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Beyond the Debt Trap Narrative: Structural Risks and Strategic Choices in Africa–China Infrastructure Partnerships[1]

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Abstract

The Belt and Road Initiative (BRI) – one of China's key foreign strategy of expansion and integration continues to be applauded as well as criticized for a number of reasons including debt-trap diplomacy. Notwithstanding the accusations that China provides loans to developing countries under opaque loan terms intentionally to leverage the strategic national assets or political favours when the debtor country defaults on a loan, African countries continue to turn to China for financial resources. Thus, it is within the lines of reason to not only recognize the agency of African countries who willingly look to China to provide finances for infrastructural development but also evaluate relevant dynamics at play that shape a country's susceptibility to debt-trap diplomacy in order to best understand how to mutually benefit from African-China relations. We analyze factors like level of economic development, Infrastructure quality, quality of political institutions, debt risk, number of troubled transactions, volume of BRI operations, value of construction contracts, and gross revenue of construction contracts that may indicate the likelihood of a country's ability to offset its debts to China in order to not fall prey to the alleged "debt-trap diplomacy". To do this, we study cases of debt-trap diplomacy in Sri Lanka, Pakistan, and Tajikistan. We also evaluate the positions of eight African countries with elevated levels of borrowing from China with respect to the factors that indicate their chances of being prone to falling into the debt trap. After multiple in-depth case studies, Qualitative Comparative Analysis (QCA) is applied as an analytical tool to find a combination of factors like high debt risk, a high volume of troubled transactions, low revenue of infrastructure projects, high levels of corruption and low government accountability that constitute factors impacting the likelihood of a debt trap.

Keywords: *Debt-Trap Diplomacy, Belt and Road Initiative, China-Africa relations, Debt Sustainability, Infrastructure financing*

1. Introduction

As China continues to expand its influence across the African continent, a narrative trailing its engagement is the potential of economic and political exploitation encapsulated in the term "debt-trap diplomacy." The term debt-trap diplomacy as developed by Chellaney (2017) is regarded as a Chinese Foreign policy tool often used to describe predatory lending practices associated with the BRI wherein China provides finances in form of loans to developing countries under shady loan terms, with an intention to leverage strategic national assets or political favours when the debtor country defaults on a loan.

This phenomenon has gained momentous attention not just for its implications on economic autonomy and geopolitical relations but also on national sovereignty. Following United States (US) Secretary of State – Mike Pompeo's accusation of China of using Debt-trap diplomacy in 2019, the BRI has come under considerable criticism particularly for its general lack of transparency and its support for undemocratic and authoritarian states (Brands, 2018; Schaffar, 2020; Rasheed, 2022) in developing countries. Nonetheless, given China's continuous investments across Africa, it is pertinent to understand the institutional and socio-economic factors that increase the risk of falling prey to debt-trap diplomacy or enhance its chances of benefitting from the BRI. Thus, the key research question guiding this paper is: What socioeconomic and institutional factors enhance or mitigate the susceptibility of African countries to Chinese debt-trap diplomacy, especially within the context of the BRI? We seek to primarily argue that a nuanced evaluation of the interplay of several factors like governance structures, economic institutions and so on is essential for understanding the dynamics of African-China relations instead of the simplistic portrayal of China's exploitation of African countries as suggested under the context of debt-trap diplomacy.

With Africa playing a key role in China's global strategy via the BRI, several scholars (Taylor & Zajontz, 2020; Liu et al, 2020; Kalu et al, 2022; Chiyemura et al, 2023; Brown, 2023) have highlighted its potential to stimulate economic development via large-scale infrastructural projects in the region but have also raised concerns about the abilities of participating countries to sustain the debts incurred in the process. It is worth underscoring that many African countries have in recent times turned to China instead of western financiers and International Financial Institutions for financial aids and investments to address vital infrastructural deficits given the seemingly less complicated and easy process of obtaining loans from China. With Chinese firms accounting for about 16 per cent of construction FDIs in the continent (Statista, 2024), development programmes and huge infrastructural projects provide a channel for substantial capital injection. In 2023 alone, African countries were estimated to have received over USD 21 billion in BRI projects (De Kluiver, 2024). Thus, African governments' decisions to participate in the BRI should be studied through the context of its agency and domestic institutional capacities amongst other factors.

This article aims to identify the combinations of factors indicative for countries that are prone to debt trap diplomacy under the BRI. To achieve the research goal of this paper, we combine in-depth case studies of well-known cases of "alleged" debt-trap diplomacy in Sri Lanka, Pakistan and Tajikistan. Following this, we conduct a QCA of eight African countries with substantial debt exposure to China in order to comprehensively examine the factors that may predispose them to debt vulnerability.

The novelty of this paper lies in its focus on the contextual factors that influence African countries' engagements with China. While the extant literature extensively discusses the risks connected with the BRI in general, and debt-trap diplomacy as a strategic tool of Chinese foreign policy, little attention has been given to the internal factors at play in African countries that impact their susceptibility to such unfavourable outcomes. In addition, this work aims to contribute to the knowledge on the importance of economic resilience and structural governance issues in addressing excessive external borrowing which is prevalent in many African countries. Moreover, since African countries continue to seek financial aids from China, this paper may serve to be useful in risk assessment strategies and to inform policy decisions on how to effectively benefit from economic partnerships with China.

