

**FOREIGN AID FLOWS AND CORPORATE LEVERAGE:  
EVIDENCE FROM AFRICA**

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## **Abstract**

We study the effect of foreign aid on corporate leverage in 22 African countries, using data from 1,639 non-financial listed firms. We show a negative relationship between total foreign aid and corporate leverage, which varies depending on the channels of aid and firms' ownership. The effect of foreign aid flows is stronger for long-term leverage, and it depends on the types and sources of aid. The Development Assistance Committee (DAC) and non-DAC members aid have different effects, as do bilateral and multilateral aid. We find that the negative effect of foreign aid on corporate debt weakens during election times. The effect is influenced by the chief executive's party orientation and government effectiveness. We also find that the effect of foreign aid on corporate leverage is influenced by how it is allocated. Total Foreign aid has a significant positive effect only for firms that pay bribe while aid to private sector development has a significant positive effect only for larger firms. Our results are consistent with an instrumental variable based on the voting similarity index between donors and recipient countries in the United Nations General Assembly and our Diff in Diff analysis.

**Keywords:** Foreign aid, Multilateral aid, Bilateral aid, DAC aid, Ownership, Corporate Leverage

**JEL Classification:** F34, F38, F65, G28, G32, G38, H63

## **1. INTRODUCTION**

Increasing government budget deficits and debt levels have been a focal point during the financial crisis. Yet, the impact of foreign aid flows on the corporate capital structure remains less examined. Our paper delves into this area, empirically investigating how changes in foreign aid flows influence corporate financing decisions in developing economies. We suggest a complex interplay where foreign aid flows could lead to a crowding out of corporate debt, with the extent and nature of this effect varying across different contexts and types of firms.

Few countries have successfully transitioned from significant recipient countries to donor countries and enjoy advanced economic growth, while many others are low-income and aid dependent. Moreover, foreign aid has largely failed to boost the private sector, a key factor explaining the divergent pathways of aid and financial development outcomes across different countries. Several previous studies focus on the effectiveness of foreign aid and economic development and have conflicting results (See (Burnside & Dollar, 2000; Clemens et al., 2012)). Despite decades of donor efforts for private sector development, private sectors in developing countries have still failed to achieve sustainable financial access and development (Agapova & Vishwasrao, 2020; Kumar, 2017). In this context, it is important to clarify the impact of sources and channels foreign aid flows on corporate financing in the receiver countries.

We study the effect of foreign aid on corporate debt in 22 African countries and explore the potential channels through which foreign aid flows can affect the leverage of local firms<sup>1</sup>. Specifically, our research question is whether an increase in foreign aid flows leads to an increase in corporate borrowing. Our findings suggest that an increase of total foreign aid leads to the decrease of corporate leverage, but this effect depends on the aid allocation. Foreign aid can decrease corporate debt in some cases. Firstly, the increase in the availability of cheaper financing options than debt can lead to a less favourable business environment for corporations, which may reduce bank credit to private sector.

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<sup>1</sup> Political ties are measured in terms of the number aid obligations that go to a foreign country (See (Ambrocio et al., 2022) ). They indicate that the impact of closer political ties with the US on Yankee bond yield spreads is more pronounced for firms which are domiciled in countries with low levels of income and high sovereign debt. Indeed, as many African countries are classified as low levels of income and high sovereign debt, it is very essential to test how foreign aid affects corporate financing in Africa.

Secondly, foreign aid may increase the recipient country's currency appreciation (see (Addison & Balamoune-Lutz, 2017; Adu & Denkyirah, 2018; Nyoni, 1998; Ravn et al., 2012; White, 1992)), making it more expensive for corporations to service their foreign currency-denominated debts.

While total foreign aid flows affect negatively corporate borrowing, our results show considerable differences in the effects of foreign aid from DAC members and non-DAC members, as well as in the effects of bilateral and multilateral foreign aid. We indicate that a unit increase in aid from OECD-DAC members is associated with a decrease in book leverage of 0.0042 units. While a unit increase in aid from non-DAC members is associated with a decrease in book leverage of 0.3054 units. In this case, the coefficient for aid from non-DAC members is much larger than that for aid from OECD-DAC members, which suggests that aid from non-DAC members has a stronger negative effect on corporate borrowing than DAC aid. We also compare multilateral and bilateral aid. The coefficient for multilateral aid (-0.0671) has a larger absolute value than the coefficient for bilateral aid (-0.0041), indicating that multilateral aid has a stronger negative effect on corporate borrowing than bilateral aid. Indeed, our findings corroborate that aid from different sources could have distinct effects on private sector because of the differing circumstances, priorities, and global activities of DAC and non-DAC donors (Dreher et al., 2011; Findley et al., 2017), as well as the possibility of alternate aid dynamics. Subsequently, the tremendous potential of multilateral assistance via structural modifications may result in policy settings that either directly or indirectly affect corporate borrowing.

We also find that the effect of foreign aid on corporate borrowing may depend on how the aid is allocated to the private sector. Indeed, foreign aid flows can also affect positively corporate borrowing. We find a positive significant effect of aid to private sector development on corporate leverage, and this is stronger for larger firms. When foreign aid is given to the private sector or financial institutions development, it can increase the availability of bank credit to the private sector. Additionally, foreign aid to private sector development may lead to lower interest rates for local businesses, making it more attractive for companies to borrow.

Paying particular attention to firm ownership and internal bribery practices. We examine the intricate effects of foreign aid allocation on corporate leverage. Utilizing various metrics such as book leverage, market leverage, and the debt-to-equity ratio, our study uncovers a consistent negative correlation between foreign aid and corporate leverage in environments with significant government ownership. This finding indicates that government involvement plays a pivotal role in determining how foreign aid influences corporate finance. Furthermore, our analysis reveals divergent interactions between different types of foreign aid and corporate leverage in scenarios involving bribery. We observe that private firms engaged in bribery tend to increase their corporate leverage when country receive foreign aid in general. However, this trend shifts in the context of aid targeted towards private sector development, highlighting variations in the reliance on corrupt practices for financial access.

In addition, we explore an instrumental variable and cross-sectional analysis. Our findings are consistent even after using two-stage least squares (2SLS) in which the aid variables (China aid, France aid, United Kingdom aid and USA aid) are instrumented by an index measuring the voting similarity between donors and recipient countries in the UNGA. Our cross-sectional analysis reveals that the effect of foreign aid flows on corporate debt is weaker during election times, indicating that governments do not financially support private sector during elections. Election seasons tend to reduce the impact of foreign aid on corporate debt, presumably because governments are reallocating funds for campaigns or political unpredictability makes investors and donors wary. Furthermore, we indicate that the effect depends on the chief executive's party orientation and the source of aid. Specifically, we find a stronger negative effect for firms located in countries with lower government effectiveness.

Our study contributes to the existing literature by focusing on different aspects of foreign aid and corporate borrowing. Prior studies have mainly examined the effects of foreign aid on general economic and financial institution development. In contrast, we use accounting and market data at the firm level to investigate the effect of foreign aid on corporate debt financing. Our study makes a significant contribution to the existing literature by accurately examining the political and non-political channels through which foreign aid flows influence capital structure in recipient countries.

Firstly, by focusing on the complex policy mechanisms at play, we provide a detailed comprehension of how foreign aid sources, channels and allocations affect corporate financing in Africa. Secondly, we contribute to the previous research that examine foreign aid and United Nations (UN) voting patterns as indicators of political relationships and their impact on finance and economics (see (Ambrocio et al., 2022) ). In doing so, we advance the speech on foreign aid and its multiple implications for corporate capital structures in African markets, a relatively underexplored area in the literature. Our empirical findings elucidate the role of political ties in determining aid distribution and their subsequent influence on corporate financial decision-making. Thirdly, we outline the complex relationships between foreign aid, corporate ownership structures, and corporate financial strategies in Africa, stressing the stabilizing role of foreign aid in government-owned firms, the contrasting effects of bribery on different aid types, and the varied impact of foreign aid on corporate debt maturity. Fourthly, by examining the relationship between foreign aid and corporate debt financing, we contribute to literature on political economy and corporate finance. Our research not only sheds light on foreign aid flows and corporate debt in Africa, but also provides valuable insights for policymakers and practitioners looking to optimize the allocation and effectiveness of foreign aid.

The rest of the paper is organized as follows: Section 2 presents the literature review and the development of hypotheses. Section 3 describes the data, data sources, and methodology. Section 4 presents the empirical analysis. Section 5 presents endogeneity results. Section 6 presents political ties and ownership; Section 7 focuses on ownership structure and bribes; Section 8 focuses on corporate debt maturity. Section 9 is about Diff in Diff (DID) analysis. Finally, section 10 provides the conclusion.

## **2. LITERATURE REVIEW AND HYPOTHESES**

Donors have paid little attention to local private sector development, while much of the aid has been given enthusiastically to developing economies. Furthermore, developing the local business sector is the primary source of economic development, and foreign aid should be invested in supporting local businesses (Hubbard & Duggan, 2009). Despite active international efforts to improve aid

effectiveness, the impact of foreign aid on the development of a recipient country's local market is highly controversial at best (See, for instance Burnside & Dollar, 2000b; Sachs, 2008) for a positive view of aid's effect; for the contrasting view, refer to (Burnside & Dollar, 2000; Sachs, 2008). In this study, we believed that increased access to finance for a government may improve economic growth opportunities and leads to financial sector development (see (Maruta, 2019; Maruta et al., 2020)). The growth of financial sector would include, but not limited to, the growth of the debt market and the stock market. In this case then, corporate investors get opportunities to engage in varieties of local market activities.

There are three papers closely related to our paper (Agapova & Vishwasrao, 2020; Bach, 2014; Maruta, 2019). Using data for 139 countries, Agapova and Vishwasrao (2020) find that foreign aid increases bank credit to the public sector but does not have any benefits for financial intermediation in the private sector. While Maruta (2019) find that aid targeted to financial sector has a significantly positive effect on financial development. The study by Bach (2014) indicates that financial aid is a crucial factor in determining a firm's and a country's financial inclusion. In countries that receive high aid flows, its effect on financial inclusion seems to be stronger and more significant.

### **Foreign aid flows and corporate debt**

Foreign aid has been a significant source of external financing for many developing countries. However, foreign aid can affect the private sector in various ways, including by influencing the financing choices of firms. Previous studies have found that foreign aid can reduce the need for private borrowing and crowd out private investment (Gupta et al., 2009; Mavrotas, 2002). Foreign aid can also affect the cost of corporate debt, with some studies finding that foreign aid to private sector development can affect domestic bank credit to private sector (Agapova & Vishwasrao, 2020). In addition, foreign aid can create a more competitive business environment, leading to a reduction in the cost of financing options for corporations (Lombaerde & Mavrotas, 2009; Mavrotas et al., 2006). This can make it less necessary for firms to rely on debt to finance their operations, leading to a decrease in corporate debt levels.

Foreign aid may have a negative impact on corporate debt financing by creating a "Dutch disease<sup>2</sup>" effect, which can reduce the availability of bank credit and investor confidence (Alesina & Dollar, 2000; Cerra et al., 2008). On the other hand, foreign aid flows can increase access to finance for firms, while it can reduce the need for private borrowing (Gupta et al., 2009). For instance, Dreher and Fuchs (2015) indicates that Chinese aid may lead to an increase in African countries' creditworthiness, which in turn may increase their ability to access credit from international markets. This suggests that foreign aid can also have a positive impact on corporate debt financing by improving the overall credit environment in a recipient country.

Corporate leverage refers to the degree to which a company has borrowed money to finance its operations. It is an important indicator of a company's financial health, as high levels of debt can increase the risk of default and bankruptcy. Understanding the effect of foreign aid flows on corporate leverage is important for policymakers and investors, as it can help inform decisions related to foreign aid programs and investment strategies. Based on the above literature, we formulate the following hypothesis:

***Hypothesis one:*** *The increase in foreign aid flows reduces corporate leverage.* The decrease in corporate debt levels due to foreign aid flows may be mainly driven by the availability of cheaper financing options than debt and the "Dutch disease" effect.

### **Multilateral versus bilateral aid**

Bilateral and multilateral aid are two channels of foreign aid that support developing countries. Bilateral aid comes directly from one donor country to a recipient country, often influenced by the donor's political, economic, and strategic interests. Multilateral aid is pooled from multiple donor

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<sup>2</sup> "Dutch disease" effect refers to the phenomenon where an increase in a country's income from external sources, such as foreign aid, leads to an appreciation of its currency. This appreciation can make the country's exports less competitive and lead to an increase in the price of imports, which can reduce the availability of bank credit and investor confidence, making it more difficult for corporations to obtain financing.



countries and distributed through international organizations, making it more neutral and less influenced by individual country interests<sup>3</sup>. Previous studies (Abduvaliev & Bustillo, 2020; Rufe et al., 2020) find that bilateral aid can contribute to economic growth in specific countries, such as Tajikistan and Ethiopia, respectively. Edo et al., (2022) finds that bilateral aid had a more significant positive effect on economic growth than multilateral aid. Wambaka (2022) finds that only multilateral aid has a positive and significant effect on economic growth in both middle and low-income countries, and that the impact is contingent on the existence of good quality institutions.

However, Amoa (2020) finds no direct effects of bilateral and multilateral aid on economic growth in Central Africa, while observing a positive effect when interacting with foreign direct investment (FDI). Ahmad et al. (2022) find a negative relationship between both multilateral and bilateral aid and economic growth, with bilateral aid having the strongest effect.

The effects of multilateral and bilateral aid on corporate debt financing remain understudied, with most research focusing on their impact on economic growth and development. The existing literature highlights the importance of context, region, and macroeconomic policies, as well as the role of factors such as FDI and institutional quality in shaping the effectiveness of foreign aid. Building on the existing literature, we propose the following hypothesis:

**Hypothesis two:** *The effect of foreign aid flow on corporate debt financing is contingent upon the type of aid channels, specifically bilateral or multilateral channels.*

### **OECD-Development Assistance Committee (DAC) Aid versus non-DAC member Aid**

In this section, we provide the literature review which provides an overview of the differences between OECD-Development Assistance Committee (DAC) member aid and non-DAC member aid regarding countries' institutional quality. Moreover, we decompose foreign aid based on the donor affiliation or characteristic. We argue that based on this categorization, the donor affiliation will

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<sup>3</sup> Examples of bilateral aid agencies include USAID and FCDO, while multilateral aid organizations include the World Bank and the United Nations Development Programme. The main differences between these channels of aid are their distribution methods, and the influence of donor interests.

determine the type of foreign aid provided, the amount and the terms and conditions attached. As such, the type of donor will differently affect the management of the aid in the recipient country, and this will affect corporate financing decisions.

