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INFRASTRUCTURE, DEBT AND DEVELOPMENT: REASSESSING THE DEVELOPMENTAL IMPACT OF CHINA–AFRICA ECONOMIC RELATIONS

By

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Abstract

This study reevaluates the changing economic relations between China and Africa, and goes beyond the duality of a debt trap account on infrastructure-led development. The research is based on the qualitative research design and is conducted with the help of data collected between 2020 and 2026 and five major countries (Kenya, Ethiopia, Angola, Nigeria, and Zambia). The results indicate that there has been a major strategic change in the way Chinese are engaging, now they are not investing in large-scale, loan-financed infrastructure but in small and beautiful projects, public-private partnerships (PPPs), and investments in digital and green energy. Although Chinese-financed initiatives have helped overcome the most dire infrastructure shortages, including improving connectivity and trade opportunities, they have at the same time contributed to the development of a debt vulnerability and put many African countries in a net debt outflow situation. The article poses a question of tension between the good growth performance and risks of macroeconomic instability that is posed by the existence of debt overhang. Finally, the paper postulates that the Chinese engagement effect is not consistent but rather dependent on the domestic institutional capacity, quality of the projects, and alignment with the national strategies. The results necessitate a balanced approach to the policy that focuses on debt transparency, strategic planning and adopting foreign investment in the local economies to promote sustainable and inclusive development.

Keywords: *Belt and Road Initiative, China-Africa Relations, External Debt, Infrastructure Financing, Sustainable Development*

1. Introduction

The gap in infrastructure financing estimated by the African Development Bank is USD 170 billion a year to close, but falling well short of that. This is again proved as true in 2025 reports. This has been a historical limitation to economic growth, industrialization and increased the cost of doing business.

Over decades, the concerted effort of the world through the traditional donors like the World Bank, International Monetary Fund (IMF), United States of America, United Kingdom, Paris Club, and European Union have made major interventions to bridge the infrastructure gap. Though the majority of investments of these donors are developed with the prism of development aids, however, the issue of the infrastructure gap remains on the African continent. The COVID-19 epidemic greatly impacted numerous countries, leading to low revenues, high domestic spending, and escalating debt levels, thus posing a huge concern in their pursuit of attaining SDG (Sustainable Development Goals) targets.

The vacuum left open opportunities to external forces and especially China to come into the scene. The emergence of China as an African development partner is a significant change in Economic relations over the globe. As the biggest country-to-country lender in the world, China has turned into the biggest provider of infrastructural finance.

China has changed the Infrastructure face of Africa through massive financing and construction of infrastructure in Africa. The involvement of China is on a large and extensive scale as demonstrated by the Addis Ababa-D, Bouti Railway in Nigeria, the Abuja-Kaduna Railway in Nigeria, and the Standard Gauge Railway in Kenya. However, historically, China–Africa trade has been imbalanced. China exports a lot more to Africa than it imports in terms of quantities. China had in 2023 exported 170 billion of goods to Africa and imported 100 billion, this is a huge disparity that is viewed as unjust by African leaders. While China imports a wide variety of goods, manufactured products, agricultural and industrial machinery, cars and vehicles to Africa, it mainly exports raw materials such as oil and gas, metals and minerals. Chinese exploitation of Africans has elicited a scream on the part of African leaders. An example of this is when president Ramaphosa of South Africa urged China to import more of South Africa products once he landed in Beijing.

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The study hypothesizes that the influence of development is not homogenous. It is highly reliant on the capacity of recipient countries and strategic alignment of projects to national development objectives and not necessarily pure motivations. This journal paper will attempt to go beyond a controversial discourse to provide a profound understanding of how Africa Nations can enhance their development through their relations with China.

Additional information on the trade of China in Africa.

The infrastructure in the majority of countries in Africa is very poor, the economy is not skyrocketing and individuals have no stable income to cover the ends. This has seen most African nations being contented with taking a loan with China so that they can increase their infrastructure. The investment of China has certainly brought back life to the development of Africa. The Chinese version of Chinese and African enterprise cooperation in terms of the supply chain is published. The African Development Bank President Akinwumi Adesina said, "Africa needs a high-quality investment. Africa needs environmentally friendly investment. Africa needs investment that helps promote the development of the local supply chain and improve young people's labor skills. Africa needs socially responsible investments that empower communities. This has to be a win-win investment partnership.''

