 (-0.65)
resourcerent	0.000834 (1.02)	0.000747 (0.90)
landlocked	-0.0192 (-1.30)	-0.0167 (-1.13)
avgFHI		0.000232 (0.71)
_cons	0.0380 (1.60)	0.0448* (2.04)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 24 Regressions of Banking and Financial Services Projects

	(1) share_240	(2) share_240
avgdemocracy	0.00378 (1.20)	
population	3.32e-10** (2.74)	3.42e-10** (2.78)
gdp_per_capita	0.00000276 (1.30)	0.00000337 (1.68)
resourcerent	0.0000265 (0.05)	-0.0000149 (-0.03)
landlocked	-0.00365 (-0.36)	-0.00141 (-0.14)
avgFHI		0.000223 (0.99)
_cons	-0.0217 (-1.32)	-0.0173 (-1.13)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 25 Regressions of Agriculture, Forestry, and Fishing Projects

	(1) share_310	(2) share_310
avgdemocracy	0.000502 (0.16)	
population	-4.59e-11 (-0.39)	-2.93e-11 (-0.25)
gdp_per_capita	-0.00000646** (-3.09)	-0.00000677** (-3.51)
resourcerent	-0.0000892 (-0.16)	0.000155 (0.28)
landlocked	0.000634 (0.06)	0.00189 (0.19)
avgFHI		0.000226 (1.04)
_cons	0.0726*** (4.49)	0.0628*** (4.27)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 26 Regression of Share of General Environmental Protection Projects

	(1) share_410	(2) share_410
avgdemocracy	0.000632 (1.12)	
population	2.48e-11 (1.14)	2.37e-11 (1.07)
gdp_per_capita	0.00000213 (0.56)	0.00000387 (1.07)
resourcerent	-0.0000295 (-0.29)	-0.0000821 (-0.79)
landlocked	0.00172 (0.94)	0.00192 (1.03)
avgFHI		0.0000151 (0.04)
_cons	-0.00155 (-0.52)	0.00109 (0.40)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 27 Regression of Share of General Budget Support

	(1) share_510	(2) share_510
avgdemocracy	-0.00127 (-1.79)	
population	3.63e-13 (0.01)	-1.92e-12 (-0.07)
gdp_per_capita	0.00000119 (0.25)	-0.00000112 (-0.25)
resourcerent	-0.0000697 (-0.55)	-0.0000393 (-0.30)
landlocked	0.00244 (1.07)	0.00175 (0.75)
avgFHI		-0.0000619 (-1.21)
_cons	0.00737 (1.99)	0.00520 (1.50)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 28 Regressions of Share of Actions Related to Debt

	(1) share_600	(2) share_600
avgdemocracy	0.000500 (0.34)	
population	-1.18e-10* (-2.07)	-1.19e-10* (-2.07)
gdp_per_capita	-0.00000375*** (-3.75)	-0.00000360*** (-3.85)
resourcerent	0.000498 (1.88)	0.000451 (1.68)
landlocked	-0.00749 (-1.56)	-0.00735 (-1.53)
avgFHI		-0.0000287 (-0.03)
_cons	0.0301*** (3.89)	0.0324*** (4.54)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 29 Regressions of Share of missing values on squared explanatory variables.

	(1) avg_missing_2021	(2) avg_missing_2021
democracysq	-0.00228 (-1.58)	
population	-2.14e-09*** (-4.11)	-2.21e-09*** (-4.22)
gdp_per_capita	-0.00000159 (-0.17)	-0.00000451 (-0.52)
resourcerent	-0.000740 (-0.31)	-0.000723 (-0.31)
landlocked	-0.0171 (-0.39)	-0.0335 (-0.77)
FHIsq		-0.00163 (-1.63)
_cons	0.612*** (12.47)	0.617*** (12.28)
N	50	50

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001