Various sources are considered to understand the critical differences between these channels of aid and the challenges and opportunities they present. The emergence of non-DAC donors, including countries such as China and India, has raised concerns among established donors regarding the potential negative consequences of their increasing aid-giving, such as rogue aid, accusations of free-riding, and increased fragmentation of the donor landscape (Paulo & Reisen, 2010; Singh, 2021).

The DAC currently has 30 countries members plus European Union. Candidate countries are assessed in terms of the following criteria: the existence of appropriate strategies, policies and institutional frameworks that ensure capacity to deliver a development co-operation programme; an accepted measure of effort; and the existence of a system of performance monitoring and evaluation<sup>4</sup>. Non-DAC donors can be broadly classified into four groups: (i) OECD countries that are not members of DAC, (ii) new European Union countries that are not members of the OECD, (iii) Middle East and Organization of the Petroleum Exporting Countries, particularly Saudi Arabia, and (iv) non-OECD donors that do not belong to any of the previous groups (Walz & Ramachandran, 2011). The key differences between DAC and non-DAC member aid include sources, guidelines, transparency, and objectives, which result in variations in the channels and terms of assistance provided (In'airat, 2014; Kim, 2019).

Institutional quality plays a significant role in the efficient usage of foreign aid, with strong institutions in the public sector potentially leading to increased advantages for the private sector (Qayyum et al., 2014). Moreover, foreign aid can stimulate institutional development and strengthening, with many donors requiring recipient nations to implement sound policies to improve institutional performance (J. Kim, 2011, 2019). The growing influence of non-DAC donors may present challenges,

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<sup>4</sup> [Development Assistance Committee \(DAC\) - OECD](#)

opportunities, or questions for traditional DAC donors and international aid institutions (Burall et al., 2006; Harmer & Cotterrell, 2005; Severino & Ray, 2009). From the above literature, we develop our third hypotheses:

***Hypothesis three:** The foreign aid provided by OECD-DAC members and non-DAC members may affect corporate debt financing differently in recipient countries due to variations in government effectiveness.*

### **Foreign Aid, Ownership Structures, Bribes and Corporate Leverage**

Studies reveals a nuanced understanding of the impacts of government and private ownership structures on corporate leverage, albeit without a direct tie to foreign aid. (Abdallah & Ismail, 2017) revealed that the effect of government ownership on a firm's leverage is contingent upon whether the government is the predominant shareholder and the nature of this ownership. The impact of government ownership on leverage is dependent on whether the government is the largest shareholder in a firm and whether the government ownership is through a parent state-owned enterprise. Huang et al. (2018) show that the largest non-government shareholder positively influences leverage. Moreover, it was discerned that capital structure decisions are subject to a triad of influences: firm-specific, industry-specific, and institutional factors. Among the institutional factors, government ownership emerged as a significant determinant, echoing the sentiment that institutional variables affecting financing decisions in developed nations are also influential in emerging economies. Another dimension of government ownership was explored through its impact on corporate debt cost, where it was found to generally associate with a higher debt cost, albeit with a lower cost during financial crises (Borisova et al., 2015).

While the literature didn't provide a direct linkage between foreign aid and ownership structures, the broader economic implications of foreign aid were discussed (Kaya & Kaya, 2020; Maruta et al., 2020). It's known that foreign aid can enlarge government size while negatively impacting economic growth and investment, thereby hinting at a potential, albeit indirect, interplay with ownership structures and corporate leverage (Kaya & Kaya, 2020; Maruta et al., 2020). From the above literature we underline the complex dynamics of government and private ownership structures on corporate

leverage. Although the direct interaction with foreign aid remains less explored, the overarching economic repercussions of foreign aid may connect with these ownership and leverage dynamics, warranting a deeper exploration for a complete understanding. From the above literature, we develop our fourth hypotheses:

***Hypothesis four A:*** *Where government ownership is high, the inflow of foreign aid correlates with an evident reduction in corporate leverage.*

The literature pertaining to foreign aid, private ownership, bribes, and corporate leverage unveils distinct dimensions of corporate governance, and financial management across different ownership frameworks, even though with limited insights on the intertwining with foreign aid. A segment of the literature explores foreign ownership and its association with bribery. One study elucidates that the incidence of bribery is not notably impacted by foreign ownership. However, a certain positive correlation was observed in the case of joint ventures (Webster & Piesse, 2018). Furthermore, the tendency of multinational companies' subsidiaries to engage in bribery was found to be more pronounced in emerging economies as compared to developed ones (Yi et al., 2018).

In addition, a comprehensive literature review on corruption in international business sheds light on a range of factors that contribute to bribe practices. This includes country-centric factors, economic determinants, and legislative frameworks, thus indicating a multifaceted and complex network of variables that could potentially have repercussions on corporate leverage, especially across different ownership structures (Bahoo et al., 2020). However, the literature doesn't furnish a direct exploration of the interrelationship between private ownership, corporate leverage, and bribery, nor does it clarify how foreign aid might interface with these dimensions. This suggests a conspicuous gap in the literature, marking a promising avenue for prospective fifth hypothesis.

***Hypothesis Four B:*** *Private companies are not obliged to make any unofficial payments to government officials to receive financial support from aid programs.*

## **Government Financing and Corporate Debt Maturity**

Navigating the corporate debt maturity landscape requires a well understanding of the trade-offs and implications associated with different financing choices. Short-term debt, while addressing immediate liquidity needs and mitigating interest rate risk, necessitates frequent refinancing, potentially subjecting firms to volatile financing conditions (Barnea et al., 1980; C.-S. Kim et al., 1998). Long-term debt, conversely, offers funding stability but at the potential cost of higher interest rates and a substantial long-term debt burden. Building on this foundation, (Barclay & Smith, 1995; Cortina et al., 2018; Guedes & Opler, 1996) delve deeper into the determinants of corporate debt maturity, emphasizing the significant role played by market conditions and firm-specific factors. Their research underscores the complexity of these decisions and the necessity for firms to strategically balance their debt portfolios.

Meanwhile, Brick and Ravid (1985) explore the intricate relationship between debt maturity and firm value, offering insights into how a firm's financial structure can directly influence its overall financial health and stability. More recent contributions to the literature (Demirci et al., 2019; Lugo & Piccillo, 2019). Together, these authors provide a rich tapestry of knowledge, contributing to a nuanced and comprehensive understanding of how government financing influence corporate debt maturity decisions, and this is our motivation to develop the following hypothesis:

***Hypothesis Five:** The effect of foreign aid flows is stronger for long-term leverage, and it depends on the types and sources of aid.*

### **Foreign aid and Political Ties**

When national governments or leaders have liberty and discretionary power to decide where to channel the available aid, they will likely be influenced by their political inclinations. They will also extend the aids towards politically aligned recipient nations; hence, large flows will be seen in those nations that are perceived to be politically friendly. In addition, the donors will discretionarily choose to channel the aid to these nations regardless of the needs of the recipient nations. Based on these observations, foreign aid is used as a political tool, and can be used to influencing elections in sovereign states (Anaxagorou et al., 2020; Asongu & Nwachukwu, 2016; Dietrich et al., 2020; Dietrich & Wright,

2015; Dupuy et al., 2016; Neumayer, 2002). Political leaders that are seen to be aligned to the donors' policies are more likely to be favoured, and when elected will likely receive significant donor support. We are arguing that donors have significant say in domestic elections, and strategically choose to support candidates perceived to align to the donor's political inclination.

In addition, different developed nations have over the history influenced voting at international assemblies as well as at domestic level. These nations that extend aid influence the voting patterns during key moments in, for example, the UN Assembly vote. Hence, foreign aid has been applied as an electoral tool, to influence decisions in line to the donors' wishes. Evidence that aid is extended based on the co-partisan of the incumbent political leaders is provided by authors like (Roberts & Dionne, 2013). Similarly, (Adhikari, 2019) shows that electorally induced aid allocation is high in recent times due to political realignment of nations. Aid-dependent nations usually face dilemma during electioneering period, with most donors showing preferences, directly or indirectly, of candidates. Particularly in countries that have had political instability, the donor's presence and foreign aid significantly influence politics in these nations. For instance, donor nations tend to support candidates they feel will create more democratic space, observe the rule of law and who would continue supporting their foreign trade interests.

We therefore argued that foreign aid increases during electioneering year, and particularly when a 'favored' candidate is vying for an electoral seat. More specifically, donor inflows are huge when a favored candidate wins the election. However, despite the donor in flow, the political uncertainty created during electioneering year dissuade the corporate firms from engaging in borrowing. This is consistent with the arguments and findings by some authors (De Silva et al., 2022; Lee et al., 2020) who indicated that lending firms tend to ration lending during political uncertainty periods like election year. Concurrently, firms shy off from committing to take borrowings during such periods. Hence, we formulate the following hypothesis:

***Hypothesis Six:*** *There is a stronger negative effect of foreign aid flows on corporate leverage during electioneering period of the recipient nations.*

### 3. DATA SOURCES AND METHODOLOGY

This section describes our main variables of interest, data sources, and methods. Then, we focus separately on country-level and firm-level variables and explain our empirical methodology.

#### Government-level data

The most important independent variable in this study is the country's total aid to GDP ratio, measured relative to the country's gross domestic product (GDP) and referred to as total aid to GDP. The variable total aid to GDP is the sum of aid from OECD members of the Development Assistance Committee (DAC) and non-DAC members. We obtain data on each country's foreign aid from the Organization for Economic Co-operation and Development (OECD), available for 1960-2020<sup>56</sup>. Aid flows data from China collected from aiddata dataset<sup>7</sup>, which is only available until 2017<sup>8</sup>, while we collect Chinese loan from Chinese Loans to Africa (CLA) Database<sup>9</sup>.

Besides foreign aid, other country-specific variables are sourced from either the IMF, the World Bank, or the World Economic Outlook (WEO). These country-specific variables include inflation, the exchange rate, the GDP per capita and government effectiveness. We break down total foreign aid into two main variables: Foreign aid from OECD-DAC members<sup>10</sup> and non-DAC members<sup>11</sup>. This allows us to examine whether the source and terms of foreign aid affect corporate debt financing.

We further collect United Nations General Assembly voting data from the Erik Voeten dataset<sup>12</sup>. Finally, we create a continuous variable based on the voting preferences of African countries

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<sup>5</sup> GeoBook: Geographical flows to developing countries (oecd.org)

<sup>6</sup> Creditor Reporting System (CRS) (oecd.org)

<sup>7</sup> Datasets (aiddata.org)

<sup>8</sup> AidData. 2021. Global Chinese Development Finance Dataset, Version 2.0. Retrieved from <https://www.aiddata.org/data/aiddatas-global-chinese-development-finance-dataset-version-2-0>

<sup>9</sup> Chinese Loans to Africa Database – Data Download | Global Development Policy Center (bu.edu)

<sup>10</sup> The 30 countries of DAC members are: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, The Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States, and European Union Institutions

<sup>11</sup> Non-DAC aid donors are such as Kuwait, The United Arab Emirates (UAE), Saudi Arabia and BRICS- Brazil, Russia, India, China and South Africa

<sup>12</sup> Erik Voeten Dataverse (harvard.edu)

concerning the permanent veto members<sup>13</sup>. For example, the variable `vote-CHN-Africa` is a continuous variable indicating whether African countries vote in the same way as China. `Vote-USA-Africa` is a continuous variable indicating whether African countries vote in the same way as the US vote. Furthermore, the variable `vote-GBR-Africa` is a continuous variable indicating whether African countries vote similarly to United Kingdom. To generate the above continuous variables, first, we create a dummy variable equal to one if the aid receivers vote the same way as the donors and zero otherwise. Secondly, we create the mean based on the years of voting<sup>14</sup>.

### **Firm-level data and our key indicators of corporate leverage**

We have done an extensive study on African non-financial firms from the year 2000 to 2020, using a diverse range of sources for both accounting and market-related data. Our principal data sources include renowned databases such as Eikon, Factset, and Capital IQ, where 60% were missing values. To enhance the richness of our dataset, we have additionally undertaken manual data collection from the annual reports of the companies. This meticulous process is vital, as it contributes 60% of our corporate debt data. Furthermore, cross-verifying data across various sources enables us to bolster the reliability of our findings. One of the challenges we encounter is the disparate currencies in which financial information is reported by the companies. To overcome this obstacle, we convert all the financial data to USD, using the nominal annual exchange rate based on monthly averages as defined by the World Bank. This approach ensures uniformity and comparability across our dataset.

Our study incorporates a sample of 1,639 non-financial firms across 22 African countries, selected for their presence on stock exchanges. We intentionally exclude certain countries such as Angola, Benin, Burkina Faso, Cap Verde, Niger, and Togo, as they primarily only list financial firms. Additionally, despite indications of stock markets in Algeria, Libya, and Lesotho, we are unable to retrieve annual reports or financial market information for firms in these regions, leading to their

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<sup>13</sup> The United Nations Security Council comprises five permanent members. These countries have the power to veto any substantive resolution, effectively blocking a decision even if it has majority support. The five permanent members are the United States, Russia, China, the United Kingdom and France (Voting System | United Nations Security Council).

<sup>14</sup> See caption of Table 8



exclusion. Further refinement of our sample is carried out by dropping observation with negative equity, absent total assets data, and negative net property plant and equipment values. We have also chosen to omit firms from public, and utility sectors. Succeeding these stringent selection criteria, our final sample consists of 1,639 firms from 22 African countries, with South Africa contributing the largest share, approximately one-third, of the firms in our study (refer to Table 16: Data Distribution).

Our analysis focuses on two main measures of corporate leverage: book and market leverages and debt to equity, which are central to our dependent variable. We further divide book leverage into short- and long-term leverage. As well, we control for various firm-level characteristics including tangibility, Return on Assets (ROA), and the market-to-book ratio. The data gathered provides unique insights into the capital structure of African non-financial firms, controlling in a robust and comprehensive sample for our analysis, derived from a mixture of diverse datasets.