This demonstrates that the support of Africa has been highly encouraged by China in the construction and development of the countries. The Chinese investment has increased the building of national infrastructure in Africa. Key projects such as financing and construction of transportation networks and power plants have effectively solved the problem of infrastructure deficit in African countries, and have largely promoted the economic growth and regional integration of African countries, and greatly improved people's living standards. China's investment in Africa has also provided it with a large number of employment opportunities and created good employment prospects. Specifically, the existing poverty in Africa has been alleviated and its social development has been facilitated with the formation and growth of production facilities.

2. LITERATURE REVIEW

The increasing relationships between China and Africa and the new position that China is taking as a significant infrastructure financier in Africa can be explained through the economic complementarities that exist between the two entities. On the one hand, Africa has a huge infrastructure shortage on its list of development issues, where investment requirements are high, and a funding gap exists. China has created one of the largest and most competitive construction sectors of the world, which includes specific knowledge in the civil works that are critical in development of infrastructure. On the other hand, as a result of globalization, China's fast- oil and mineral inputs that are rapidly outstripping the country's domestic resources. Africa is already a large exporter of natural resources and with improved infrastructure, has the potential to harness this potential, which will speed up the economic growth of the region. the increased manufacturing economy is creating significant needs of

To enable economic growth, African Nations have often had to depend on foreign sources to offset domestic investible capital constraints arising as a result of low domestic savings. There are several theories which give explanations why it is better and worse to use and over rely on foreign loans.

2.1 Theory of Financing Gap (The Two Gap Theory)

(Chenery and Strout,1996) highlighted that foreign aid could be used to fill either a savings gap or a foreign change gap needed for less developed countries' economic development. This is referred to as the Two gap model and has been argued a lot when it comes to the effectiveness of foreign aid. They further maintained that it is possible to use foreign loans to restore national savings in the instance of a temporary imbalance between investment and savings abilities.

There is a difference between when a country's marginal savings rate is high enough and when the marginal savings levels are low. A country can only self-refinancing when its marginal saving rate is high. When the savings are low, a country will have to source from foreign sources. This model has proven to be one of the most widely utilized theories in economics (Efendi, 2001) and is equally used by International Finance Institutions(IFIs) in attaining all funding required decisions (Easterly, 1999). This theory is applicable to this study because African countries do not have funds to finance infrastructure projects. Over the years, African countries have been relying on foreign assistance to boost their economies. It can thus be said that China's willingness to give loans to African countries might be considered a significant windfall to the continent. China's infrastructural funds could finance the infrastructure gap that Africa is currently facing.

2.2 False Paradigm Theory

This is premised on the belief that underdeveloped nations (particularly African countries) have failed to progress because their development methods which are typically provided by foreign ethnocentric economists from wealthy countries, are based on a flawed development model. While World Bank and IMF (multilateral organizations) from wealthy nations may give well-intentional and beneficial advice and finance, the false paradigm contends that they may not have the correct viewpoint when dealing with difficulties of economic growth in developing countries (Jouan Jean and Te Velde, 2013).

Western countries and institutions such as the World Bank and IMF have often been blamed for attaching political conditions whenever they provide African countries with loans. Western countries and institutions require the recipient to undergo changes in governance structure and adhere to international best practices (2018). China on the other hand, does not attach strings or conditions, and this has led to African countries embracing China's engagement (Li 2018: Wale 2018).

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It can be said that China's infrastructural loans could promote growth and development because they do not have political conditions. However, Africa's traditional partners, particularly the united and Europe, have questioned the reasons and motive of Chinese loans in Africa on several occasions (Moore 2021).

2.3 Dependency and Critical Perspectives

China – Africa economic relations in 2024 – 2026 are undergoing a significant shift, moving from large-scale state-led infrastructure lending towards smaller, more selective projects focusing on green energy, digital infrastructure and manufacturing. While Chinese investments have been pivotal in bridging Africa's infrastructure, deficit, critical perspectives and dependency theory continue to highlight risks of debt distress, strategic dependency and limited technology transfer, prompting Africa nations to rebalance these ties for long term sustainability.

(Hurley et al, 2018) suggest that Chinese lending may contribute to debt distress and as of 2023 – 2026. Many developing countries, including Ghana, Zambia and so on have faced severe debt distress and in some cases sovereign defaults, while China is the largest bilateral creditor in many of these cases.