2. Theoretical Framework

Our theoretical model consists of theories that serve to explain factors leading to debt trap diplomacy. First as asserted by Sutherand et al (2020), countries with an elevated level of institutional fragility are considered as very risky for foreign direct investments (FDIs). When political accountability, the state and the rule of law are non-complementary, political institutions become weakened or ceases to function, thus leading to institutional ineffectiveness (Fukuyama, 2014). Under such conditions of institutional inefficiencies and ineffectiveness, institutional friction is bound to impede not only political and social processes but economic functioning as well. Similarly, Acemoglu and Robinson's (2013) extractive institutions embodies institutional deficiencies that inhibit political and economic progress. Under extractive institutions, vices like corruption, lack of transparency, restricted human rights, poor regulatory mechanisms, lack of political accountability and weak governance structures become prevalent which makes a country vulnerable to debt-trap. In addition to institutional weaknesses, countries can become economically vulnerable when they are often lured into borrowing from developed countries or international financial institutions under the guise of necessary development (Stiglitz, 2002) which then leads to unsustainable levels of debt. As a con of globalization, Stiglitz argues that developing countries who are reliant on foreign aids or loans to facilitate development in their countries are often subject to unfavourable loan conditionalities and can be exploited due to information asymmetries inherent in such processes that overtime cause them to become debt vulnerable. Given this, developing countries with a high debt burden are at a higher risk of falling prey to debt-trap diplomacy under the BRI.

Some African countries are regarded (Kunawotor et al, 2020; Asongu & Nnanna, 2020; Horn et al, 2023) as having weak institutions with elevated levels of political instability, high levels of corruption, low government accountability, restricted freedoms and impediments to human rights. It is therefore to be assumed that these drawbacks would negatively impact the efficient use of financial loans obtained from China leading to mismanagement of BRI projects and low revenue from projects, thus rendering the countries incapable of servicing their debts. We opine that a combination of factors like high debt risk, a high volume of troubled transactions, low revenue of infrastructure projects, elevated levels of corruption and low government accountability that are associated with weak institutions rather than individual factors alone, determines the outcome of debt-trap.

3. Methodology

This work adopts a mixed methodological approach, combining multiple case studies and QCA to examine the factors likely to lead to debt-trap diplomacy within the context of the Belt and Road Initiative. Our sample includes a total of 11 countries - 8 African countries selected based on their high share of borrowing from China (Djibouti, Kenya, Zambia, Ethiopia, Cameroon, Angola, Nigeria and South Africa) and 3 countries with cases of alleged debt trap diplomacy (Sri-lanka, Tajikistan and Pakistan) to serve as comparative cases. The countries with cases of debt trap are the control group while the African countries are analyzed for key factors that may lead to the outcome of a debt trap.

The key dependent variable in this paper is the likelihood of the occurrence of a debt trap whilst the independent variables consist of a range of factors indicating susceptibility to debt trap diplomacy. Following our theoretical framework, these factors within the context of this study includes; *(i)* Level of economic development, measured by gross national income (GNI); *(ii)* Infrastructure quality; *(iii)* Quality of political institutions, measured by Voice and accountability Index; *(iv)* Debt risk, measured by Debt-to-gross domestic product (GDP) ratio; *(v)* Number of Troubled transactions; *(vi)* Volume of BRI operations; *(vii)* Value of Construction Contracts ; and *(viii)* Gross revenue of construction contracts.

The use of case-study as a qualitative research method allows for an in-depth investigation of phenomena within its real-life context, thereby enabling us to examine underlying factors impacting the emergence of the likelihood of a debt-trap, as well as a nuanced understanding of the dynamics and processes at play. Further, we employ QCA – an analytical technique that combines qualitative and quantitative approaches using Boolean algebra, to identify what conditions that may lead to a specific outcome. QCA is best suited in this study as it facilitates a systematic comparison of multiple cases whilst considering their varying complexities and details.

We sourced secondary data from reliable databases. Observational data on GNI, infrastructure quality, and voice and accountability index are gotten from the World Bank's Development Indicators Database. Debt-to-GDP is sourced from the International Monetary Fund's Economic Outlook database. Data on value of Construction Contracts, BRI projects, Troubled Transactions and revenues are sourced from American Enterprise Institute's China Global Investment Tracker. We use time series data covering the period of 2013-2018 to analyze BRI projects, Troubled Transactions, and revenues while cross-sectional data was collected for GNI, Debt-to-GDP, infrastructure quality, and Voice and Accountability Index.

In our study, we used the mean value of the empirical data as the threshold *(the data is provided below)*. The QCA method allows entering variables in different measurement formats into the model, as well as manual coding of variables in cases where this is necessary for the correct representations of data with a heterogeneous distribution within the segment being studied. The study also used csQCA with a dichotomized data format, where coding "1" does not mean the presence of an indicator as such, but an increased value within the data array for this indicator or in relation to a specific case under study. Accordingly, "0" does not mean the absence of an indicator, but its lower value within the study.

4. China–Africa Relations and Belt and Road Initiative

The current Non-intervention policy in China's provision of loans and aids to the African continent has made them very favorable in the eyes of the African leaders. This is in line with China's interest in Africa which it is actively pursuing via development assistance as a particularly important instrument. This "no-string-attached" policy differs from that of monetary donors such as the International Monetary Fund, European Union, and other international institutions which tend to link development aid to the promotion of political transparency, food governance and human rights protection in the African countries. It is therefore not surprising that China's contributions to the infrastructure of African countries have been highly praised by their leaders, highlighting visible improvements that contribute to the expansion of economic activity, job creation for local workers, and tangible improvements to bridges, roads, rails and other transportation networks, all of which benefit ordinary citizens (Hanauer & Morris, 2014, Chiyemura et al, 2023). However, Chinese investment on the continent has also been criticized as being opportunistic (Kalu et al, 2022; Chiyemura et al, 2023; Brown, 2023).