### **Empirical methodology**

We construct an unbalanced firm-year panel with the 1,639 firms in our sample. Such a panel allows us to control the country and time-invariant variables. For example, our countries in the sample differ in terms of their legal origin, financial institutions development, and political regimes or orientation. These country-specific variables may affect their attitudes regarding borrowing and how the lenders treat them. Our main analysis builds on the following empirical set up:

$$Corporate\ Leverage_{i,c,t} = \beta \frac{Foreign\ aid_{c,t}}{GDP_{c,t}} + \gamma Firm\ control\ variables_{i,c,t} + \theta Country\ control\ variables_{c,t} + \sum_t Year + \sum_j Industry + \sum_c Country + u_{it} \quad (Equation\ 1: OLS)$$

To avoid multicollinearity of country fixed effect, we run our regression without constant in all regressions.

We also run a slightly modified version of equation 1 that is described as follows:

$$Corporate\ Leverage_{i,c,t} = \beta_1 foreign\ aid_{ct} * (large\ firms_{ict}) + \beta_2 foreign\ aid_{ct} * (small\ firms_{ict}) + \gamma_1 X_{ict} * (large\ firms_{ict}) + \gamma_2 X_{ict} * (small\ firms_{ict}) + \theta_1 Y_{ct} *$$

$$(large\ firms_{ict}) + \theta_2 Y_{ct} * (small\ firms_{ijt}) + \mu_1 (large\ firms_{ict}) + \sum_t Year + \sum_j Industry + \sum_c Country + u_{it} \quad (\text{Equation 2})$$

With the model in equation 2, our aim is to analyze the effects of foreign aid based on the interaction with firm size. We divide our main sample into subsamples based on a firm size. The variables in equation (2) are described as follows. *Foreign aid<sub>jt</sub>* is foreign aid of *j*<sup>th</sup> country at year *t*. *small firms<sub>ijt</sub>* is a dummy variable equals to one if the *i*<sup>th</sup> firm at year *t* is in the smaller firms' group, otherwise 0, and *large firms<sub>ijt</sub>* is a dummy variable equals to one if the *i*<sup>th</sup> firm at year *t* is in the larger firms' group, otherwise 0.  $\sum_t Year$  is year fixed effect.  $\sum_j Industry$  is industry fixed effect.  $\sum_c Country$  country fixed effect. These equations are separately estimated for book leverage and market leverage ratios.

#### 4. EMPIRICAL ANALYSIS

In this part of empirical analysis, we focus on the analysis which delve into the complex relationship between foreign aid and corporate debt financing. We first examine the connection between foreign aid flows and corporate leverage, shedding light on how these financial elements interact with one another. Next, we investigate the impact of varying sources and types of foreign aid on corporate leverage. This analysis helps us better understand how different aid packages influence corporate debt differently. Following this, we discuss the effects of foreign aid specifically directed towards the private sector development. Then, we explain the relationship between foreign aid, corporate ownership, bribe, and leverage. We look at the effect of different sources and channels of foreign aid on corporate debt maturity. Lastly, we explore the interaction between foreign aid and firm size, focusing on total assets as a proxy for size.

##### Foreign aid Flows and Corporate Debt Financing

In this section, our interest is the relationship between foreign aid and corporate debt. We seek to explore the question of why the increase in foreign aid flows decreases corporate debt. Our findings reported in Table 4 however shows a negative and significant effect ( $\beta = -0.0043$ ,  $p < 0.05$ ) for total

foreign aid against book leverage and ( $\beta = -0.0038, p < 0.05$ ) against market leverage and ( $\beta = -0.0414, p < 0.05$ ) against debt to capital. One possible explanation for this negative relationship is that foreign aid can increase the availability of cheaper financing options than debt. However, foreign aid inflows can increase the amount of investment capital in a recipient country, leading to a reduction in the cost of financing options for corporations, including loans, equity, and bonds. As a result, corporations may be less reliant on debt to finance their operations, leading to a decrease in corporate debt levels.

In addition, foreign aid may also lead to a less favourable business environment for corporations, dampening investor confidence and reducing bank credit availability. According to Alesina and Dollar (2000), foreign aid can create a "Dutch disease" effect, whereby the influx of aid leads to an appreciation of the recipient country's currency. This appreciation can make exports less competitive, leading to an increase in the price of imports. This, in turn, can reduce the availability of bank credit and investor confidence, making it more difficult for corporations to obtain financing. As foreign aid may increase recipient countries' currency appreciation. This can make it more expensive for corporations in African countries to service their foreign currency-denominated debts as the value of the local currency increases relative to the foreign currency. Corporations may be less willing to take on foreign currency-denominated debt, leading to a decrease in corporate debt levels. This argument is supported by (Cerra et al., 2008), who find that foreign aid inflows reduce the issuance of foreign currency-denominated bonds by recipient countries. Thus, increasing foreign aid flows can decrease corporate debt levels through various channels. These include increasing the availability of cheaper financing options than debt, creating a less favourable business environment, and increasing recipient countries' currency appreciation.

*(Insert Table 4 here)*

### **Sources and Types of Foreign Aid and Corporate Leverage**

Foreign aid can take many different forms, and it is important to understand the various sources and types of aid available. Two primary sources of aid are aid from OECD-DAC members and aid from non-DAC members. OECD-DAC aid is provided by 30 countries that are members of the OECD's

Development Assistance Committee (DAC). This type of aid is often closely tracked and comes with conditions that require the recipient country to make certain economical and governance reforms. On the other hand, non-DAC aid is provided by countries not members of the OECD's Development Assistance Committee. Another way to categorize foreign aid is by its type or source, either bilateral or multilateral. Bilateral aid is provided directly from one country to another. It is often designed to promote the donor country's foreign policy interests. Multilateral aid, on the other hand, is provided through organizations such as the United Nations or World Bank. In this case, the donor country provides assistance to the international organization, which then distributes the aid to various recipient countries. While multilateral aid may also come with conditions, these are usually set by the international organization rather than the donor country.

Our findings reported in Table 5 indicate a negative effect of both sources and types of aid on corporate leverage. The coefficient for bilateral aid is -0.0072 (p value=0.432) for book leverage, -0.0045 (p value=0.672) for market leverage and -0.1012 (p value=0.230) for debt to capital. While the coefficient for multilateral aid is -0.0658 (p value=0.042) for book leverage, -0.0766 (p value=0.060) for market leverage and -0.7191 (p value=0.260) for debt to capital. To determine if one is larger or smaller, we compare the absolute values of the coefficients. In this case, we can see that the coefficients for multilateral aid are larger than the coefficients for bilateral aid, indicating that multilateral aid has a stronger effect on corporate leverage than bilateral aid.

We also test the difference effect of aid from OECD-DAC members and aid from non-DAC members. The coefficient for aid from OECD-DAC members is -0.0042 (p value=0.000) for book leverage, -0.0037 (p value=0.006) for market leverage and -0.0404 (p value=0.000) for debt-to-equity ratio. On the other hand, the coefficient for aid from non-DAC members is -0.3078 (p value=0.000) for book leverage, -0.2307 (p value=0.006) for market leverage and -2.2816 (p value =0.095) for debt to capital ratio. We can see that the coefficient for non-DAC members aid is much larger in magnitude than the coefficient for DAC members aid for all measures of corporate debt, suggesting that non-DAC members aid has a stronger effect on the corporate leverage than DAC members` aid. In both cases,

the p-values are less than the significance level of 0.05. Thus, there is evidence to suggest that the non-DAC members and multilateral aid have stronger negative effect on corporate debt financing.

*(Insert Table 5 here)*

### **Aid to Private Sector Development and Corporate Leverage**

This section focuses on the effect of aid to the private sector development on corporate leverage. We aim to understand how the effect of foreign aid flows on corporate borrowing may depend on the aid allocation. Our findings suggest that aid to the private sector development has a positive and significant effect on corporate leverage. Our analysis shows that the coefficient of 0.1633 (p value =0.002) for book leverage, 0.2139 (p value=0.016) for market leverage and 1.8345 (p value=0.007) for debt to equity. We find that aid to the private sector development have a strong positive effect on corporate leverage. One possible explanation for this relationship is that aid to private sector development may increase credit availability to the private firms. Financial institutions are key intermediaries in the economy, and aid to support their development may help improve access to credit and other financial services. This, in turn, may enable firms to increase their borrowing and leverage levels. Another explanation is that aid to private sector development may lead to lower business interest rates. Foreign aid to private sector development may increase corporate borrowing through two main channels: increased availability of long-term credit and lower interest rates.

Firstly, when foreign aid is given to private sector, it increases the availability of bank credit to the private sector. This is because, aid to private sector development may be given in form of concessional loan. These are funds provided with the expectation of repayment, usually with lower interest rate and the repayment periods are longer than what the recipient might be able to obtain from commercial lenders. As a result, firms may be more likely to take on excessive amounts of debt, knowing that the aid will bail them out in time financial distress. This can lead to higher levels of corporate leverage.

Secondly, foreign aid to private sector development may also lead to lower business interest rates. When financial institutions receive aid in form of concessional loan, they may be able to offer

loans at lower interest rates to firms. This can make it more attractive for companies to borrow and may incentivize them to take on more debt. Lower interest rates can also make it easier for firms to service their debt, increasing their willingness to borrow. It is important to note that while foreign aid can increase corporate debt through these channels, excessive debt levels can also pose risks to firms and the broader economy. High debt levels can increase firms' vulnerability to economic shocks and may result in financial distress or even bankruptcy. Therefore, recipient countries must carefully monitor the use of foreign aid and ensure that it is used to support sustainable firms' growth rather than fuelling excessive borrowing and leverage.

*(Insert Table 6 and 7 here)*

### **Aid to Private Sector Development, Firm Size and Corporate Leverage**

In this section, we test the impact of firm size on the effect of aid to private sector development on corporate leverage. Specifically, we aim to examine whether the effect of foreign aid on corporate debt financing decision depending on the firm's size. To measure firm size, we use the total assets of the firms. According to Demirci et al. (2019) larger firms are in a better position to adjust their capital structure in response to shifts in demand. For example, larger firms are more flexible in their choices between debt and equity financing, since they are potentially less subject to asymmetric information problems. In contrast, high equity issuance costs or borrowing costs might prevent small firms from changing their method of financing. Moreover, they may face a lower cost of switching between debt and equity financing.

Our regression results show that the effect of aid to private sector development on corporate leverage significantly depending on the firm's size. For larger firms, the coefficient is 0.3651 (p value=0.000) for book leverage, 0.4583 (p value=0.000) for market leverage, 0.3417 (p value=0.000) for long-term leverage and 0.0242 (p value =0.704) for short-term leverage. We find a strong positive relationship between aid to private sector development and corporate debt financing. In contrast, the regression results for smaller firms show a non-significant relationship between aid to private sector development and corporate leverage. These results suggest that the impact of aid to private sector

development on corporate borrowing depends on the firm's size. Larger firms appear to benefit significantly from aid to private sector development, as it provides them with greater access to bank credit and financial services, which can help them expand and grow. On the other hand, smaller firms may have other financing options created by foreign aid in accessing credit, negatively impacting their leverage, or reducing their bank credit.

In addition, we investigate how the size of firms influences the relationship between aid to private sector development and corporate leverage, both in the long and short term. Our analysis shows a significant positive relationship between aid to private sector development and long-term leverage for larger firms. We further find significant negative relationship between aid to private sector development and short-term leverage for small firms, with a coefficient of  $-0.787$  (p-value of 0.044). We indicate that the relationship between aid to private sector development and corporate leverage is not uniform across firms of different sizes and time horizons. Larger firms seem to benefit from aid to private sector development in terms of increased long-term leverage, while small firms may experience a significant decrease in short-term leverage. This may be because larger firms have better access to credit and financial services and can take advantage of the opportunities created by aid to private sector development. Or foreign aid may create more financing options for smaller firms, and they may reduce their bank credit.

## **5. ENDOGENEITY CONCERN: TWO-STAGE LEAST SQUARE**

Endogeneity issues are essential to consider in the context of the effects of foreign aid flows on corporate borrowing. The relationship between these two variables is likely to be complex and potentially bidirectional. For example, foreign aid flows may affect corporate debt by increasing capital availability or reducing borrowing costs. However, it is also possible that the amount of foreign aid a country receives could be influenced by factors correlated with corporate borrowings, such as economic development or political stability. If endogeneity is not properly accounted for, the estimated effects of foreign aid on corporate borrowing should be biased and lead to incorrect conclusions. Failing to account for endogeneity could result in overestimating or underestimating the actual causal effect of

foreign aid on corporate borrowing. Therefore, using instrumental variables to control for endogeneity and obtain more reliable estimates of the relationship between foreign aid and corporate borrowing is important.

Using voting preferences or similarities of donors' and recipients' countries during the United Nations General Assembly (UNGA) vote is helpful to test endogeneity on the effect of foreign aid flows because it helps address potential reverse causality issues. Reverse causality is a common problem when studying the relationship between foreign aid flows and corporate debt financing. For example, it is possible that countries that receive more aid also have stronger corporate sectors that are more attractive to lenders. In this case, it would not be the aid that causes the increase in corporate borrowing but rather the other way around. To address this issue, we use an instrumental variable (IV) that is not directly related to the outcome of interest but are correlated with the endogenous variable (i.e., foreign aid flows) and is unrelated to the error term.

Voting preferences or similarities of donors' and recipients' countries during the UNGA vote are exogenous to the corporate sector. The intuition behind using voting preferences or similarities of donors' and recipients' countries during the UNGA as an instrumental variable is that countries with similar voting preferences or align more frequently during the UNGA vote are more likely to have stronger political ties and closer relationships. These ties and relationships could influence the foreign aid flows between the two countries. However, they are not directly related to the corporate sector or the borrowing decisions of firms, making them an excellent instrumental variable. The instrument of foreign aid flows is based on the argument that political affinities are essential drivers of donors' allocation of aid among the recipient countries, which becomes an essential means of donors' foreign policy (Alesina & Dollar, 2000). Thus, using voting preferences or similarities of donors' and recipients' countries during the UNGA as an instrumental variable helps to address reverse causality and endogeneity issues in the relationship between foreign aid flows and corporate borrowing.



### **First stage: UNGA Vote and Foreign Aid in Africa**

In this section, we investigate whether there is a significant effect of the voting preferences or similarities of donors' and recipients' countries during the United Nations General Assembly (UNGA) vote on the amount of aid delivered from the donor to the recipient, and vice versa. To do so, we collected UNGA voting data from Erik Voeten's dataset and created continuous variables based on the voting patterns of African countries with respect to the UN permanent veto members as they are the main donors to 22 African countries in our sample. Firstly, we created a dummy variable that equals one if the countries vote in the same way and zero otherwise. Secondly, we calculated the mean based on the years of voting. In Table 8, panel A, the variable "vote-CHN-Africa" is a continuous variable that indicates the voting preferences of African countries with China, "vote-USA-Africa" indicates the voting preferences of African countries with the USA, "Vote-FRA-Africa" indicates the voting preferences of African countries with France, and "vote-GBR-Africa" indicates the voting preferences of African countries with the UK.