2.4 Overhang Theory

External debt might affect economic growth through the debt overhang effect. Debt overhang theory posits that an entity with excessive debt may forgo profitable investment opportunities. Because returns primarily service existing debt, stakeholders underinvest causing stagnant growth and a higher default risk. Debt overhang is the case when debt servicing discourages current as well as future investment plans (Ejigayehu 2013). According to Savvides (1992), a debtor country's failure to pay its foreign debt might be connected to the country's economic situation. This type of country benefits little from increased productivity or export profits since a portion of the money is spent to pay off future debt. This theory is applicable in this study because China has been blamed for saddling Africa with debt (Maeto 2021: Stones and Chazan 2020; Stein(2021), White 2021).

3. EMPIRICAL REVIEW

Empirical evidence suggests and have shown that infrastructural loans have a profound effect on growth and development. Africa is using China's loans to develop its infrastructure. This could significantly boost infrastructure development but create mixed, often complex impacts on debt sustainability. This section investigates the literature that has explored the contribution of infrastructure on development and also explores literature that looked at how foreign loans can affect economic growth. This can be seen in Angola, Kenya, Ethiopia, Zambia and Nigeria.

Case studies of some countries debt and development have become major topics in international relations as regards to china's relations with African countries. The reasons for China's rendering loans to African countries is it majorly to improve African infrastructures or to cripple economies? This concept suggests that China strategically lends excessive amounts or huge capital to developing countries anticipating their inability to repay the debt and subsequently demands concessions or geopolitical advantages (Blinten, 2024).

Critics of China's Belt and Road initiative have raised concerns about the potential for debt (Sign, 2020). The covid-19 pandemic exacerbated these fears as governments worldwide borrowed heavily to stimulate their economies (Moyo, 2021). The increased debt burdens have raised the prospect of debt traps and potential Chinese takeovers. Some analysis view China'a BRI as not just a geographical tool also weapons (Blinkem, 2024, Moses, Hwang, Engel and Bien-Aime, 2023. These scholars suggest that by saddling countries with debt, China can exert significant influence over their economic and political decisions (Bolton, 2017).

3.1 The Kenya Case

Kenya is one of China's largest borrowers in Africa with debt primarily funding major transport projects. The Flaship project is the 480km Mombosa – Nairobi Standard Gauge Railway(SGR).

Between 2010 and 2015, Kenya borrowed US$ 6.3 billion in semi concessional and commercial loans from China to finance the Mombasa-Nairobi Standard Gauge Railway (Brautigam, Bhalati, Deron, and Wang, 2022). Despite feasibility studies raising concerns about the project's profitability, construction proceeded (Taylor, 2020). The SGR failed to generate sufficient revenue, which resulted to low repayment capacity. The railway has since become a contentious issue, often referred to as a ''White Elephant''. The controversy surrounding the project lingered beyond its potential economic viability. The Kenyan Auditor General's office mistakenly reported that Mombasa port had been used as collateral for the railway for the Chinese financed railway. (Brautigam, Bhalati, Deron and Wang, 2022) revealed that the Kenyan National Treasury, not the Port Authority, was the actual borrower.

3.2 The Ethiopia Case

China's loan to Ethiopia resulted in a combination of significant infrastructure development and acute debt distress. Often described as a ''development debt paradox''. While Chinese financing between 2000 and 2023 totaling over $13 billion, has delivered transformative infrastructure projects, it has led to high debt sustainability risks, with Ethiopia defaulting on its debt payments in December, 2023. China funded the 756km Addis Ababa, Djibouti Railway, connecting landlocked Ethiopia to the Port, as well as the Addis Ababa light rail system.

Many projects did not generate sufficient foreign exchange earnings to cover their repayment costs increasing the burden on the Ethiopia national treasury.

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By late 2023, Chinese loans accounted for significant portion of Ethiopia's 28 billion external debt, leading to debt distress, partly exacerbated by the costs of internal conflict and COVID-19. As of April, 2026, Ethiopia has reached a resolution with China regarding debt treatment and its exploring converting part of its U.S dollar, denominated debt into Chinese Yuan to lower financing costs.

3.3 The Angola Case

China's loans to Angola (roughly $42 - $50 billion 2000 – 2024) have functioned as a double-edged sword, resulting in both rapid post-war infrastructure development and significant debt distress. While funding essential roads, hospitals, and power projects, the oil-backed loans left Angola economically vulnerable, with Chinese debt accounting for about 49% of the nation's risk.