In 2013, President Xi Jinping introduced the Silk Road Economic Belt and the 21st Century Maritime Silk Road, then commonly known as the One Belt One Road Initiative. Now, BRI involves 152 countries and international organizations in Asia, Europe, Africa, the Middle East, and the Americas. The project also includes a series of "pearls" along the Indian Ocean. The BRI development strategy seeks to build connectivity through six major economic corridors based on the geographic location to the Maritime Silk Road. These corridors are China-Pakistan, New Eurasia Land Bridge, China-Mongolia-Russia, China-Indochina Peninsula, Bangladesh-China-India-Myanmar, China-Central Asia-West Asia (HKU Data Repository, 2022). Countries not located along these corridors are also welcome to join the initiative by becoming a signatory country with China. The Signatory countries are mostly African and Latin-American countries (IISS, 2022). Under the BRI, infrastructure development would be primarily funded by foreign direct investment and low-interest rate loans with a long shelf life before repayment. On the long run, the BRI is expected to help create markets for China's products and foster cost-effective trading with countries.

Studies (Ehizuelen and Abdi, 2018; Dumor & Yao, 2019; Lisinge, 2020) show that the BRI has the potential to significantly improve trade, increase foreign investment, improve the quality of life and living standards, and lift millions out of poverty in China and participating countries especially along the corridors, focusing on policy reforms that expand trade, increase transparency, address social-environmental risks and improve debt sustainability. Transportation along the corridor will help reduce time on travelling by at least 12 per cent and increase investments and trade by 2.8 per cent to 9.7 per cent for the corridor countries and 1.7 per cent to 6.2 per cent for other participating countries (Zhao, 2021). As a result of the transport networks, low-income countries would see an increase in FDI inflows which could boost income in the country and consequently reducing poverty levels.

4.1 Debt-Trap Diplomacy

The term debt-trap diplomacy first appeared in the mainstream media in 2017 when an Indian professor of Strategic Studies at the New Delhi-based Centre for Policy Research (Chellaney, 2017) used it to describe an alleged motive of China's Belt and Road Initiative. Brahma Chellaney's (2017) analysis and the use of the term "debt-trap diplomacy" has since gained much recognition and other commentators have adopted the term especially Western media to warn African and Asian countries to desist from falling into China's "debt trap" disguised as well-intentioned diplomacy and a win-win foreign policy as President Xi Jin Ping often claims.

A broad definition of debt-trap diplomacy is a type of diplomacy between countries in which the creditor country deliberately extends excessive credit to the debtor country with the alleged intention of extracting economic or political concessions when the debtor country is unable to service its debt obligations (often asset-based lending) (Fredmond, 2020). China has been accused of practicing debt trap diplomacy through its Belt and Road initiative, in which it continually extends excessive loans to poorer less developed countries who could never realistically pay it off and at the same time, using geopolitical and strategic natural resources as concessionary collaterals.

Sri Lanka seems to be the main case around which the discourse on debt-trap diplomacy has ensued even though given the broad definition, other cases like Tajikistan, Pakistan, Laos etc. can be included. We propose a definition of debt-trap diplomacy slightly different from the above-stated ones but relatively the same since they carry the same underlying connotation of taking over a country's national asset. To this end, we provide several criteria along which we can qualify a phenomenon as "Debt trap diplomacy" following Fredmond's (2020) definition of debt-trap diplomacy.

- When a debtor country is led into a cycle of reborrowing or rolling over its loans due to the inability to make the scheduled payments when due.
- When a country's strategic national asset is taken over and controlled by a creditor country in the event of defaulting on a loan.
- When a creditor country provides financial assistance to another country on the condition that it exerts political, military, and economic influence over the debtor's domestic and international affairs.
- When a creditor country provides financing for a project in another country and a state-owned enterprise of the creditor country assumes 90 per cent or more management control.

The above criteria are interrelated and cannot be stand-alone reasons for qualifying a phenomenon as debt trap diplomacy. The cases of debt-trap diplomacy in our sample meet at least two of the given criteria. While some cases meet all three of the criteria, meeting at least two of the criteria is an indication that a country might be susceptible to a debt-trap since some cases covering repayment of loans for instance are yet to reach their maturity thus enabling us to observe and analyze the responses of the creditor country.

4.2 Phases of the Debt-Trap Diplomacy Cycle under the BRI

Sam Parker and Gabrielle Chefitz of the Belfer Center for Science and International Affairs at Harvard Kennedy School, identify stages and patterns that can lead to the debt trap diplomacy cycles (Parker & Chefitz, 2018).

The Contract phase. Under the Belt and Road Initiative, China primarily works with the EXIM (Export-Import) Bank of China and China Development Bank to finance infrastructure development projects along the Silk Road corridors and in signatory countries. The terms of the loans have attractive features such as longer-term loan periods than other Institutions (especially Western Institutions), extended grace periods and less bureaucratic procedures. This is a double-edged sword because, on the one hand, it appeals to fragile economies and low-income countries that find it difficult to access financial assistance from international financial institutions. On the other hand, the easy access to financial assistance allows corrupt leaders to misappropriate funds for private interests. Another element of this phase is the lack of adequate research to determine the economic viability of proposed projects. Most politicians readily sign contracts and financial agreements for projects without a clear understanding of the projects, the economic viability, and the productivity of such commitments. Most do not care because they would be out of office before the bill comes due and they would not be responsible for the failure of such projects.