We test the overidentification test of the instruments in our regression models. The Sargan statistic is a test of whether the set of instruments used in the regression model are valid. It tests the null hypothesis that the instruments are valid instruments, which means that they are uncorrelated with the error term in the regression equation. A small Sargan statistic indicates a good fit between the instruments and the model, while a large Sargan statistic suggests that the instruments may not be valid. In our case, the Sargan statistic is 2.22 for vote\_USA\_Africa, 1.78 for vote\_CHN\_Africa, 0.77 for vote\_GBR\_Africa, 2.189 for vote\_FRA\_Africa. The next line reports the Chi-squared test statistic with 1 degree of freedom and a corresponding p-value of 0.136 , 0.1825, 0.38, 0.139. The p-values of 0.136 , 0.1825, 0.38, 0.139 indicates that there is not enough evidence to reject the null hypothesis that the instruments are not valid, as the p-value is greater than the conventional significance level of 0.05. Therefore, our instrument is valid in our regression model and can be used to estimate the coefficients of the endogenous variables.

*(Insert Table 8 panel A here)*

In our submission, we also argue that voting pattern at United Nations General Assemblies (UNGA) reflects both strategic and political alignment of nations<sup>15</sup>. Dreher et al. (2022) reveal that temporary united nations security council members receive more multilateral financing only when they support the positions of the United States, suggesting that political factors may influence aid allocation.

We predict that donor nations will attempt to influence voting at these assemblies, observe the voting pattern of developing nations and channel more funds to those nations perceived to follow their voting choices<sup>16</sup>. The results of our empirical analysis are reported in Table 8. As per our findings, USA aid positively and significantly ( $\beta_1 = 0.2325, p < 0.05$ ) flow to nations that vote in similar manner as USA. Similar results are found for United Kingdom and France aid flow to Africa, which significantly increases ( $\beta_2 = 0.0602, p < 0.05$ ) towards nations voting along with UK and which significantly increases ( $\beta_2 = 0.0687, p < 0.05$ ) towards nations voting along with France. However, for China aid, the sign is positive statistically insignificant, but smallest ( $\beta_3 = 0.0118, p < 0.05$ ) which imply that all four countries have much preference in extending aid in as much as voting at UNGA is concerned.

### **Second Stage: UNGA vote, Foreign Aid and Corporate Leverage**

Two-Stage Least Squares (2SLS) is a statistical method commonly used in econometrics to estimate causal relationships between variables when the explanatory variable of interest is endogenous. This means that it is correlated with the error term in the regression equation, leading to biased estimates and a breakdown in the assumption of exogeneity. In studying the effect of foreign aid flows on corporate leverage using unbalanced panel data, endogeneity may be a common problem that arises due to the potential reverse causality between foreign aid flows and corporate leverage. To address endogeneity, Instrumental Variable (IV) is used in 2SLS. The advantages of using 2SLS with IV in studying our unbalanced panel data include the ability to address endogeneity, which is particularly

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<sup>15</sup> This is consistence with other literature that show how countries political interests affect foreign aid flows (See (Barro & Lee, 2005; Faye & Niehaus, 2012; Malik & Stone, 2018; Thacker, 1999)). There is also a large, related literature specifically linking voting at the United Nations and foreign aid (See (Alesina & Dollar, 2000; Boone, 1996; Carter & Stone, 2015; Dreher et al., 2009a, 2009b, 2015))

<sup>16</sup> See the model in caption of Table 8

relevant in studying foreign aid flows and corporate leverage. Unbalanced panel data can lead to unobserved heterogeneity, which can bias the results. Using 2SLS with IV, we account for this heterogeneity and provide more accurate estimates of the effect of foreign aid flows on corporate leverage.

*(Insert Table 8 panel B here)*

The results of our study show that using instrumental variables (IV) to instrument foreign aid flows by donors (China, USA, United Kingdom, and France) and recipients (22 African countries of our sample) voting preferences or similarities during UNGA has a negative effect on book leverage. The coefficients for aid given by China, the UK, and the USA are statistically significant and negative, indicating that an increase in foreign aid flows is associated with a decrease in book leverage. The negative effect of foreign aid flows on book leverage suggests that foreign aid may help reduce firms' borrowing needs. One potential explanation is that foreign aid can alleviate financial constraints by providing resources that firms can use to invest in their operations, reducing their need to borrow. We corroborate that foreign aid flows significantly affect firms' debt financing decisions by using UNGA vote similarities as an instrumental variable effectively addresses endogeneity issues in the relationship between foreign aid flows and corporate borrowing.

## **6. POLITICAL TIES' EFFECTS**

In this section, we investigate the cross-country variation in terms of political ties and their influences on the effect of foreign aid flows on corporate debt financing. We capture political ties across countries using three proxies: Chief executive party orientation, election, and government effectiveness. These three proxies capture essential political differences across African countries that can affect the relationship between foreign aid flows and corporate leverage. Using these proxies allows for a more nuanced analysis of the effect of foreign aid flows on corporate leverage in Africa in many ways.

Firstly, the political orientation of a country's leader can significantly impact foreign aid policies and market-friendly reforms. Countries with leaders who prioritize pro-market policies and reforms are more likely to have a conducive business environment. This may affect corporate leverage.

Therefore, the first proxy, chief executive party orientation, captures the degree of market orientation of a country's leader. Secondly, elections are critical events that can affect the direction of foreign aid policy and the overall stability of a country. Therefore, the second proxy is election. Lastly, the effectiveness of government may have a significant impact on foreign aid outcomes. A well-governed country is likely to have a conducive business environment, low bribe, and better access to finance.

### **The Financial Effect of Foreign Aid in Times of Election**

We investigate the effect of foreign aid during the electioneering period of the recipient country. Election year is a dummy variable that takes the value of 1 if there was a legislative or executive election in the year and 0 otherwise. We collect election data from DPI2020 Database of Political Institutions.<sup>17</sup> We argued that foreign aid tends to increase during the electioneering period of the recipient nation. The donor community is keen to influence domestic politics of the recipient nations since the community is abreast to the fact that political leaders have significant influence on the international trade affairs(Furuoka, 2017; Hook, 1998; Jayaraman & Kanbur, 2003). We therefore set to investigate whether during elections the foreign aid inflows increases affects the corporate leverage.

*(Insert Table 9 here)*

The interaction of foreign aid with the elections is investigated, total aid shows its negative effect on for long term leverage, but the effect is weaker in case of short-term leverage. Similarly, the interactions between DAC aid and elections show the same results. However, for non-DAC aid, the interaction with elections shows negative and insignificant relationship for both long term and short-term leverage. Further, we also observed that during election periods, local firms engage less in borrowing as shown by negative signs for all cases we investigate. Foreign aid does not help domestic firms to improve their activeness in the lending market during the elections period. In fact, the presence of donor aid dissuades the private firms more from engaging in borrowing during elections and political uncertainty periods.

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<sup>17</sup> The Database of Political Institutions 2020 (DPI2020) (iadb.org)

## **Financial Effect of Chief Executive Party Orientation**

The chief executive party orientation indicates party orientation with respect to economic policy. We collect chief executive party orientation data from the Database of Political Institutions 2020 (DPI2020)<sup>18</sup>. In this case, we investigate whether market-friendly political leaders influence the effect of foreign aid flow on corporate leverage. Table 10 reports our investigation on the characteristics of the leader orientation, foreign aid, and corporate leverage. We argued that a market friendly chief political leader will induce development in market. This would thereby influence the private sector financing activities since they have new access to funds from the developed markets. Further, mutually constitutive interactions between business and the state are key contributing factors for successful development and private sector performance. However, state-business relations are often very complex, and the working mechanism between the state and business varies across countries and more dependent on the incumbent orientation towards development (Arthur, 2006; Handley, 2008; Kelsall, 2013).

*(Insert Table 10 here)*

In our empirical analysis, we find a positive and significant of chief market friendly for book leverage, but positive and insignificant for market leverage. When we perform the interaction effect between market-friendly leader and DAC aid, the positive sign remains but the significance disappears. When the interaction effect between market-friendly leader and non-DAC aid is used, we find a positive and significant effect only on book leverage. We find that a non-market friendly leader may restrain foreign aid inflow as much as it may affect negatively corporate debt in the local market, and this may depend on the types of aid.

## **Financial Effect of Government Effectiveness**

We interrogate the effect of foreign aid while interacting with government effectiveness on the firm leverage in the recipient country. To perform this analysis, we collect data on the variable namely Government effectiveness which is among the five governance indicators used by World Bank. We

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<sup>18</sup> The Database of Political Institutions 2020 (DPI2020) (iadb.org)

collect these data from World Bank.<sup>19</sup> Government effectiveness is an essential measure of good governance for private sector development through foreign aid. It can help ensure that aid resources are used effectively and efficiently. We set out our arguments that recipient country's effectiveness will influence the aid inflows positively, which would in turn improves the government access to fund. Since these governments are operating efficiently, they would then utilize the donor funds to build the stronger financial institutions and public-private interactions. Consequently, private firms would increase their performance in the debt market.

*(Insert Table 11 here)*

The results of our analysis show negative and significant effect of the interaction between non-DAC aid with low government effectiveness on both book and market leverage. Similarly, negative, but smaller and insignificant effects are reported for the non-DAC aid interaction with higher government effectiveness. We also perform a similar analysis of government effectiveness and foreign aid, but this time for OECD members' DAC foreign aid. Our results report negative signs in all our analyses with smaller coefficient compared to the non-DAC. The negative effect is also stronger for firms located in countries with lower government effectiveness. One possible reason for the negative and significant impact of non-DAC foreign aid on corporate leverage, particularly in countries with low government efficiency, is that aid may be poorly targeted or implemented. Non-DAC aid is often less coordinated and transparent than DAC Aid, which can lead to aid being misused or diverting from its intended purpose.

We indicate that in low effectiveness regime, foreign aid decreases the firm leverage, an indication that foreign aid may not have effect in developing the financial markets to a point that would incentivize private firms to borrow more. This is true since, ineffectiveness in recipient countries would lead to inefficiency in allocating the donor funds. This then would not help the corporate debt in any way. Similarly, low government effectiveness would lead to wastages of the donor funds, making it

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<sup>19</sup> Worldwide Governance Indicators | DataBank (worldbank.org)

difficult for the funds to achieve their intended local market development objectives. Moreover, we corroborate with the previous studies by showing that weak governance in donor-dependent nations as the cause of increased external financing crises (See (Qayyum et al., 2014)).

## **7. OWNERSHIP STRUCTURE AND BRIBE**

In this section, our analysis encompasses on three distinct leverage metrics: Book Leverage, Market Leverage, and Debt Equity, to provide a comprehensive understanding of the dynamics at play. The interaction term “High Govt ownership X Aid” consistently shows a negative and significant relationship across all models, emphasising a critical interaction between foreign aid and government ownership. This suggests that in contexts where government ownership is high, the inflow of foreign aid correlates with an evident reduction in corporate leverage. This could be interpreted as foreign aid fulfilling a stabilizing role, potentially providing firms with additional resources or financial buffers, which in turn reduces their reliance on debt.

The negative and significant coefficient of the interaction term “High Govt ownership X Aid” across all models and leverage measures stands out, painting a picture of foreign aid as a mitigating factor against corporate indebtedness in the presence of government ownership. This suggests that the strategic financial decisions of firms, especially in terms of their leverage, are significantly influenced by the interplay between external financial assistance and internal ownership structures.

*(Insert Table 12 and 13 here)*

We also provide insightful observations on the dynamics between foreign aid flows, corporate leverage, private ownership, and bribery. In Table 13, columns (1), (3), (5), and (7), the variable “*Private Bribe X Total aid*” has a positive significant coefficient, signifying a robust positive interaction between private bribes, total aid, and corporate leverage. This indicates that an increase of bribes in private firms and total aid is simultaneously associated with an increase in corporate leverage for private firm, showcasing a direct proportionality in this relationship. The statistical significance across these measurements of leverage further solidifies the reliability of this observed effect.

Contrarywise, “*Private Bribe X PSD aid*” explains a completely different story, exhibiting negative coefficients across columns (2), (4), (6), and (8). This contradiction between different types of aid underscores the effect that the nature of foreign aid can have on corporate financial structures in presence of bribe. Therefore, we indicate that private companies are not required to make any unofficial payments to receive support from aid programs dedicated to private sector development, as these financial resources are specifically allocated for that purpose. However, to access other types of aid, they may be required to make payments or provide other forms of corruption to government officials.

The variable “*PSD aid*” emerges with positive coefficients in specifications (2), (4), (6), and (8), indicating that aid to private sector is positively correlated with corporate leverage. On the other hand, the variable “*Total aid*” steadily shows a negative relationship with corporate leverage across all specifications, implying that an influx of total foreign aid correlates with a reduction in corporate leverage, and this is consistent with our main results in Table 4. This trend persists regardless of the leverage type in question, providing a clear indication of the broader impact of foreign aid on corporate finances.

## **8. CHOICE OF CORPORATE DEBT MATURITY**

We study the effect of various types of foreign aid on corporate debt maturity. In this context, the primary focus is on understanding how different categories of foreign aid influence the maturity structure of corporate debt. Corporate debt maturity is a crucial aspect of a company’s financial structure, influencing its risk profile, cost of capital, and financial flexibility. We categorize the maturity structure of debt into long-term and short-term leverage. Long-term leverage pertains to debts that are due in more than one year, providing companies with a stable source of financing but potentially at a higher cost. Short-term leverage, on the other hand, refers to debts that are due within a year, which may be cheaper but can expose companies to refinancing risks. We provide a constructive understanding of how different types of foreign aid impact the maturity structure of corporate debt. Our results highlight the complexity of these relationships, suggesting that the effect of foreign aid flows on corporate debt maturity depends on the type and source of aid.