Loans were used to rebuild infrastructure following Angola's civil war including railway lines, roads, and social projects like schools. However, Angola is discovered to be one of China's largest borrowers and has faced high debt-to- GDP ratios, largely to the resource-for-infrastructure model. In 2020, debt levels were exceptionally high, though they fluctuated with oil prices.

While these loans enabled rapid physical development, they also created a deep, long-term financial dependency, making Angola one of the nations' most heavily indebted to China in Africa.

3.4 The Nigeria Case

Chinese loans to Nigeria primarily funded infrastructure development such as rail, power and airport projects but have concurrently created significant debt burdens and sustainability concerns. As of 2021, these loans comprise about 80% of Nigeria's bilateral debt, providing needed infrastructure while raising fears of long-term dependency, lack of transparency and debt servicing strain.
The loans obtained from China were used for the following projects, Nigeria Railway Modernization project (Idu-Kaduna section), Abuja Light Rail project and the Nigerian four Airport Terminal Expansion project for Abuja, Kano, Lagos and Port Harcourt. Others are the Nigerian Railway Modernization project (Lagos – Ibadan section) and the Rehabilitation and upgrading of Abuja - Keffi Makurdi Road project.

Nigeria's external borrowings have both negative and positive impacts. Scholars like and believe that the benefits of the relationship between Nigeria and China have become most evident and that African countries have generally found their development partnership with China more concretely beneficial and more satisfying than their experience with Western donor countries. (Oloyede B et al, 2002) specifically elaborated on this by revealing that African Countries are much more comfortable with Chinese leadings since China's approach to its aid and trade relationship with Africa attaches no strings in the face of the issues such as human rights and are viewed as offering far more practical and concrete kinds of support such as infrastructural development but has been neglected by traditional donors.

While Chinese loans are often loans are often presented as concessional with low interest rates, concerns arise about their long term sustainability. Critics argue that loan agreements lack transparency and include clauses that compromise Nigeria's sovereignty in the event of default.

A striking finding is the negative impact of Chinese imports on Nigeria domestic industries. The influx of cheap textiles, electronics and manufactured goods has weakened Nigeria's manufacturing base, particularly in Kano's once thriving textile industry. Reports suggests that over 28,000 jobs were lost in the textile sector by 2015 due to competition from Chinese imports.

China's demand for Nigeria's oil resources and Nigeria's quest for investment and technology thus relationship has matured into a complex network of trade, investment and development cooperation (Idrees Bashir, Zurkallaaim et al, 2024). China's strategic interest in Nigeria's energy sector and Nigeria's need for infrastructure development have fostered synergies that have contributed to deeper economic ties.

3.5 The Zambia Case

The Chinese loans to Zambia transformed Zambia's infrastructure landscape, led to development gains, but despite this, Zambia's external debt exceeded sustainable levels. In the area of transport infrastructure, Chinese loans to Zambia led to:

I. Construction of roads and bridges
II. Rehabilitation of Airports
III. Expansion of railway systems

In the area of telecommunications, Huawei and ZTE are involved in digital infrastructure, the expansion of mobile networks, and ICT access, while for the Energy sector, hydropower projects such as Kafure George, the lower Hydropower station.

China and Zambia share a long-standing relationship dating back to the construction of the Tazara Railway (1970s). In the 21st century, this relationship expanded significantly. This research has discovered Zambia to be one of the largest recipients of Chinese loans in Africa. Despite the gains as a result of the investment by China, Zambia's debt profile is discovered to be on the high side. By the early 2020s, Zambia's external debt exceeded sustainable levels, with China being a major creditor.

Zambia is discovered to be the first African country to default during the COVID-19 pandemic (2020). As of April 2026, Zambia owed approximately $6.6 billion to Chinese creditors.

While infrastructure projects are visible and impactful, their long-term economic returns have not always matched the scale of borrowing. This raises questions about:

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- Project selection
- Economic Viability
- Governance and Accountability

The case of Zambia highlights the complex relationship between infrastructure development, debt accumulation, and economic growth in China – Africa relations. While Chinese investments have played a crucial role in addressing infrastructure deficits, they have also contributed to significant debt vulnerabilities.

4. GAP IN LITERATURE

Despite the growing body of literature on China-Africa economic relations, significant gaps remain. Existing studies tend to overgeneralize the African experience, often treating the continent as a monolith rather than a mosaic of diverse fiscal environments and political priorities. Furthermore, much of the current discourse remains trapped in a binary focus on debt sustainability debates, which, while critical, often lacks a rigorous empirical evaluation of the actual developmental outcomes of Chinese-financed infrastructure.