The construction and operation phase. Several elements in this phase contribute to the poor management of projects and inefficient construction of infrastructures which in turn affects the quality of the project and curtails the estimated potential benefits. Problems related to the construction usually include budget overruns, mediocre quality of construction, poor supervision of workers leading to very lax safety standards. During operation, most of these projects fail to yield expected returns to offset the cost of construction and make a profit. In Sri Lanka and Laos for example, there have been protests over failure to create jobs for locals as Chinese nationals are mostly employed to run the facilities, worsening environmental conditions such as pollution, concerns of projects prioritizing Chinese interests, compromise state sovereignty or exasperating corruption. In some cases, public pressure led governments to freeze or cancel Chinese contracts.

The debt collection phase. The debt collection phase is the most controversial part because it is the anchor of the debt trap diplomacy claims. How China deals with failures to service debts is what people point to when making accusations of debt-trap diplomacy against China. In most cases, when a country is unable to pay back their debts, China extends the grace period and offers debt forgiveness in exchange for control over strategically located assets, some form of economic concession and political influence.

5. Cases and Variable for QCA Analysis

The following variables (factors) were selected for QCA analysis:

Economic development. According to Amartya Sen (2014), development is about creating freedom for people and removing obstacles to greater freedom. Barriers to freedom, and hence to development, include poverty, lack of economic opportunity, corruption, poor governance, lack of education and lack of health. The Belt and Road initiative targets developing and underdeveloped countries. Middle-income to low-income countries in terms of GNI per capita in Asia, Africa, Latin America, and the corridor countries receive the bulk of the BRI funding. We use the Atlas method of the GNI per capita as a measure of economic development. While we recognize that GNI per capita may not completely reflect a measure of welfare or level of development, GNI per capita has been shown to be closely correlated with other measures of development like the quality of life, school enrollment, access to health care etc. The World Bank classifies the countries of the world into 4 categories – Low income (less than USD 1026), Lower middle income (USD 1026 – 3995), Upper middle income (USD 3996 – 12375), and High income (> 12375). The threshold for the economic development variable in our analysis is set at the mean value of USD 2464. Countries above this amount are assigned "1" which means "fully in" or "0" which means fully out. All the countries in our sample are developing countries and fall into the middle-income category except Ethiopia which falls into the low-income category and is classified as least developed countries. The sizable proportion of countries borrowing excessively from China are either developing or underdeveloped countries with inefficient institutions, dependence on commodity exports, low standards of living etc. They tend to look to China for financial assistance to build structures to improve living conditions and stimulate economic growth.

Infrastructure. China's BRI aims at promoting infrastructure development to boost transportation connectivity, trade facilitation, capital flow and so on. The bulk of China's loans and investments has been to less developed countries with limited infrastructure development capabilities. These investments are mostly concentrated in the energy and transport sectors. In Sri-Lanka, China has been a major player in post-war Sri Lanka's infrastructure development. Among the main Chinese projects is the USD 1 billion Hambantota Development Zone, Railway construction for the Djibouti-Addis Ababa route in Ethiopia estimated at USD 1.3 billion, Angola Caculo-Cabaca Hydropower Project estimated at USD 4.5 billion, Uganda's Karuma hydropower station estimated at USD 1.4 billion and several railways and road constructions across the continent. To measure infrastructure, we extract infrastructure from the weighted average of the Logistics Performance Index (LPI) compiled by the World Bank. The LPI ranks countries on six dimensions one of which is the quality of trade and transport-related infrastructure (e.g., ports, railroads, roads, information technology). Our threshold for the infrastructure variable is the mean value of countries in our sample which is 2.465 on a 5 point scale with 5 being highly developed infrastructure and 0 being very poor infrastructures. Countries with a score above 2.465 are assigned "1" and countries below 2.465 are assigned "0". We observe that the majority of the countries in our sample are above the 2.465 threshold. Even though most of the observed countries are above this threshold, they only manage to do so marginally. This tells us that the level of infrastructure is either fairly or poorly developed. Africa is in dire need of infrastructure and requires an estimated USD 130-170 billion a year (estimated by African development bank –AFDB) to bring up its infrastructures to relatively developed standards. China is the largest financier of infrastructure projects in the continent mainly due to its minimal loan requirements. The lack of infrastructure in Africa, combined with minimal requirements for Chinese loans can explain African countries' gravitation to China for financial aids especially with an expressed desire on the part of China to bridge the infrastructural gap which is mutually beneficial.

Voice Accountability index. The political regime under practice in any country can enable us to understand the procedural nature and accountability of such governments per the bilateral agreements they enter with other countries. The more democratic a country is, the greater its legitimacy and accountability afforded to its people. Countries with low levels of transparency within the government administration are less accountable with how funds are used to build infrastructure (Sohail and Cavill, 2008; Iyoha and Oyerinde, 2010). Less accountability and less transparency, which are synonymous with less democratic regimes, increase the risk of mismanagement and misappropriation. As a measure of accountability, we use the voice and accountability index, a dimension of the aggregate World Governance Index. The voice and accountability index reflects perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and free media. The scale ranges between – 2.5 to 2.5 where -2.5 is approximately weak and 2.5 is approximately strong. The threshold for this variable is the mean value of countries in our sample which is -0.71 Countries below -0.71 are assigned "0" and countries above are assigned "1". Overall, we observe that the majority of the countries in our sample are well below this threshold. To some extent, this reflects the extremely low level of government accountability and transparency. This is also related to corruption. The levels of corruption associated with each country can in a way enable us to see why some of these countries are not able to pay back their debts within the given timeframe due to the misappropriation of the funds lent to them. Countries, where alleged cases of debt trap diplomacy have occurred, are known to have elevated levels of corruption.