(Insert Table 14 here)

The types of foreign aid we analyse include total aid flows (*Total aid*), aid to Private Sector Development (PSD Aid), bilateral *aid*, multilateral aid, DAC Aid, Non-DAC Aid, aid from China (*China Aid*), aid from the USA (*USA Aid*), aid from United Kingdom (*GBR aid*) and aid from France (France Aid). Each of these represents a specific category of foreign assistance, potentially coming from different sources and with varying terms and conditions. Except for aid to private sector development (*PSD aid*), USA aid, and bilateral aid, other types of foreign aid show a statistically significant negative relationship with long-term leverage, suggesting that an increase in these types of foreign aid is associated with a decrease in long-term debt. This could imply that companies are more inclined to rely on short-term financing when they receive more foreign aid. *PSD Aid* shows a significant positive relationship with long-term leverage, indicating that this type of aid is associated with an increase in the proportion of long-term debt. This might suggest that this form of aid provides companies with the confidence and steadiness to take on longer-term obligations.

As foreign aid flows are often viewed as a form of external financing that can replace domestic sources of financing such as bank loans or equity financing. Therefore, when foreign aid is available, local companies are less inclined to borrow capital to fund their operations. This effect can be particularly pronounced over the long term, as foreign aid can provide a more stable and predictable source of funding that can support longer-term investments. In the short term, however, the impact of foreign aid on debt financing may be weaker. This could be because short-term funding needs are often more urgent and require a quick injection of capital that may not be readily available through foreign aid channels. In addition, short-term financing needs may be more closely linked to the domestic economic and political environment, which may be less affected by foreign aid.

## **9. MORE ROBUSTNESS TEST: DIFF IN DIFF (DID) ANALYSIS**

The findings from the Difference-in-Differences analysis provide insightful implications for understanding the dynamics of corporate debt in the context of foreign aid, government ownership, and the aftermath of the 2008 global financial crisis, particularly in African countries.

*(Insert Table 15 here)*

The relevance of DID approach is essential in our analysis. In the context of the 2008 Accra Agenda for Action (Development Assistance Committee, 2008) and the global financial crisis, the DID model offers a structured econometric approach to sharp the causal effect of these events on corporate financing, explicitly examining the interplay between government ownership of firms, foreign aid and changes in corporate financing. Firstly, the DID model is adept at insulating causal relationships by comparing changes in outcomes over time across government owned firms and private firms. The interaction term within the DID model is remarkably influential as it measures the variance effect of government ownership on corporate leverage in the post-crisis period. Policy implications are at the heart of this analysis (see (Deaton, 2010)). The Accra Agenda for Action focuses on effective aid utilization, a principle that extends to the management of corporate debt, especially during economic recessions. Understanding the role of government ownership in stabilizing or destabilizing corporate leverage is critical for policymakers who aim to use foreign aid and government participation in corporate ownership as tools for economic recovery (Vollmer, 2014). Engaging the DID analysis brings empirical accuracy to the study, enhancing the credibility of causal interpretations derived from the analysis.

In the context of African countries, where foreign aid saw a substantial increase post-2008, this rise in corporate debt could be partially attributed to the influx of foreign capital and aid. However, the interaction between government ownership and the post-2008 period, captured by the "Post X GovOwnership" variable, reveals a more essential story. The negative and significant coefficients across different leverage measures suggest that firms with government ownership experienced a smaller increase, or even a decrease, in their leverage compared to private firms. This is consistent with the notion that in the wake of the financial crisis, governments in African countries provided higher financial support to state-owned or government-affiliated firms, cushioning them against the economic downturn and reducing their need to accrue debt.

Specifically, the analysis of book leverage and long-term leverage highlights that while debt levels increased across the board, government ownership played a stabilizing role, mitigating the surge

in indebtedness. For the debt-to-equity ratio, the lack of a significant change in the post-crisis period for the average firm, coupled with a significant reduction for government-owned firms, further underscores the protective effect of government affiliation. On the other hand, the significant decrease in short-term leverage for government-owned firms indicates a strategic shift or better access to alternative financing sources, possibly facilitated by government support or foreign aid channels.

The DID results paint a picture of increased reliance on debt financing in the post-crisis period, with government ownership serving as a crucial factor in dampening this trend. The role of foreign aid and government support becomes particularly evident when considering the context of African countries, highlighting the multifaceted interplay between external financial assistance, government policies, and corporate financial decisions. This analysis contributes to our understanding of how government affiliation and external support mechanisms can influence corporate debt structures.

## **10. CONCLUSION**

In this comprehensive study, we research into the intricate dynamics of how foreign aid influences corporate leverage within a significant sample of 22 African countries, analysing data from 1,639 non-financial listed firms. Our results prominently highlight a negative relationship between total foreign aid and corporate leverage. This relationship is not monolithic; it exhibits variability contingent upon the specific channels through which aid is dispensed, as well as the ownership characteristics of the firms in question. Such understanding underscores the complexity of foreign aid's implications on corporate debt financing, illustrating that its effects cannot be generalized across the board, but rather require a careful analysis of the contextual factors at play. We observed that the impact of foreign aid is more pronounced for long-term corporate leverage. This aspect of our findings is particularly interesting as it sheds light on the strategic financial adjustments that firms make in response to foreign aid inflows.

Moreover, our study reveals that the types and sources of aid play a pivotal role in determining the extent of its impact, adding another layer of complexity to the intricate relationship between foreign aid and corporate leverage. Our analysis also extends to understanding the varying effects of aid

dispensed by different international actors. We discovered that members of the Development Assistance Committee (DAC) and non-DAC members of the Organisation for Economic Co-operation and Development (OECD) have distinct negative effects on corporate leverage. This differentiation further extends to bilateral and multilateral aid, each having unique implications.

Interestingly, our study highlights a temporal dimension to the impact of foreign aid on corporate leverage. We find that the typically negative relationship between foreign aid and corporate debt tends to weaken during election times, a phenomenon influenced by the political orientation of the chief executive and the effectiveness of the government in power. This insight is of paramount importance as it underscores the potential volatility in the relationship between foreign aid and corporate leverage, contingent upon the prevailing political climate. Furthermore, our research sheds light on how the allocation of foreign aid to the private sector plays a critical role in influencing its impact on corporate leverage. We found that total foreign aid exhibits a significant positive effect exclusively for firms that engage in bribery, while aid specifically directed towards private sector development significantly benefits larger firms. This distinction is vital for understanding the conditional nature of foreign aid's effectiveness and its dependency on the internal practices and size of the recipient firms.

In sum, our extensive study provides a complex view of the relationship between foreign aid and corporate leverage in African countries. The deep comprehensive derived from our analysis highlight the complexity of this relationship, demonstrating its dependency on many factors including the channels and types of aid, the ownership structure of firms, the political climate, and the allocation of aid to the private sector. Our findings, corroborated by an instrumental variable approach and a Difference-in-Differences analysis.

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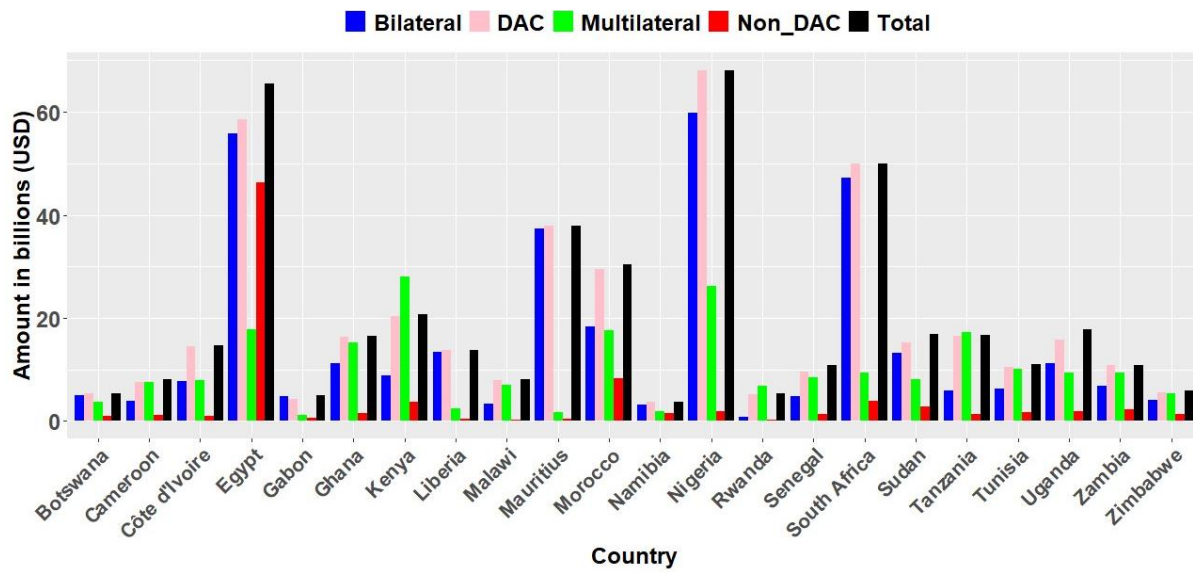
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**Figure 1**

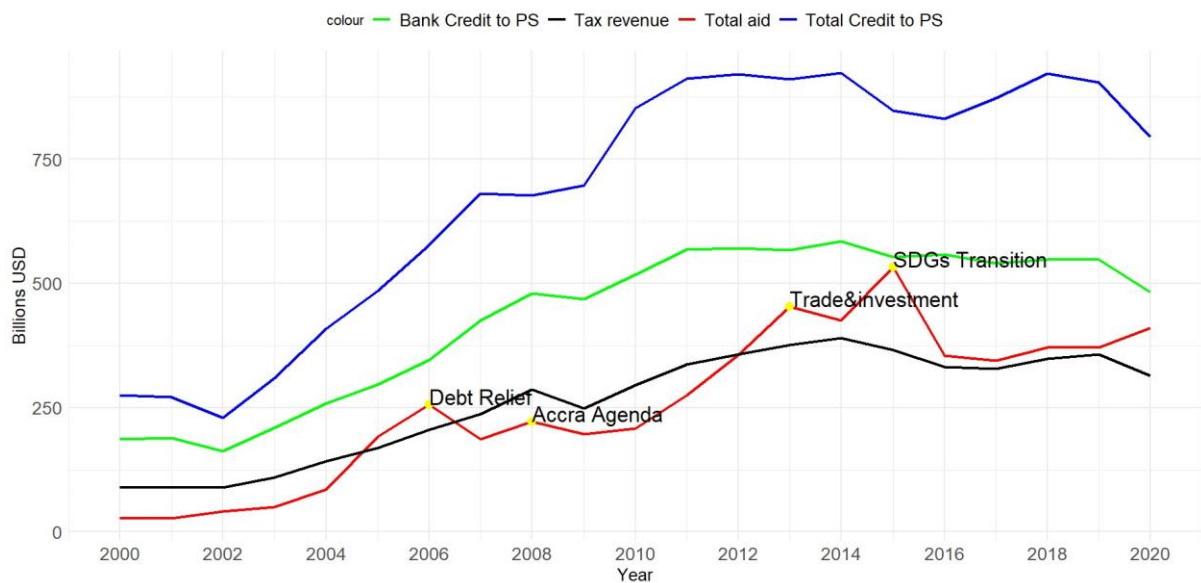
Classification of aid by sources and channels



The figure outlines the foreign aid landscape for 22 African countries that we use in our sample, comparing sources and channels with its GDP. The superiority of DAC Aid underscores Africa's continued reliance on traditional OECD-DAC member donations, a testament to enduring historical ties. Non-DAC Aid, though emergent, occupies a smaller share, indicating the nascent stage of partnerships with non-traditional donors. Intriguingly, the dominance of bilateral aid over its multilateral counterpart reveals the significance of direct country-to-country relationships in Africa's aid dynamics. Such bilateral relationships, potentially shaped by historical connections and strategic interests, seem to eclipse the role of multilateral institutions, which, despite their collective decision-making and pooled resources, command a smaller portion of the aid pie.

**Figure 2:**

Foreign Aid Flows, Credit to Private Sector and Tax Revenue



The year 2006 was notable for the implementation of the Multilateral Debt Relief Initiative (MDRI), which aimed to relieve the debt burdens of the world's most impoverished nations, a substantial number of which are in Africa. Consequently, this period might be marked by a decline in the overall aid figures as debt forgiveness was integrated into aid statistics. Moreover, in 2008, the Accra Agenda for Action built on the foundations of the March 2, 2005, Paris declaration on aid effectiveness, reinforcing the need for stronger partnerships between donor and recipient countries. This initiative championed more transparent and accountable frameworks for aid, advocating for it to be more results-driven and tailored to the needs of the recipient countries. Furthermore, by 2013, there was a discernible pivot from traditional aid to an emphasis on trade and investment. This transition favored sustainable economic partnerships, as evidenced by an uptick in loans and foreign investments over direct aid. China's increasing role in Africa was emblematic of this trend, focusing on infrastructure and investment rather than conventional aid. This significant shift redefined the aid narrative in Africa, leaning more towards economic growth and self-sufficiency as the new benchmarks for development. Subsequently, in 2015, the transition from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs) marked a new chapter in development strategy. The SDGs broadened the scope of development objectives, encompassing not only poverty reduction but also sustainable economic growth, environmental sustainability, and the promotion of good governance. Therefore, the transition to the SDGs likely reshaped aid strategies to align with these more comprehensive and ambitious goals.

**Table 1**

Summary Statistics: Firm level variables

<b>Variables</b>	(1) <b>Mean</b>	(2) <b>sd</b>	(3) <b>p25</b>	(4) <b>p50</b>	(5) <b>p75</b>	(6) <b>N</b>
Book leverage	0.22835	0.18528	0.080897	0.19128	0.33245	15,362
Market leverage	0.19243	0.18162	0.042464	0.14247	0.29084	15,362
Tangibility	0.38051	0.26324	0.15927	0.34909	0.58042	15,362
ROA	0.11913	0.13326	0.045720	0.10375	0.17550	15,362
Market to book	2.85855	8.38796	0.88855	1.17111	1.77273	15,362
Long-term leverage	0.12534	0.15094	9.5315e-03	0.071639	0.18434	15,362
Short-term leverage	0.10053	0.11257	0.015354	0.060744	0.14736	15,362
Lnassets	19.3297	3.20296	17.4458	18.7024	20.3676	15,362

This table reports the summary statistics for firm level variables. Book leverage is the ratio of corporate debt to book value of assets. Market leverage is the ratio of corporate debt to the market value of an asset. Tangibility is the ratio of net plant, property, and equipment to the total assets. Market to book is the ratio of market value of asset to the book value. Lnassets is the natural log of the book value of asset in dollar terms. ROA is of the return on assets.