Crucially, limited attention has been paid to the role of domestic political economy factors and African agency in shaping these outcomes. By overlooking how local governments negotiate, prioritize, and manage these partnerships, previous research has frequently cast African nations as passive recipients rather than active strategic players.

This study addresses these gaps by providing a longitudinal analysis of five pivotal nations: Kenya, Ethiopia, Angola, Nigeria, and Zambia. By critically assessing whether Chinese infrastructure investments translate into sustainable development, the research moves beyond macro-level debt figures to examine ‘‘on-the-ground” impacts. It investigates how local institutional frameworks, or the lack thereof, determine whether a project becomes a catalyst for industrialization or a stranded asset. This approach provides a necessary corrective to the literature, highlighting that the ‘‘success’’ of the China-Africa nexus is fundamentally a product of strategic alignment and domestic governance.

5. THEORETICAL FRAMEWORK

This study adopts various theories namely the False Paradigm Theory, Dependency and critical Perspectives, Financial Gap Theory, The Developmental School, and the Debt Overhang Theory.

The framework integrates the above mentioned theories for this journal. These theories are grouped into three broad analytical lenses:

I. External influence and structured constraints
II. Development opportunities through financing and
III. Debt and long-term sustainability risks

5.1 External influence and Structural constraints

The false paradigm theory (Todaro and smith, 2015) argues that developing countries often adopt inappropriate development models due to external advice from foreign actors and institutions. These models may not align with local realities, leading to poor outcomes.

In the context of China – Africa relations, this theory raises concerns that:

- Chinese financed Infrastructure may reflect externally driven priorities
- Projects may not align with domestic development needs
- Africa countries may replace unsuitable development pathways

Application:

- Kenya (SGR) and Nigeria questions about economic viability and alignment with national priorities.

Dependent Theory (Frank 1967, 1972) posits that developing countries remain dependent on external powers, resulting in unequal economic relationships.

Applied here, it suggests:

- Chinese loans may serve resource dependence (e.g Angola’s oil-backed loans)
- Infrastructure may serve expert - oriented extraction rather than domestic transformation.

Financial reliance may create new forms of dependency

Application:

- Angola and Zambia: Vulnerability due to resource – backed and debt – finance projects

Critical Perspectives Theory:

Critical Perspectives Theory (including Neo Marxist and Post-Colonial approaches) challenge dominant narratives of “Win-Win Cooperation) emphasizing power asymmetries, elite capture, and hidden interests.

This Theory highlights:

- The role of political elites in shaping project selection
- The possibility of unequal benefits distribution
- The geopolitical dimension of China’s engagement

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Application:

- **Nigeria and Zambia:** Elite African driven borrowing and government concerns
- **Kenya:** Political Prestige vs Economic Rationality

5.2 Development Opportunities through Financing

Financing Gap Theory

Financing Gap Theory suggests that developing countries face a shortage of domestic capital needed for large-scale investments, particularly in infrastructure. External financing is therefore necessary to bridge this gap.

Within China-Africa relations:

- Chinese loans provide quick, large-scale funding for infrastructure deficit (roads, railways and power)

Application:

- **Ethiopia:** Successful use of Chinese finance for railways and individual parks
- **Kenya:** Expansion of transport infrastructure
- **Nigeria:** Railway modernization projects

This theory supports the argument that Chinese engagement can be development-enabling especially where domestic resources are insufficient.

5.3 Debt and Long-Term Sustainability Risks

Debt Overhang Theory

Debt Overhang Theory (Krugman, 1988) posits that when a country accumulates excessive debts:

- Future investment declines
- Economic growth slows
- Resources are diverted to debt servicing

In the context Chinese loans:

- High borrowing for infrastructure may lead to unsustainable debt burdens
- Expected returns from infrastructure may not materialize quick enough

Application:

- **Zambia:** Debt distress and default experience
- **Angola:** Repayment pressure tied to oil revenues
- **Kenya:** Rising debt servicing concerns

5.4 Synthesis of the Framework

Individually, these theories provide competing interpretations. However, when integrated, they offer a nuanced understanding of China-Africa economic relations.

- False Paradigm, Dependency, and critical Theories highlights risks of external influence, structural inequality and governance challenges.
- Financing Gap and Developmental benefits of Chinese infrastructure financing.
- Debt Overhang Theory – underscores the long – term macroeconomic risks associated with excessive borrowing.