Debt risk. Countries typically incur debt as a way to raise funds to invest in their economic growth without raising taxes. If used properly, public debt can allow the government to build infrastructures, invest in education and so on thereby improving the standard of living of a country's citizens. The level debt risk of a country is measured by comparing it to the total economic output (GDP). We use the debt-to-GDP ratio as a metric to determine the debt risk of the countries in our sample, which also indicates how likely a country can pay off its debt. According to the World Bank, the critical point of public debt is at 77 per cent. At this tipping point, a country is considered to have high debt risk. The threshold for the debt-to-GDP ratio within our analysis is thereby set at 77 per cent. Countries with a debt-to-GDP ratio lower than 77 per cent are assigned "0" and countries above are assigned "1" indicating high debt risk. While most of the countries observed can be regarded as a low-average risk, countries like Angola and the Congo Republic are significantly substantial risk and this might affect their abilities to pay back the loan. High probabilities of defaulting on loans may indicate that they have given up an economic asset or some sort of political influence.

Troubled transactions. These are investment transactions that involved funding from the Chinese government but did not close for one reason or another. They mostly include funding on infrastructure development. The higher the amount sunk into a project that has minimal prospects of being recovered, the higher the debt accumulation and debt book progression. Based on data sourced from the American Enterprise Institute's China Global investment tracker, the figures represent the estimated accumulated sum within the years 2013-2018 quoted in millions of US dollars. Pakistan has the highest value of the controversial transaction, followed by Ethiopia. We find that the majority of the countries do not have recordings of troubled transactions but a significant number of countries do. Countries that have any amount of troubled transactions are assigned "1" and countries that don't have any are assigned a "0".

Volume of operations. American Enterprise Institute's China Global investment trackers were used to analyze this variable. Projects under the BRI mainly include infrastructure development in transportation, mining, energy sector and IT and communications. According to the BRI website, many of the BRI branded projects already started before 2013 (when the BRI came into force) but they have gained momentum under the BRI. Pakistan has the largest number of BRI projects. The mean value of 18.3 is used as a threshold. Countries with BRI projects above this threshold receive "1" and countries below receive "0". The number of BRI projects in a country is significant and increases the risk of falling into the debt trap. This is because a higher number of projects means higher loan amounts given the riskiness of each project and a high number of projects means increased risks.

Value of Construction contracts. As the name implies, these are the amounts allocated for infrastructure projects. The figures for each country are quoted in millions of US dollars and represent accumulated estimated cost figures from 2013-2018. The mean value of USD 8263.33 million is used as the threshold. Countries with values above this amount are assigned a "1" and countries below this amount are assigned a "0".

Gross revenue of construction contracts. This represents the number of revenues from construction projects evaluated in the variable "construction contracts." For our control groups (Sri Lanka, Pakistan, and Tajikistan) we assigned "0" due to the absence of data. Overall, we find that for the majority of countries in our sample for which data are available, gross revenues are higher than contract costs. The mean value is once again used as the threshold for coding. Countries with revenues higher than USD 10.2 billion are assigned "1" and countries below this figure "0". If a country can break even and generate revenue to cover its costs, it means that it is less likely to be in debt trap and shows that the investment in the projects is actually productive.

Regarding the cases for the QCA analysis procedure, 11 countries were selected including 8 African countries analyzed for key factors that may lead to the outcome of the debt trap and three countries with cases of debt trap as the control group. Let us take a closer look at each of the cases.

Djibouti

Djibouti is home to China's only overseas military base. The latest International Monetary Fund (IMF) assessment highlights the highly risky nature of Djibouti's borrowing system (IMF, 2019). Much of the debt is government-guaranteed public enterprise debts and is owed to China Exim Bank. According to Lendon (2018), China has provided about USD 1.4 billion for Djibouti's major investment projects, which is approximately 75 per cent of Djibouti's GDP. Future projects reportedly include a new port, two new airports, a toll road and an oil terminal. While some Chinese debt has been offered at below-market rates, which may likely reduce the risk of default, others, such as the financing for the Addis Ababa–Djibouti railway, are reported to be approximately at commercial rates (Lendon, 2018). Despite the International Monetary Fund's cautions, there is no indication that new financing will be limited to projects that generate enough revenue to meet debt service criteria.

Kenya

Kenya's total public debt is currently about USD 60 billion, about 60 per cent of its GDP. China is Kenya's largest bilateral lender, accounting for nearly 72 per cent of all its external debts (Vines, 2023). In December 2019, Kenya launched a freight service on a new extension of a Chinese-built railway line at a cost of billions of dollars. The new service runs from Kenya's capital, Nairobi, to the Naivasha Inland Container Depot and is part of the greater Standard Gauge Railway (SGR), connecting Nairobi to Mombasa, Kenya—the largest and most important port in East Africa. Kenya has accepted more than USD 5 billion from China for the construction of the SGR since 2013, making it the largest infrastructure project since the country's independence (Otele, 2022). However, in its first year of operation, the project reported losses equivalent to USD 98 million, rendering Kenya's servicing of the loans unsustainable and unmanageable (Flurry, 2019). Critics say that the SGR is unlikely to turn a profit, as trucking remains a cheaper option for most freight.