**Table 2**

Summary Statistics: Country level variables

VARIABLES	(1) mean	(2) sd	(3) p25	(4) p50	(5) p75	(6) N
Total aid to GDP	0.44813	1.13186	0.11097	0.23009	0.41339	402
Non_DAC aid to GDP	0.013305	0.021003	1.3500e-03	6.4788e-03	0.015479	402
DAC aid to GDP	0.43482	1.13215	0.095317	0.20978	0.40264	402
Multilateral aid	0.20873	0.22779	0.036984	0.12111	0.26169	402
Bilateral aid	0.23940	1.07378	0.015846	0.083026	0.16624	402
Unemployment	9.71284	7.16778	3.60000	7.33000	14.9400	402
LnGDP per capita	7.38771	0.97900	6.61306	7.27778	8.16618	402
Inflation	7.64527	6.32232	3	6.20000	10.4000	402
LnExchange rate	3.88509	2.48174	1.92086	3.54869	6.21382	402

This table reports the country level variables. Total Aid to GDP refers to the percentage of a country's GDP that is comprised of total foreign aid flows. These flows include the sum of both DAC aid and non-DAC aid. DAC Aid to GDP represents aid from OECD members of the Development Assistance Committee (DAC), while Non-DAC Aid to GDP refers to aid from non-OECD-DAC members. Multilateral aid is provided through international organizations, such as the IMF, UN, and World Bank. In contrast, bilateral aid is given directly from one country to another. Inflation is measured by the annual percentage change in consumer prices. The nominal exchange rate represents the official exchange rate (local currency unit per US dollar). Unemployment is the percentage of the labour force that is without work but is available for and actively seeking employment. Lastly, LnGDP per capita denotes the natural logarithm of GDP per capita. Other variables are explained in detail in the appendix.

**Table 3**

UNGA vote similarities

VARIABLES	(1) mean	(2) Sd	(3) p25	(4) p50	(5) p75	(6) N
vote_CHN_Africa	0.66389	0.13096	0.61240	0.68842	0.74725	402
vote_FRA_Africa	0.46354	0.089276	0.42982	0.47802	0.52128	402
vote_GBR_Africa	0.46259	0.093558	0.43617	0.48240	0.52174	402
vote_USA_Africa	0.21612	0.072827	0.17582	0.20856	0.25714	402

This table presents United Nations General Assembly vote similarities for African countries and the UN permanent veto members. We miss foreign aid flows data for Russia. Although Russia's presence in Africa is growing, it remains a relatively minor player on most of the continent, with the exception of a few key countries and industries (Brezhneva & Ukhova, 2013; Russell & Pichon, 2019). In our sample, a significant number of countries lack comprehensive data on foreign aid from Russia (See: <https://devinit.org/data/datasets/>). The variable "vote-CHN-Africa" is a continuous variable representing the voting preferences of African countries in alignment with China. Similarly, "vote-USA-Africa" indicates the voting preferences of African countries in line with the USA, "Vote-FRA-Africa" reflects the voting preferences of African countries in agreement with France, and "vote-GBR-Africa" signifies the voting preferences of African countries in accordance with the UK.

**Table 4**

## Foreign aid and corporate debt financing

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Debt Equity	(4) Book leverage	(5) Market leverage	(6) Debt Equity
<b>Total aid</b>	<b>-0.0043***</b> <b>(0.000)</b>	<b>-0.0038***</b> <b>(0.004)</b>	<b>-0.0414***</b> <b>(0.000)</b>	<b>-0.0053***</b> <b>(0.000)</b>	<b>-0.0057***</b> <b>(0.000)</b>	<b>-0.0448***</b> <b>(0.000)</b>
LnGDP per capita	-0.0059 (0.564)	0.0170 (0.121)	0.4621* (0.068)	-0.0145 (0.350)	0.0221*** (0.009)	0.1143 (0.714)
LnExchange Rate	-0.0005 (0.848)	0.0010 (0.666)	0.0268 (0.245)	-0.0004 (0.856)	0.0014 (0.553)	-0.0028 (0.904)
Tangibility	0.1348*** (0.000)	0.0969*** (0.000)	0.8580*** (0.004)	0.1041*** (0.000)	0.0675** (0.016)	1.1295*** (0.001)
Lnassets	0.0001 (0.961)	0.0020 (0.238)	0.0885 (0.128)	-0.0053*** (0.003)	-0.0009 (0.623)	-0.0307** (0.022)
ROA	-0.1614*** (0.000)	-0.2071*** (0.000)	-2.1199*** (0.000)	-0.1317*** (0.000)	-0.1567*** (0.000)	-1.7639*** (0.000)
Market to book	-0.0003** (0.012)	-0.0045*** (0.000)	0.0007 (0.625)	-0.0003 (0.126)	-0.0042*** (0.000)	-0.0074 (0.242)
Unemployment	-0.0041*** (0.004)	-0.0022 (0.225)	-0.0083 (0.622)	-0.0035*** (0.003)	-0.0020 (0.267)	-0.0076 (0.706)
Inflation	-0.0020*** (0.000)	-0.0023*** (0.000)	-0.0046 (0.456)	-0.0016*** (0.006)	-0.0017*** (0.000)	0.0028 (0.734)
Observations	15,362	15,362	15,362	15,362	15,362	15,362
R-squared	0.666	0.626	0.199	0.851	0.792	0.545
Country FE	YES	YES	YES	NO	NO	NO
Industry FE	YES	YES	YES	NO	NO	NO
Year FE	YES	YES	YES	YES	YES	YES
Firm FE	NO	NO	NO	YES	YES	YES

This table reports the findings on foreign aid and corporate debt financing. All variables are described in the legend of Table 1 and Table 2. All regressions include the fixed effect for industry, country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 5**

The effect of sources and types of foreign aid on corporate leverage

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Debt Equity	(4) Book leverage	(5) Market leverage	(6) Debt Equity
DAC aid	-0.0042*** (0.000)	-0.0037*** (0.006)	-0.0404*** (0.000)			
Non DAC aid	-0.3078*** (0.000)	-0.2307*** (0.006)	-2.2816* (0.095)			
Bilateral Aid				-0.0072 (0.432)	-0.0045 (0.672)	-0.1012 (0.230)
Multilateral aid				-0.0658** (0.042)	-0.0766* (0.060)	-0.7191 (0.260)
Tangibility	0.1348*** (0.000)	0.0969*** (0.000)	0.8583*** (0.004)	0.1344*** (0.000)	0.0964*** (0.000)	0.8541*** (0.005)
Lnassets	0.0005 (0.752)	0.0023 (0.174)	0.0913 (0.118)	0.0002 (0.920)	0.0021 (0.204)	0.0892 (0.123)
ROA	-0.1621*** (0.000)	-0.2077*** (0.000)	-2.1250*** (0.000)	-0.1606*** (0.000)	-0.2060*** (0.000)	-2.1112*** (0.000)
Market book	-0.0003** (0.013)	-0.0045*** (0.000)	0.0008 (0.563)	-0.0003** (0.014)	-0.0045*** (0.000)	0.0008 (0.559)
Unemployment	-0.0031** (0.034)	-0.0014 (0.401)	-0.0011 (0.956)	-0.0037** (0.014)	-0.0018 (0.317)	-0.0040 (0.834)
Inflation	-0.0019*** (0.000)	-0.0022*** (0.000)	-0.0042 (0.492)	-0.0020*** (0.000)	-0.0023*** (0.000)	-0.0051 (0.408)
LnGDP per capita	-0.0042 (0.681)	0.0183 (0.103)	0.4751* (0.068)	-0.0120 (0.291)	0.0117 (0.329)	0.3910 (0.132)
LnExchange rate	-0.0005	0.0010	0.0265	-0.0002	0.0014	0.0297
LnGDP per capita	-0.0042	0.0183	0.4751*	-0.0120	0.0117	0.3910
Observations	15,362	15,362	15,362	15,362	15,362	15,362
R-squared	0.666	0.626	0.199	0.666	0.626	0.199
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 5 presents the effect of sources and types of foreign aid on corporate leverage. The sources of foreign aid flows are OECD-DAC members and non-OECD-DAC members countries. While the types are multilateral and bilateral. Multilateral and bilateral foreign aid are two different types of aid provided by countries to support development in other countries. Bilateral aid is provided directly from one country to another. Multilateral aid, on the other hand, is provided through organizations such as the United Nations or the World Bank. All variables are described in the legend of Table 1 and Table 2. All regressions include the fixed effect for industry, country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.



**Table 6****Foreign Aid to Private Sector Development**

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Debt Equity	(4) Book leverage	(5) Market leverage	(6) Debt Equity
PSD aid	0.1633*** (0.002)	0.2139** (0.016)	1.8345*** (0.007)	0.1584* (0.065)	0.1905** (0.027)	2.3628** (0.018)
LnGDP per capita	-0.0153 (0.313)	0.0207** (0.015)	0.1011 (0.744)	-0.0070 (0.502)	0.0154 (0.169)	0.4410* (0.066)
LnExchange rate	-0.0004 (0.852)	0.0014 (0.555)	-0.0028 (0.904)	-0.0004 (0.857)	0.0011 (0.654)	0.0274 (0.245)
Tangibility	0.1052*** (0.000)	0.0689** (0.014)	1.1412*** (0.001)	0.1353*** (0.000)	0.0975*** (0.000)	0.8660*** (0.004)
Lnassets	-0.0054*** (0.003)	-0.0011 (0.578)	-0.0319** (0.016)	0.0000 (0.979)	0.0020 (0.247)	0.0877 (0.128)
ROA	-0.1327*** (0.000)	-0.1578*** (0.000)	- (0.000)	-0.1618*** (0.000)	-0.2076*** (0.000)	- (0.000)
Market to book	-0.0003 (0.121)	-0.0042*** (0.000)	-0.0074 (0.236)	-0.0003*** (0.010)	-0.0045*** (0.000)	0.0006 (0.698)
Unemployment	-0.0035*** (0.004)	-0.0019 (0.305)	-0.0067 (0.744)	-0.0040*** (0.005)	-0.0020 (0.263)	-0.0066 (0.699)
Inflation	-0.0015*** (0.008)	-0.0016*** (0.000)	0.0038 (0.644)	-0.0019*** (0.000)	-0.0022*** (0.000)	-0.0033 (0.579)
Observations	15,362	15,362	15,362	15,362	15,362	15,362
R-squared	0.851	0.792	0.545	0.666	0.626	0.199
Country FE	NO	NO	NO	YES	YES	YES
Industry FE	NO	NO	NO	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	NO	NO	NO

In this tale, we present the effect of aid to Private Sector Development (PSD aid). Aid to financial service development targets the improvement of financial institutions' infrastructure, and regulatory frameworks to promote financial inclusion, stability, and efficiency in the recipient country. Both types of aid aim to promote sustainable economic growth and development in recipient countries, but their focus areas and target beneficiaries are different. All variables are described in the legend of Table 1 and Table 2. All regressions include the fixed effect for industry, country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 7**

Firm size: Total Assets

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Longterm leverage	(4) Shortterm leverage
PSD X large assets	0.3651*** (0.000)	0.4583*** (0.000)	0.3417*** (0.000)	0.0242 (0.704)
PSD X small assets	0.0471 (0.490)	-0.0110 (0.935)	0.1398* (0.054)	-0.0787** (0.044)
Large assets	-0.1525** (0.033)	-0.0924 (0.291)	-0.0601 (0.367)	-0.0946** (0.047)
Observations	15,362	15,362	15,362	15,362
R-squared	0.648	0.605	0.511	0.479
Control variables	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

In this table we test if the effect of aid to private sector on corporate leverage is stronger for larger or small firms. Large firm is a dummy variable equals to 1 if a firm is in the group of larger assets and 0 otherwise. Small firm is a dummy variable equal to 1 if firm is in the group of small assets and 0 otherwise. Aid to PSD X large firms stands for the interaction of aid to private sector development and a dummy variable large firm. Aid to PSD X small firms stands for the interaction of aid to private sector development and a dummy variable small firm. PSD stands for Private Sector Development. All regressions include the fixed effect for country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 8**

Two-stage least square: Instrumental variable

	(1)	(2)	(3)	(4)
<b>Panel A: First stage</b>	Aid from US	Aid from China	Aid from GBR	Aid from France
vote_USA_Africa	0.2325*** (0.000)			
vote_CHN_Africa		0.0118*** (0.000)		
vote_GBR_Africa			0.0602*** (0.000)	
vote_FRA_Africa				0.0687*** (0.000)
Observations	385	283	385	385
R-squared	0.420	0.262	0.301	0.240
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Control variable	YES	YES	YES	YES
Sargan statistic	2.22	1.78	0.77	2.189
p-value	0.136	0.182	0.38	0.139
	(1)	(2)	(3)	(4)
<b>Panel B: Second stage</b>	Second stage Book leverage	Second stage Book leverage	Second stage Book leverage	Second stage Book leverage
Aid from China	-0.6743*** (0.000)			
Aid from GBR		-0.0678*** (0.000)		
Aid from US			-0.0632*** (0.003)	
Aid from France				-0.0386 (0.195)
Observations	10,695	15,362	15,362	15,362
R-squared	0.654	0.659	0.657	0.659
Control Variables	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R2	0.652	0.655	0.653	0.655

In this table, panel A Presents the first stage results using UNGA voting similarities as our instrument. Panel B present second stage results. We also report the Sargan statistic, which tests the validity of instruments used in a regression model by testing whether they are uncorrelated with the error term. The Sargan statistic value is reported for four variables (vote\_USA\_Africa, vote\_CHN\_Africa, vote\_GBR\_Africa and vote\_FRA\_Africa), along with their corresponding p-values, which are all greater than 0.05. This suggests that the instruments are likely valid and can be used to estimate the coefficients of the endogenous variables in the model. All variables are described in the legend of Table 1 and Table 2. We use the following model for the first stage:  $Foreign\ aid_{v,j,t} = \beta UN\ vote\ similarities_{v,j,t} + Country\ control\ variables Y_{j,t} + \sum_t year + \sum_j Country + u_{it}$  (Equation 3: Instrumental variable).  $Foreign\ aid_{v,j,t}$  represent the foreign aid from each permanent

veto member country  $v$  to the receiver country  $i$  at year  $t$ . *UN vote similarities* $_{v,j,t}$  is a continuous variable for the proportion of voting similarities. Mathematically, the formula for the continuous variable for proportion of voting similarities of each African country  $i$  in alignment with UN permanent veto member country  $v$  for a given year  $t$  can be written as:  $\mu_{i,j,t} = (\sum Dummy_{i,j,t})/n_{i,j,t}$ . Here,  $\mu_{i,j,t}$ : *UN vote similarities* $_{v,j,t}$ : It represents the proportion of same preferences between country  $i$  and a UN permanent veto member  $v$  at year  $t$ . *Dummy* $_{i,v,t}$  stands for a dummy variable equals to 1 if an African country  $i$  has the same voting preference as the UN permanent veto member country  $v$ . Otherwise, this variable takes the value of 0.  $\sum Dummy_{i,v,t}$  represents the sum of the voting preferences of country  $i$  in alignment with country  $v$  for year  $t$ .  $n_{i,j,t}$  represents the number of voting preference values for country  $i$  and  $j$  in year  $t$ . The voting preference of country in UNGA sessions are recorded as either voting ‘yes,’ ‘abstain,’ or ‘no.’ The predominant view in the literature is that these choices should be treated as ordinal in that a ‘no’ vote is a stronger signal of disapproval than an abstention. States can also be absent from the UNGA (Voeten, 2012). Foreign aid has been tied to certain necessary conditions and extended to nations or governments perceived to be friendly (Adhikari, 2019). In other instances, foreign aid has targeted to benefit recipient nations that have either aligned their policies with the donor nations or have committed to do so, with the voting behaviour documented to influence future aid allocation decisions (Dreher & Fuchs, 2015). This approach has seen foreign aid being used as a foreign policy tool, with donor nations willing to go extra mile to ‘force’ recipient nations to follow their political ideologies and alignment. All regressions include the fixed effect for country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 9**