5.5 Method of Data Collection

This research paper adopts a qualitative research design supported by secondary data collection to examine the relationship between infrastructure financing, debt accumulation, and development outcomes in selected African countries (Kenya, Ethiopia, Angola, Nigeria and Zambia)

This study relies primarily on secondary data, drawn from credible and verification sources. These include:

- International Financing Institutions
- World Bank (World Development Indicators)
- International Monetary Fund (IMF) reports
- African Development Bank (AFDB)
- Chinese Finance and Infrastructure Data sources
- Aid Data (Global Chinese Development Finance Data set)
- China Africa Research Initiative (CARI) John Hopkins University
- SAIS CARI loan databases and policy briefs
- Government Publications and National Data:
- Ministries of Finance and Economics Planning of the selected countries
- Central Bank Reports
- National Bureau of Statistics (e.g. Nigeria)
- Academic and Scholarly Sources
- Peer reviewed Journal Articles

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- Books and edited Volumes on China – Africa Relations
- Doctoral Theses and working papers
- Media Based Data Collection
- Henchman Two Stage Model Policy and Institutional Reports
- United Nations Economic Commission for Africa (UECA)
- OECD and other development policy institutions

5.6 Data Collection Approach

Data were collected through a documentary analysis approach involving:

- Systematic review of existing literature and datasets.
- Extraction of relevant data based on the study variables.
- Chinese infrastructure financing (independent variable).
- Governance and Institutional factors (independent variables).
- Development outcomes and debt sustainability (dependent variables).
- Comparative compilation of data across the five case study countries to enable cross-country analysis

5.7 Justification for Secondary Data Use

The reliance on secondary data is appropriate because:

- Chinese loan agreements and infrastructures financing details are often not publicly accessible for primary data collection
- Secondary data sets (e.g. Aid data, World bank) provide standardized and cross country comparable data.
- It allows longitudinal analysis particularly in countries like Zambia and Angola where debt dynamics have evolved over time.

5.8 Data Reliability and Validity

To ensure the reliability and validity of the data:

- Information was triangulated across multiple sources (e.g. IMF, World Bank, Addis Aid Data).
- Priority was given to peer-viewed and institutional publications.

5.9 Limitations of Data collection

Despite efforts to ensure accuracy, some limitations exist:

- Opacity of Chinese lending data
- Differences in reporting standard across countries
- Limited availability of project
- Level performance data

6. DISCUSSIONS

This study reassesses the developmental impact of China-Africa economic relations by examining infrastructure financing, debt accumulations, and development outcomes across Kenya, Ethiopia, Angola, Nigeria and Zambia. The findings reveal that Chinese engagement produces uneven and conditional development outcomes rather than uniformly positive or negative effects. These variables are best understood through the interaction of financing needs, domestic institutional capacity and debt sustainability.

The findings revealed China infrastructure investments significantly transformed Africa's economic landscape. Improved roads, railways, energy systems and so on have enhanced productivity and regional integration. This has made China one of the continent's most influential economic partners. This relationship characterized by extensive loans and investments has fueled infrastructure development across Africa.

6.1 Infrastructure Expansion Vs Development Outcomes

Across all five countries, Chinese financially has significantly contributed to rapid infrastructure expansion particularly in transport and energy. This supports the financing gap theory, which posits that external capital is essential for addressing infrastructure deficits in developing economics.

However, the findings challenge the assumption that infrastructure automatically translates into development. While projects such as Ethiopia's Addis Ababa, Djbouti railway demonstrate linkages to industrialization and trade, others, such as Kenya's Standard Gauge Railway, raise concerns about low utilization rates and limited economic returns. This suggests that infrastructure effectiveness depends not merely on availability but on integration into broader, economic strategies, reinforcing insights from the developmental state Theory.

6.2 The Role of State Capacity and Governance

A key finding of this study is that state capacity is the decisive factor shaping outcomes. Ethiopia stands out as a relatively successful case where Chinese financing has been aligned with long term development planning, including industrial parks and export, oriented growth.

In contrast, Nigeria and Zambia exhibit weaker coordination between infrastructure investments and national development strategies, resulting in limited structural transformation.

In these contexts, infrastructure projects often suffer from:

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- Poor planning and implementation
- Weak institutional oversight
- Limited linkage to productive sectors

This supports the developmental state theory which emphasizes that external financing yields positive outcomes only when mediated by strong and capable institutions.