Zambia

Zambia's borrowing from Chinese sources has increased in recent years. The Zambian government reported a whopping 9.4 billion USD of external debt in June 2018, which represents 34.7 per cent of its GDP; up from USD 1.9 billion at the end of 2011, or 8.4 per cent of GDP, it reached about 2.3 billion USD at the end of 2017 according to official sources. The country's external debt-to-GDP ratio is estimated at 119 per cent in 2022 (World Economics, 2022), while the country has defaulted on a couple of loans in 2019 and even more in 2020 given the constrictions of the COVID pandemic. Zambian GDP has halved over the past three years, the kwacha currency has depreciated by almost 17 per cent against the US dollar over the past year, and inflation is running at almost 10 per cent. The main creditor is China's EXIM Bank. Other loans have come from the China Development Bank and China National Aero-Technology Import & Export Corporation (CATEC). In 2018, it was widely speculated that Zambia were in talks with China over a possible takeover of the country's electricity company, ZESCO, after defaulting on loan repayments (Ajetunmobi, 2018). While the company is currently under the management of the Zambian government, it is suspected that Zambia's growing debt to China may present similar opportunities, with China actively involved in discussions to restructure Zambia's debt (Sinyangwe, 2022).

Ethiopia

Ethiopia has been a major beneficiary of Chinese investment. In Ethiopia, China financed the 475 million USD light railway system in the capital and USD 86 million ring road. Since 2000, China has financed other key infrastructure too, helping to add more than 50,000km of new roads. China also built the 750km Ethiopia-Djibouti Railway, at a cost of USD 3.4 billion, which opened in 2016. China's Exim Bank provided about 70 per cent of the funding (TheDiplomat.com, 2018). In 2017, a McKinsey report (Jayaram et al., 2017) showed that the growth in Chinese investment in Ethiopia has been uniformly high, at an average growth rate of more than 52 per cent a year. To pay for all of these major developments, Ethiopia has taken out more loans from China, with state policy banks extending it to more than USD 12.1 billion since 2000, according to the China Africa Research Initiative at Johns Hopkins University (CARI, 2020). The Horn of Africa has accumulated tens of billions of dollars in debt, with reports suggesting that nearly half of Ethiopia's foreign debt is owed to China, with public debt standing at 59 per cent. In September 2018, the president of Ethiopia reached an agreement with China to restructure the repayment period of loans from 10 to 30 years (Runsewe, 2018). As a result, Ethiopians are wary of future loans from China, as lenders are likely to take collateral in the form of resources and possibly some form of land.

Cameroon

Cameroon's total debt is about USD 10 billion, of which nearly a third is owed to China, according to the IMF. In 2019, China wrote off a chunk of Cameroon's debt, the debt was worth USD 78.4 million (CGTN Africa, 2019). Since the turn of the century, China has provided debt relief to Cameroon: In 2001, it canceled USD 34 million in debt, in 2007, it forgave another USD 32 million, and in 2010, USD 30 million was cancelled (CGTN Africa, 2019). In 2011, China agreed to build and finance a new port in the fishing town of Kribi. Cameroon's existing port of Douala was overworked, run down, and restricted by its location. When completed in 2035, Kribi Port will be the biggest deep-water port in the region. It will handle exports of Cameroon's iron ore, bauxite and other minerals and could serve the Chad-Cameroon Petroleum Development and Pipeline Project, which pumps oil from landlocked Chad. The first two phases of the project will cost USD 1.2 billion and will be constructed by China Harbor Engineering Company. In addition, CHEC has promised to develop a railway to an iron ore deposit and is building a USD 436 million motorway to link the new port with Douala. The Kribi port will also extend the reach in West Africa of China's Maritime Silk Road, an initiative that Senegal signed on to in 2018 (Marsh, 2019). It is an important part of China's massive, multinational One Belt One Road economic development plan. China's activities in Cameroon are not limited to the new port: As of 2014, it was responsible for 90 per cent of the country's road construction and rehabilitation, and Chinese companies have built hydropower plants and dams there.

Angola

Since 2002, after the end of Angola's civil war, China has played a key role in rebuilding the country by building railways, hospitals, roads, and schools. (Brock & Joe, 2015) China has loaned to Angola over USD 60 billion since the two countries established diplomatic relations in 1983. At the end of 2017, Angola's debt to China stood at USD 21.5 billion – about half of its external debt. Many Angolans are reportedly wary of their country's partnership with China, in part because oil repayments for debt leave Angola with little crude oil to export to global markets – one reason for the country's liquidity crisis. As of February 2018, Angola's reported foreign exchange reserves stood at USD 12.8 billion, slightly more than a third of what they were in 2013 (Chazan, 2018). Chinese debt repayments are believed to be linked to the price of oil at the time they are negotiated, so Angola has to export more crude oil when its value falls. Repayment has become increasingly difficult as Angolan production has slumped in recent years due to declining investment in the country's aging offshore fields, and the fall in the price of oil has made extraction less profitable.