The effect of foreign aid in times of election

VARIABLES	(1) Long-term leverage	(2) Short-term leverage	(3) Long-term leverage	(4) Short-term leverage	(5) Long-term leverage	(6) Short-term leverage
Total foreign aid	-0.0035** (0.040)	-0.0004 (0.796)				
Elect year	-0.0025 (0.462)	0.0009 (0.748)	-0.0031 (0.358)	0.0009 (0.750)	-0.0059* (0.055)	0.0001 (0.981)
Total aid X Elect year	-0.0184* (0.050)	-0.0039 (0.606)				
DAC aid			-0.0033* (0.055)	-0.0003 (0.814)		
DAC X Elect year			-0.0168* (0.076)	-0.0041 (0.593)		
Non_DAC aid					-0.3070*** (0.000)	-0.0364 (0.463)
Non-DAC X Elect year					-0.0604 (0.605)	-0.0003 (0.998)
Observations	15,362	15,362	15,362	15,362	15,362	15,362
R-squared	0.544	0.506	0.544	0.506	0.544	0.506
Control variables	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

This table reports the findings on the corporate leverage effect of foreign aid in times of election. Elect year is a dummy variable that takes the value of "1" if there was a legislative or executive election in the country  $i$  at year  $t$  and 0 otherwise. Total aid X Elect year stands for the interaction of total foreign aid and a dummy variable elect year. DAC X Elect year stands for the interaction of aid from OECD-DAC members and a dummy variable elect year. Non-DAC X Elect year stands for the interaction of aid from non-DAC members and a dummy variable elect year. All variables are described in the legend of Table 1 and Table 2. All regressions include the fixed effect for industry, country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 10**

## Financial effect of chief executive party orientation

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Book leverage	(4) Market leverage
DAC aid	-0.0041* (0.061)	-0.0037* (0.075)		
Chief Market Friendly	0.0217*** (0.008)	0.0096 (0.220)	0.0125 (0.120)	0.0073 (0.342)
DAC X Chief Market Friendly	0.0116 (0.609)	0.0057 (0.792)		
Non_DAC_aid			-0.3415*** (0.000)	-0.2482*** (0.001)
Non_DAC X Chief Market Friendly			1.3432** (0.020)	0.7317 (0.183)
Observations	15,362	15,362	15,362	15,362
R-squared	0.667	0.627	0.668	0.628
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

This table reports the findings on chief executive party orientation. The Chief Market Friendly stands for the chief executive party orientation, and it indicates party orientation with respect to economic policy. We collect election data from DPI2020 Database of Political Institutions. We create a market-friendly dummy variable based on the chief executive party orientation. The dummy variable market-friendly takes the value of 1 if the chief executive party orientation focuses on economic issues and advocates for private enterprise. According to (Cruz et al., 2021), chief executive party orientation concerning economic policy is categorized into four main groups: right, left, center, and 0. Right encompasses parties described as conservative, Christian democratic, or right-wing, while Left includes communist, socialist, social democratic, or left-wing parties. Center refers to parties characterized as centrist or those advocating for private enterprise in a social-liberal context but excludes parties with competing factions that "average out" to a centrist position. The 0 category is used for cases that do not fit the other categories, such as when a party's platform doesn't focus on economic issues, there are competing wings, or no information is available. DAC X Chief Market Friendly stands for the interaction of aid from OECD-DAC members and a dummy variable Chief Market Friendly. Non\_DAC X Chief Market Friendly stands for the interaction of aid from non-DAC members and a dummy variable Chief Market Friendly. All other variables are described in the legend of Table 1 and Table 2. All regressions include the fixed effect for industry, country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 11**

## Financial effect of government effectiveness

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Book leverage	(4) Market leverage
Low govt effectiveness	0.0014 (0.854)	-0.0026 (0.716)	0.0198** (0.020)	0.0060 (0.463)
DAC aid	0.0135 (0.198)	0.0266*** (0.008)		
DAC X high govt effectiveness	-0.0157 (0.188)	-0.0282** (0.013)		
DAC X Low govt effectiveness	-0.0179* (0.080)	-0.0305*** (0.002)		
Non_DAC aid			0.3271 (0.117)	0.2685 (0.177)
Non-DAC X high govt effectiveness			-0.5153 (0.167)	-0.4527 (0.203)
Non-DAC X Low govt effectiveness			-0.7833*** (0.001)	-0.5770*** (0.008)
Observations	15,362	15,362	15,362	15,362
R-squared	0.667	0.628	0.668	0.628
Control Variables	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

This table reports the findings on corporate leverage effect of foreign aid and government effectiveness. We divide our sample into two groups. The higher group and lower group. Low govt effectiveness is a dummy variable equals to 1 if the firm  $i$  at year  $t$  located in the lower group and 0 otherwise. high govt effectiveness is a dummy variable equals to 1 if the firm  $i$  at year  $t$  located in the higher group and 0 otherwise. DAC X high govt effectiveness stands for the interaction of aid from the OECD-DAC members and high govt effectiveness dummy. DAC X Low govt effectiveness stands for the interaction of aid from the OECD-DAC members and low govt effectiveness dummy. Non-DAC X high govt effectiveness stands for the interaction of aid from the non-DAC members and high govt effectiveness dummy. Non-DAC X Low govt effectiveness stands for the interaction of aid from the non-DAC members and low govt effectiveness dummy. All variables are described in the legend of Table 1 and Table 2. All regressions include the fixed effect for industry, country and year. The robust p-values are shown in brackets. \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% respectively.

**Table 12****Foreign Aid, Government Ownership and Corporate Leverage**

VARIABLES	(1) Book leverage	(2) Market leverage	(3) Debt Equity	(4) Book leverage	(5) Market leverage	(6) Debt Equity
High Govt ownership	0.0608 (0.645)	-0.2064 (0.143)	-1.2173 (0.594)	0.0142* (0.087)	0.0170** (0.031)	-0.0910 (0.472)
Low Govt ownership X Aid	0.0001 (0.997)	-0.0199 (0.239)	-0.0612 (0.823)	0.0104 (0.623)	-0.0151 (0.457)	-0.1354 (0.677)
Medium Govt ownership XAid	-0.0019 (0.640)	-0.0010 (0.824)	-0.0234 (0.742)	-0.0009 (0.874)	-0.0003 (0.960)	0.0171 (0.845)
High Govt ownership XAid	-0.0059*** (0.000)	-0.0064*** (0.000)	-0.0526* (0.070)	-0.0049** (0.037)	-0.0043* (0.058)	-0.0527 (0.145)
Observations	15,362	15,362	15,362	15,362	15,362	15,362
R-squared	0.851	0.792	0.546	0.667	0.626	0.199
Control Variables	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES			
Year FE	YES	YES	YES	YES	YES	YES
Industry FE				YES	YES	YES
Country FE				YES	YES	YES

This table presents the regression results examining the impact of the foreign aid flows on corporate leverage, with a specific focus on the level of government ownership in local firms. We divide our sample into tercile based on the percentage of government ownership in local firms. High Govt ownership is a dummy variable equal to 1 if the firm located in the country with higher ownership in local firms and 0 otherwise. Low Govt ownership is a dummy variable equal to 1 if the firm located in the country with lower ownership in local firms and 0 otherwise. Medium Govt ownership is a dummy variable equal to 1 if the firm located in the country with medium ownership in local firms and 0 otherwise. Standard errors clustered at the industry level. Significance levels are denoted by \*, \*\*, and \*\*\* for 10%, 5%, and 1%, respectively. We define all variables in the appendix. Control variables are LnGDP per capita LnExchange rate Tangibility Lnassets ROA Market\_to book Unemployment and Inflation.



**Table 13****Foreign Aid, Private Ownership, Bribe and Corporate Leverage**

VARIABLES	(1) Book leverage	(2) Book leverage	(3) Market leverage	(4) Market leverage	(5) Book leverage	(6) Book leverage	(7) Market leverage	(8) Market leverage
Private Bribe X Total aid	0.2820*** (0.003)		0.1862** (0.025)		0.2250*** (0.000)		0.1261*** (0.007)	
Private Bribe X PSD aid		-2.5172*** (0.002)		-1.7121** (0.023)		-2.4548*** (0.000)		-2.0164*** (0.003)
Total aid	-0.0042*** (0.000)		-0.0037*** (0.001)		-0.0051*** (0.001)		-0.0055*** (0.001)	
Private Bribe	-0.0294 (0.114)	0.0203* (0.072)	-0.0135 (0.324)	0.0190*** (0.003)	-0.0165** (0.032)	0.0266*** (0.000)	0.0023 (0.774)	0.0299*** (0.000)
FID aid		0.1468*** (0.001)		0.1772* (0.090)		0.1457*** (0.007)		0.1909*** (0.001)
Observations	15,362	15,362	15,362	15,362	15,362	15,362	15,362	15,362
R-squared	0.667	0.666	0.626	0.626	0.851	0.851	0.792	0.792
Control Variables	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES				
Country FE	YES	YES	YES	YES				
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE					YES	YES	YES	YES

This table presents the regression results examining the impact of the total foreign aid (*Total aid*) flows and aid to the Private Sector Development (*PSD aid*) on corporate leverage (*Book leverage and Market leverage*), with a specific focus on the level of private ownership and bribe in local firms. The World Bank Enterprises Survey (WBES) defines the bribe variable as a dummy variable, taking the value of 1 if the company engaged in giving gifts or made unofficial payments to government officials to facilitate their operations, and 0 otherwise. However, due to the nature of the surveys being conducted in various locations and at different times, there is a considerable amount of missing data for certain years. For instance, data pertaining to Rwandan firms is only available for the years 2006, 2011, and 2012, as these were the years when the surveys were administered in Rwanda. This poses a challenge for our research, as our aim is to analyze data spanning from the year 2000 to 2020. To address this issue and mitigate the impact of missing data, we have taken the initiative to use the means on countries' level. This approach fills in the gap and provides a more comprehensive dataset, thereby enhancing the robustness and reliability of our analysis. We define the *bribe* as a dummy variable, taking the value of 1 if the company located in country with higher bribe and zero otherwise. *Private Bribe* is a dummy variable equal to 1 if the company is private and located in country with higher bribe and zero otherwise. Standard errors clustered at the industry level. Significance levels are denoted by \*, \*\*, and \*\*\* for 10%, 5%, and 1%, respectively. We define all variables in the appendix.

**Table 14**

Difference in Difference Estimator

VARIABLES	(1) Book leverage	(2) Debt to Equity	(3) Long-term leverage	(4) Short-term leverage
Post	0.0248*** (0.000)	0.1154 (0.141)	0.0146*** (0.000)	0.0099*** (0.001)
Post X GovOwnership	-0.0291*** (0.000)	-0.3149*** (0.002)	-0.0100** (0.035)	-0.0170*** (0.000)
GovOwnership	0.0448*** (0.000)	0.4229*** (0.001)	0.0103* (0.068)	0.0334*** (0.000)
LnGDP per capita	-0.0035 (0.535)	0.2423** (0.013)	-0.0095** (0.032)	0.0047 (0.210)
LnExchange rate	0.0004 (0.665)	0.0104 (0.527)	-0.0011 (0.158)	0.0022*** (0.000)
Tangibility	0.0962*** (0.000)	1.0955*** (0.000)	0.1200*** (0.000)	-0.0220*** (0.000)
Lnassets	-0.0041*** (0.000)	-0.0247** (0.026)	-0.0014*** (0.004)	-0.0025*** (0.000)
ROA	-0.1359*** (0.000)	-1.7291*** (0.000)	-0.0608*** (0.000)	-0.0750*** (0.000)
Market to book	-0.0004* (0.050)	-0.0074** (0.021)	-0.0003** (0.033)	-0.0001 (0.483)
Unemployment	0.0006 (0.425)	0.0240** (0.046)	-0.0010* (0.065)	0.0016*** (0.001)
Inflation	-0.0016*** (0.000)	0.0049 (0.352)	-0.0017*** (0.000)	0.0001 (0.698)
Observations	15,362	15,362	15,362	15,362
R-squared	0.850	0.544	0.794	0.753
Firm FE	YES	YES	YES	YES

This table presents the regression results of DID analysis, in which ownership is a dummy variable equal to 1 if government has at least 10% of ownership in the company and zero otherwise. Post takes on the value of 1 for the fiscal years after 2008 global financial crisis, and zero otherwise. Our sample is 2000-2020. We use the Difference-in-Differences (DID) model to analyse the impact of firm ownership on corporate leverage in the context of foreign aid, the 2008 Accra Agenda for Action (AAA) for foreign aid and the 2008 global financial crisis. We present the DID mathematical model as follows:  $Y(it) = \beta_1 * Post(t) + \beta_2 * GovOwnership(i) + \beta_3 * (Post(t) * Ownership(i)) + X(it)\Gamma + \mu(i) + \varepsilon(it)$ . Where:  $Y(it)$  is the corporate leverage measure.  $Post(t)$  is a dummy variable equal to 1 for years after the 2008 financial crisis, and 0 otherwise.  $GovOwnership(i)$  is a dummy variable equal to 1 if the government has at least 10% of ownership in firm  $i$ , and 0 otherwise.  $Post(t) * Ownership(i)$  is the interaction term to capture the DID estimate.  $\beta_1$  captures the average effect of the post-crisis period on corporate debt.  $\beta_2$  measures the average difference in corporate leverage between government-owned firms and private firms, regardless of the crisis. While  $\beta_3$  is the DID estimator, capturing the additional effect of government ownership on corporate leverage in the post-crisis period.  $X(it)$  is a vector of other control variables.  $\Gamma$  is a vector of coefficients for the control variables.  $M(i)$  is a firm fixed effects to control for unobserved heterogeneity across firms.  $\varepsilon(it)$  is error term. Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1%, respectively. We define all variables in the appendix.