6.3 Debt and Sustainability Risks

The research finds that increased access to Chinese loans contributed rising debt levels across the case study countries with particularly severe consequences in Zambia's debt distress and default illustrate the dynamics predicted by the debt over hang theory, where excessive borrowing constraints future investment and growth.

Also, Angola's oil-backed loans highlight vulnerabilities associated with commodity dependent repayment structures, especially during periods of price volatility.

While Nigeria and Kenya have reached the same level of crisis/problems, growing debt servicing obligations raise concerns about fiscal sustainability and long-term stability.

It is discovered from these findings that the developmental benefits of Chinese financing may be weakened by debt management practices and unrealistic projections of project returns.

6.4 Evidence Structural Constraints and Dependency

The research partially supports Dependency Theory, especially in resource-rich countries like Angola and Zambia, where Chinese financing is closely tied to natural resource extraction.

In these cases:

Infrastructure development appears to facilitate export oriented activities. Economic diversifications remain limited. Nevertheless, the evidence does not fully support a deterministic dependency outcome. Ethiopia's experience demonstrates that external financing can be strategically utilized to promote industrialization, suggesting that dependency is not inevitable. This indicates that dependency outcomes are mediated by domestic policy choices, rather than being structurally fixed.

6.5 Critical Perspectives and Political Economy

The research also reveals the importance of political and institutional dynamics, as emphasized by critical perspectives theory. In several cases, infrastructure projects appear influenced by:

- Elite interest
- Political prestige considerations
- Short term
- Electoral incentives

For example:

Nigeria shows patterns of project fragmentation and inconsistent policy direction.

Kenya's SGR has been criticized as a politically motivated mega-projects.

Zambia's borrowing pattern reflect political cycles.

These findings highlight that infrastructure investments are not purely economic decisions but are embedded within power structures and governance systems, which shape their development impact.

The findings also lend support to the false paradigm theory, particularly where projects do not align domestic economic realities. In some areas, African countries appear to have adopted large scale infrastructure models without sufficient consideration of:

- Economic viability
- Demand levels
- Maintenance capacity

This misalignment contributes to underperformance and reinforces debt burdens, particularly in Zambia and Kenya.

6.6 Synthesis of Findings

Overall, the discussion shows that China-Africa Economic relations cannot be reduced to simplistic narratives of either ''Win-Win Cooperation'' or ''Debt trap Diplomacy"

The development impact is instead conditional and context-specific, shaped by three factors:

- Financing needs: Chinese loans effectively bridge infrastructure gaps.
- State capacity: Determines whether Infrastructure translates into development.

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- Debt management: Shapes long-term sustainability.

Debt sustainability remains a central concern. While Chinese loans often have favorable terms, the scale of borrowing can lead to fiscal pressure. The real problem is not China per say but how it is managed. The evidence clearly shows that Chinese infrastructure financing is neither inherently beneficial or inherently harmful. Its developmental impact depends on how African states negotiate, implement and manage these engagements within their domestic political and institutional contexts.

7. CONCLUSION

The developmental impact of China-Africa economic relations is neither purely positive nor purely negative; it is a pragmatic evolving partnership. These relations present both opportunities and challenges. Infrastructure development has the potential to transform African economies, but rising debt levels pose significant risks.

The study sets out to reassess the developmental impact of China-Africa economic relations by examining the Interconnected dynamics of infrastructure financing, debt accumulation and development outcomes across several African countries including Angola, Rwanda and Zambia. Findings demonstrate that Chinese engagement has played a significant role in addressing Africa's infrastructure deficit, but its overall development impact remains uneven, conditional and context-dependent.

On one hand, the research confirms the relevance of the financing gap theory, as Chinese loans have enabled the rapid expansion of critical infrastructure in transport, energy and industrial sectors. Countries such as Ethiopia illustrates how such investments, when effectively integrated into national development strategies, can contribute to industrialization, trade facilitation, and economic transformation.

On the other hand, the study highlights significant limitations in countries such as Zambia and Angola, where rising debt burdens and repayment pressures reflect the dynamics captured by the Debt Overhang Theory. In such cases, excessive borrowing undermines long-term growth and fiscal stability.

Similarly, cases like Kenya and Nigeria reveal that infrastructure investments do not automatically translate into development, particularly where projects are poorly aligned with economic needs or constrained by weak institutional capacity.

The research further demonstrates that conclusions derived from Dependency Theory and critical perspectives are not universally applicable. In some contexts, Chinese financing reinforces existing structural vulnerabilities, particularly in resource-dependent economies.