Nigeria

Loans from China account for 80 per cent of all bilateral loans to Nigeria, according to data from the country's Debt Management Office (DMO, 2020). China provides loans to build power plants, airports, and railways, helping to bridge a huge infrastructure gap in Africa's largest oil producer. But loans from China account for only 8.5 per cent of Nigeria's total debt stock of about USD 81 billion. Since 2002, Nigeria has received 17 Chinese loans to finance projects in various sectors. The transportation and information and communications technology (ICT) sectors have six projects each financed by loans from the Chinese bank, while the power, agriculture and water sectors have three and two projects, respectively, tied to Chinese debt. *"Most of the funds given out go back to them by way of supplies, construction contracts with all the equipment brought over from China itself"* states Obadiah Mailafiya, a former Deputy Governor of Nigeria's Central Bank, who played a major role in Nigeria's debt relief negotiations with the Paris Club of public creditors in 2005 (Guardian News, 2019). *"The Chinese come into places where nobody wants to go," due to the Western media's painting of Africa as "a continent of poverty, disease and chaos,"* Obadiah Mailafiya said. *"That makes it difficult for African countries to go into the euro/dollar markets to source for loans and financing,"* he added in an interview with a media outlet (Guardian News, 2019). For the Nigerian banker, who is also a former official of the African Development Bank, all the Chinese need is for you to show them where the road or the dam is to be constructed and they get on with it, the EXIM Development Bank of China standing by, to provide necessary money. Obadiah Mailafiya encourages African governments to make sure that they read the small key points of the "conditionalities" defined by the Chinese. In his view, this would prevent China from laying claim to some of their assets, as it is doing in Kenya and Zambia. Mailafiya also shares "very worrying" allegations, which he says are "hard to prove", that the Nigerian government has pledged some oil fields as collateral for the Chinese loans (Guardian News, 2019).

South Africa

From 2000 to 2017, China provided loans to the tune of USD 3.7 billion to South Africa. According to the South African Reserve Bank's September 2017 quarterly bulletin, government debt reported in June 2017 was 51.6 per cent of GDP, up from 47.8 per cent recorded the previous year. Since 2017, the state of South Africa's government debt has become a major issue in Parliament and the country as a whole. In 2018, the issues surrounding the national debt began to scare away international traders. Former President Jacob Zuma had used debt to fund social programs without raising taxes. However, this policy has become unsustainable. Although South Africa's debt-to-GDP ratio is relatively modest, the government has to offer high-interest rates to attract traders to its bonds. As a result of high interest rates and the government's debt expansion, interest payments rose from South African Rand (ZAR) 57 billion in 2010 to ZAR 162 billion in the first quarter of 2018. This means that the government had to spend about 13 per cent of its revenue on interest payments in 2018. In September 2018, President Ramaphosa visited China on official business. The visit followed Chinese President Xi Jinping's visit to South Africa, during which the two countries signed many bilateral agreements, including a ZAR 33.4 billion loan from the Chinese Development Bank (South African Government, 2018). As for another loan of ZAR 370 billion received in 2018, supposedly for an economic stimulus package, the government refuses to provide any details about it - not the currency, interest rates, what it will be spent on, repayment period, etc. Adding to the obscureness is that government officials have repeatedly called the ZAR 370 billion 'a gift'.

Republic of Congo

As of 2018, Congo's external debt stood at USD 5.8 billion, according to data from Trading Economics (Trading Economics, 2020). The country owes nearly USD 9 billion to Chinese state-owned enterprises and other creditors. Since March 2017, the government has been trying to get help from the IMF to revive an economy that barely grew in 2018 after declining in the previous two years due to falling oil prices. About 34 per cent of Congo's foreign debt is owed to China. A report from the French Embassy in Congo from February 2018 quoted the Finance Ministry and put Congo's foreign debt to China at USD 2.7 billion (SCMP, 2019). The IMF said in November 2018 that Congo needed to take a number of measures before the lender would agree to a bailout, including reforms to improve governance and transparency and adjustments to the state budget. It also demanded "explicit financing assurances" from creditors, including debt relief, before considering a bailout (Bavier, 2017). In April 2019, China agreed to restructure debt owed by the Republic of Congo. Under terms of the restructuring deal, the repayment of Central African Franc (CFA Franc) 944 billion will be extended an additional 15 years. Congo, however, must pay off a third of that amount by the end of 2021 and China will not reduce the amount of principal owed. Later in 2019, the IMF approved a bailout worth nearly USD 449 million for OPEC member Congo Republic on, potentially setting a precedent for other nations struggling under the weight of large debts to China.

6. Results of the analysis

The empirical data for the analysis of the variables were taken from World Bank sources (Economic development-GNI, dept-to-GDP ratio), Logistics performance index (Infrastructure), World governance index (voice index), American Enterprise Institute's China Global investment tracker (troubled transactions, quantity of operations, construction contracts). We used data from IMF, World Bank, analytical reports, and databases as well as academic literature to conduct a case study of the particular countries under research.

Debt risk of countries is usually evaluated by considering variables such as debt service ratio, export fluctuations, imports/GNP ratio, debt-GDP ratio, per capita GNP, growth of exports, growth rate (Suter, 2019; Saini and Bates, 1984), political instability and institutional efficiencies, inflation (Balkan, 1992; Ahuja et al 2017). While these variables are important for understanding overall country risks, they do not sufficiently offer an in-depth understanding of the tendencies towards debt trap especially under the conditions of Chinese bilateral loans and the BRI. Since Chinese loans are specifically obtained for capital projects intended to become profitable enough to offset the debts, we consider indicators that directly influences the progress or the lack of progress towards this goal.

The dependent variable (outcome) is debt trap and the independent variables include factors that are indicative of a country being prone to fall into the debt-trap diplomacy (economic development, infrastructure, voice accountability index, debt risk, troubles transactions, the quantity of operations, construction contracts and gross revenue of construction contracts) (See Table 1). In accordance with the established threshold values, data processing in QCA allowed us to arrive at a dichotomized data table *(see data table provided at the end of this article)* suitable for further analysis by csQCA (crisp set QCA, operating within the framework of Boolean algebra).