**Table 15**

## Types of Foreign Aid and Choice of Corporate Debt Maturity

VARIABLES	(1) Longterm leverage	(2) Shortterm leverage	(3) Longterm leverage	(4) Shortterm leverage	(5) Longterm leverage	(6) Shortterm leverage	(7) Longterm leverage	(8) Shortterm leverage	(9) Longterm leverage	(10) Shortterm leverage
Total aid	-0.0037*** (0.000)	-0.0003 (0.769)								
<b>PSD aid</b>			<b>0.1868** (0.013)</b>	<b>-0.0236 (0.652)</b>						
Bilateral Aid					-0.0081 (0.137)	0.0025 (0.627)				
Multilateral aid					-0.0684** (0.021)	0.0063 (0.801)				
DAC aid							-0.0036*** (0.000)	-0.0003 (0.775)		
Non DAC aid							-0.2753*** (0.000)	-0.0176 (0.714)		
China Aid									-0.3831*** (0.001)	-0.0407 (0.680)
USA aid									-0.0251 (0.534)	0.0605* (0.087)
France aid									-0.0613*** (0.000)	0.0008 (0.981)
GBR Aid									-0.0327** (0.029)	-0.0006 (0.972)
Observations	15,362	15,362	15,362	15,362	15,362	15,362	15,362	15,362	10,695	10,695
R-squared	0.543	0.503	0.543	0.503	0.543	0.503	0.543	0.503	0.531	0.505
Control Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the regression results examining the different types of foreign aid on the choice of corporate debt maturity. Standard errors clustered at the industry level. Significance levels are denoted by \*, \*\*, and \*\*\* for 10%, 5%, and 1%, respectively. We define all variables in the appendix. Control variables are LnGDP per capita LnExchange rate Tangibility Lnassets ROA Market to book Unemployment and Inflation.

**Table 16**

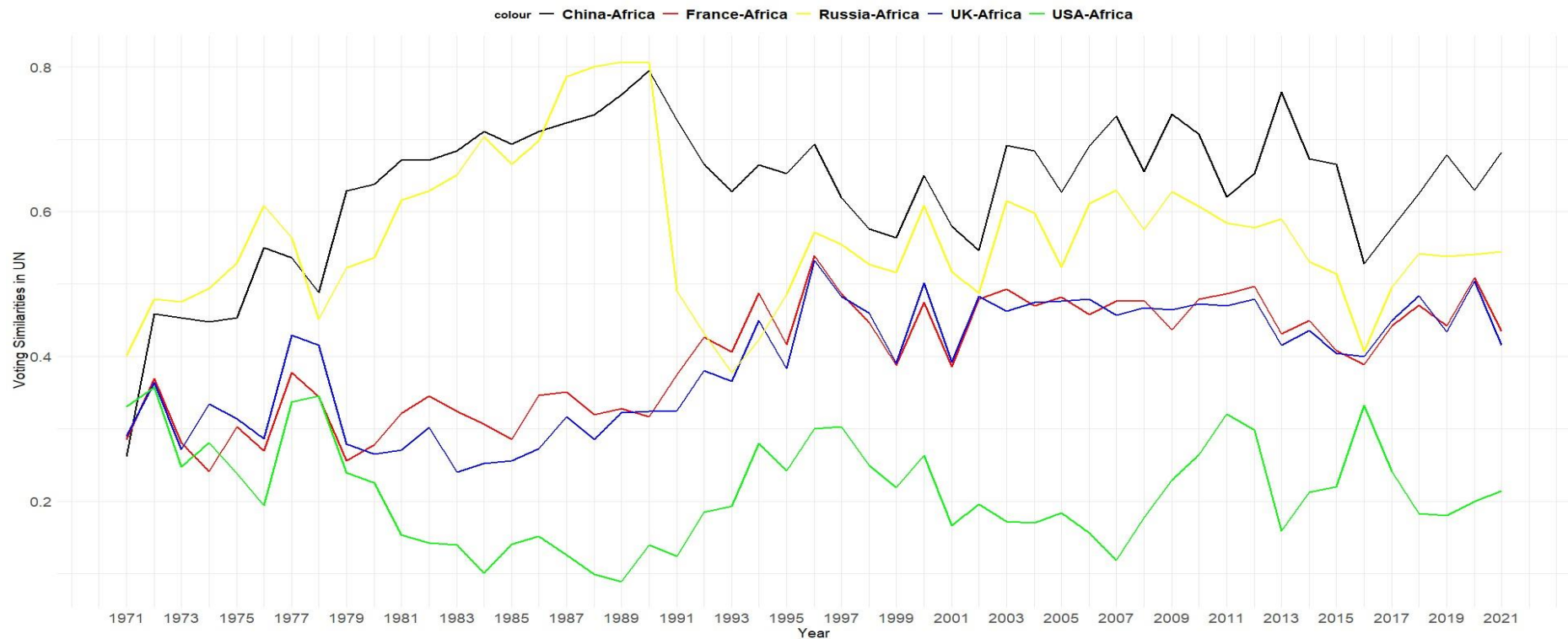
Data Distribution

Country	Number of firms	Number of years	Firm_Year	Min.year	Max.year
Botswana	42	21	351	2000	2020
Cameroon	1	7	7	2013	2019
Côte d'Ivoire	38	20	431	2000	2019
<b>Egypt</b>	<b>323</b>	<b>21</b>	<b>2572</b>	<b>2000</b>	<b>2020</b>
Gabon	1	14	14	2000	2019
Ghana	29	20	263	2000	2019
Kenya	68	21	597	2000	2020
Liberia	6	20	228	2000	2019
Malawi	7	18	84	2002	2019
Mauritius	95	21	816	2000	2020
Morocco	110	21	1133	2000	2020
Namibia	12	21	136	2000	2020
<b>Nigeria</b>	<b>184</b>	<b>21</b>	<b>1242</b>	<b>2000</b>	<b>2020</b>
Rwanda	2	9	14	2009	2019
Senegal	3	14	26	2000	2019
<b>South Africa</b>	<b>548</b>	<b>21</b>	<b>4669</b>	<b>2000</b>	<b>2020</b>
Sudan	1	13	13	2004	2018
Tanzania	14	20	152	2000	2019
Tunisia	105	21	1028	2000	2020
Uganda	6	20	60	2000	2019
Zambia	13	20	94	2000	2019
Zimbabwe	31	18	1432	2000	2018
<b>Total</b>	<b>1639</b>		<b>15362</b>		

Table 13 reports the frequency distribution of 1639 non-financial firms from 22 counties. Max. number of firms represents the maximum number of non-financial firms observed for each country over the sample period of 2000-2020. The number of observations represents the number of firm-year observations in a particular country. Min. year represents the first year of observation in a country while the Max. year represents the last year of observation. Number of years represents the total number of years observed in each country. South Africa, Egypt, and Nigeria have the highest number of firm-year observations.

**Figure 3**

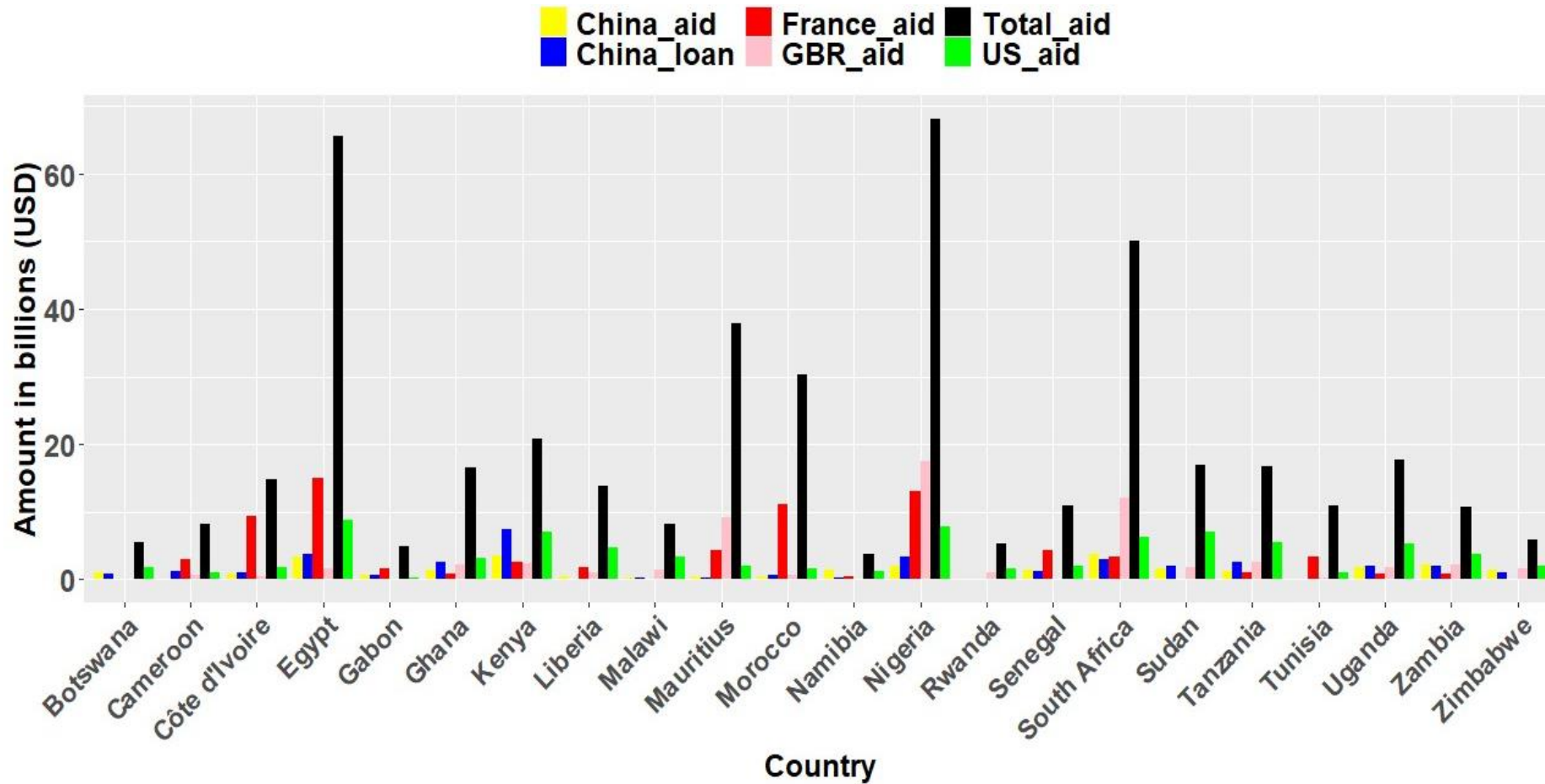
Time series of UNGA voting similarities



The Figure indicates a noticeable trend of increasing voting similarities between African nations and China over time, while the alignment with the USA seems to be decreasing. This shift may be attributed to China's growing economic and infrastructure investments in Africa, combined with its diplomatic strategies that often lack the political conditions that Western nations impose. In contrast, changing US foreign policies, perceptions of conditionality, and evolving global geopolitics might be influencing the reduced alignment between African countries and the USA. "China Africa UNGA Vote similarities" stands for a continuous variable representing the voting preferences of African countries in alignment with China. Similarly, for France, United Kingdom, Russia and USA.

Figure 4

Classification of Aid by Country



The Figure presents the aid flows from China, France, United Kingdom, and United States.

## APPENDICES

**Table 17: Data Sources and definitions**

<b>Firm Variables</b>	<b>Definition</b>	<b>Data Source</b>
Lnassets	Natural log of total book assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
ROA	Operating income (Before depreciation) / Assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Tangibility	Net PPE / Assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Market value of equity	share price*common shares outstanding	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Market value of assets	MVA = Total assets - common equity + Market value of equity	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Market to book	Market value of assets/ Total book assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Total capital	Total debt + common equity	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Total debt	Short-term debt + Long-term debt	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Book leverage	Total debt / Total book assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Market leverage	Total debt / Market Value of Assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Long-term leverage	Long-term debt / Total book assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
Short-term leverage	Short-term debt / Total book assets	Factset, Eikon, and Capital IQ, Annual financial reports of the companies
<b>Macro variables</b>	<b>Definition</b>	<b>Data Source</b>
Total aid to GDP	Total foreign aid flows (% GDP)	Organization for Economic Co-operation and Development (OECD)
DAC aid to GDP	Aid from OECD members of the Development Assistance Committee (DAC)	Organization for Economic Co-operation and Development (OECD)
Non_DAC aid to GDP	Aid from non-OECD members of the Development Assistance Committee (DAC)	Organization for Economic Co-operation and Development (OECD) and aiddata
Multilateral aid	Multilateral aid is provided through organisations (IMF, UN, World bank).	Organization for Economic Co-operation and Development (OECD)
Bilateral aid	Bilateral aid is provided directly from one country to another	Organization for Economic Co-operation and Development (OECD)
Inflation	Inflation, consumer prices (annual %)	World Bank
Nominal exchange rate	Official exchange rate (LCU per US\$)	World Bank
Unemployment	Unemployment refers to the share of the labor force that is without work but available for and seeking employment.	World Bank
LnGDP per capita	The natural log of GDP per capita	World Bank
UNGA vote	United Nations General Assembly voting	Erik Voeten dataset, own calculations
Chief Market-friendly	The Chief Market Friendly indicates chief executive party orientation with respect to economic policy	DPI2020 Database of Political Institutions
Elect year Government	Legislative or executive election in a country i at year t	DPI2020 Database of Political Institutions
effectiveness	Government effectiveness indicates the quality of policy formulation and implementation in the government	World Bank: The Worldwide Governance Indicators
Aid to PSD	Aid to private sector development	Organization for Economic Co-operation and Development (OECD)
Chinese loan	Total Chinese loan in Africa	Chinese Loans to Africa (CLA) Database (Managed by Boston University)