6.1 Major Findings

The possibility of a debt trap can arise when there is a high debt risk, low quality and returns on infrastructure projects with the presence of troubled transactions.

The analysis of the results obtained from the Tosmana QCA software indicates that the critical factors that can lead to debt trap are a combination of high debt-risk and low quality of physical infrastructure in contrast with considerable amounts of construction contracts without the possibility of attaining enough revenue to pay for their debts. This combination of factors leading to debt trap was positive for all our control countries, i.e., Sri Lanka, Pakistan, and Tajikistan. Another combination of factors that showed a positive sign towards debt trap was the combination of almost all the possible various factors with the necessary condition being the inability of those infrastructures to raise enough revenue to pay for that debt. High debt risks and the inability of the Chinese built projects to yield enough revenue to repay the cost of those projects can be seen to be the most influential determinant in yielding a positive outcome for debt trap in this model. That is, the presence or absence of the factors used here does not imply causality by itself, but in combination with other factors. The returns on these construction projects, the interest rate on these investments, and the number of years to repay the loans are crucial in determining the country's debt risk in relation to these projects and its gross debt-to-GDP ratio.

From our analysis, we observe that some countries are more vulnerable to face the debt trap than others. For example, Zambia with a combination of high debt risk, low revenues on construction projects and presence of troubled transactions are more likely to fall into a debt trap diplomacy than Nigeria. Countries like Djibouti and the Republic of Congo are also likely to fall into a kind of debt-trap diplomacy in their relations with China as they have a higher debt risk with a lower revenue on the projects constructed in their respective countries. In conclusion, we can logically infer that the combination of factors like high debt risk, a high volume of troubled transactions, low revenue on infrastructure projects and high levels of corruption associated with the low level of government accountability are the critical factors indicating the likelihood of a country falling into the debt trap.

7. Policy implications and risk management strategies for better outcomes

In order to better deal with debt default situations concerning BRI and African countries, the above-highlighted risks must first be mitigated as much as possible.

First, to address political risks, the leadership of African countries should refute allegations of selling their votes to China in UN General Assemblies and push for better labor practices with China for African workers working on projects in Africa. It is also crucial that governments educate their people about the benefits of Chinese-funded infrastructure projects and provide adequate security for these projects.

Second, it is especially important to avoid unnecessary spending by taking all measures to prevent corruption. All parties involved in all stages of these projects from project negotiation, procurement and public tendering, to implementation and evaluation can achieve this through transparency.

Third, a thorough analysis of the economic viability of projects must be conducted to prevent the implementation of projects that do not deliver the expected benefits.

After mitigating the above risks, the following steps should be taken to avoid becoming a debt-trap:

- Countries should reject the option of leasing national assets to China as part of the terms of debt financing. Trade agreements could be possible alternatives to leasing national assets. For those that have leased their assets, they should renegotiate for a fairer share of revenues (at least a 70-30 split – 70 per cent for China and 30 per cent for the country).
- Countries that have overestimated the benefits of projects should renegotiate debt financing terms for uncompleted projects, seek debt relief from China, and possibly seek a bailout from international organizations.

8. Conclusion

China's contributions to the infrastructure of African countries have been highly praised by their leaders, illustrating the visible improvements that contribute to expanded economic activity, job creation for local workers, and tangible improvements to key infrastructure, all of which benefit ordinary citizens, albeit indirectly. However, Chinese investment in the continent has also been criticized as being opportunistic. This criticism is made in the sense that companies seek out niche markets regardless of the political environment, often seizing investment opportunities that others have ignored or even abandoned. This has led to accusations that China is engaging in debt-trap diplomacy in Africa.

In order to define the factors that could lead to African countries becoming debt-trapped, we attempted to define the term "debt-trap diplomacy" by presenting several criteria that define the concept. These include: (1) When a debtor country is led into a cycle of re-borrowing or rolling over its loans because it is unable to make scheduled payments when due; (2) When a country's strategic national asset is taken over and controlled by a creditor country in the event of a loan default; (3) When a creditor country provides financial assistance to another country on the condition that it exerts political, military, and economic influence over the debtor's domestic and international affairs; and (4) When a creditor country provides financing for a project in another country and a state-owned enterprise of the creditor country takes management control of 90 per cent or more. Other quantitative factors such as GNI, infrastructure and voice index, debt-to-GDP ratio, BRI projects, construction contracts and revenues were also identified.

The results of the QCA analysis of the selected countries as well as the control group suggest that a combination of factors such as high debt risk, a high volume of troubled transactions, low revenue of infrastructure projects and high levels of corruption associated with low government accountability are constraining factors on the likelihood of a country falling into the debt trap.

This paper then offered policy actions for countries at risk of falling into the debt trap across Africa and possible actions to manage relations with China for countries that are already faced with such risks. It was suggested that countries at risk should first try to mitigate the risks of BRI in the country and then reject the option of leasing national assets to China as part of the conditions for debt financing. For countries already affected, they should renegotiate for a fairer share of the revenues from leased assets. They should also renegotiate the terms of debt financing for unfinished projects, seek debt relief from China and possibly seek a bailout from international organizations.

As for the limitations of the study, in this case they are mainly related to the mixed methods approach. The use of a quantitative approach would have allowed for more extensive over-case generalizations of the findings. However, QCA as a specific research method shows itself to be a more sensitive tool to the peculiarities of specific cases which is important for the goals of this research. Thus, the results obtained within the framework of our study can become the basis for further research with a greater coverage of generalizations.

Notes

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Data Availability

Scan the QR Code
to view the data
used in this study