However, the evidence does not support a purely deterministic view of dependency. Instead, outcomes vary significantly depending on domestic governance, policy choices, and state capacity, as emphasized by the Developmental State Theory.

Additionally, the study underscores the relevance of the False Paradigm Theory, particularly where large-scale infrastructure projects are adopted without sufficient consideration of local economic realities, resulting in inefficiencies and underperformance.

Scope, scale, and speed are qualities that China brings in ways few other partners can match. At the same time, China's non-interference principle will need to continue to evolve as the success of its partner countries becomes vital to the viability and reputation of the whole BRI and China's global vision itself require careful engagement. There are African agents who have embraced the non-interference principle, sometimes undermining the integrity and effectiveness of their countries, particularly in the context of infrastructure financing (Corkin, 2016).

The risk assessment systems of policy banks, including regulatory risk frameworks, have been reinforced alongside systems for assessing social and environmental standards (CCDF, 2018; China Exim Bank, 2017).

With China taking an increasingly dominant share of development finance across the global reach of the BRI, including Africa. It also assumes an increasing need for global best exposure and reputational risk in terms of performance, standards, and integrity. But China cannot succeed in its BRI without major parallel and connected efforts from African countries. The creation of joint approaches and systemic processes at the policy and operational levels will be essential.

In this study, we have seen how China has provided loans to five African countries mentioned and discussed. We have seen how China has emerged as an important development opportunity for the African continent. However, for Africa to thrive in a globalized world, it will require not only addressing the infrastructure gap, but also improving business regulations and customs procedures, as well as broader reforms to strengthen the rule of law. These reforms are the responsibility of African countries, and are essential to diversifying African exports and to economic growth and poverty reduction on the continent. "

This research paper has provided insights into the complex dynamics of China's economic presence in Africa and the implications of the BRI for development outcomes on the continent. By critically assessing the positive and negative impacts of Chinese loans, as well as considering the implication of Chinese recent economic situation, this journal paper has contributed to an understanding of the opportunities and challenges facing Africa in its engagement with China.

This study has reassessed the developmental impact of China-Africa economic relations by examining the relationship between infrastructure financing, debt accumulation, and development outcomes in Kenya, Ethiopia, Angola, Nigeria, and Zambia.

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The findings demonstrate that while Chinese engagement has significantly accelerated infrastructure development across these countries, its broader developmental outcomes remain mixed and highly conditional.

The study shows that Chinese financing has been instrumental in bridging Africa's infrastructure deficit, particularly in transport and energy sectors, thereby supporting the assumptions of the Financing Gap Theory.

However, the mere provision of infrastructure does not guarantee sustainable development. Evidence from Ethiopia and Nigeria reveals that where projects are weakly integrated into national development strategies or constrained by institutional inefficiencies, their economic impact is limited.

On the other hand, Ethiopia provides evidence that when infrastructure investments are aligned with broader developmental strategies, they can contribute meaningfully to industrialization and economic transformation.

This reinforces the relevance of the Developmental State Theory, which emphasizes the central role of state capacity and policy coordination in achieving development outcomes.

At the same time, the study highlights growing concerns around debt sustainability. The cases of Zambia and Angola illustrate the risks associated with excessive borrowing and commodity-backed financing. These findings support the Debt Overhang Theory, where debt in such contexts ,using debt-servicing obligations undermines fiscal stability and long-term growth prospects.

Furthermore, this research finds partial support for Dependency Theory and critical perspectives, particularly where Chinese financing appears to reinforce existing structural vulnerabilities and asymmetrical economic relationships.

However, variation in outcomes across the case studies suggests that dependency is not inevitable but rather shaped by domestic governance and policy choices.

The findings also resonate with Institutional Theory, as cases where large-scale infrastructure projects are pursued without adequate consideration of local economic realities result in inefficiencies and underperformance.

In conclusion, Chinese infrastructure financing represents both an opportunity and a risk for African development. Its success ultimately depends on the ability of African states to strategically manage external resources, strengthen institutional capacity, and ensure that borrowing translates into sustainable and inclusive economic growth.

8. RECOMMENDATION

8.1 Infrastructure Impact

Chinese funding has helped close the infrastructure gap, particularly in transport and energy sectors, such as the Mombasa–Nairobi Standard Gauge Railway (SGR) in Kenya, which improved regional connectivity.

8.2 Debt Sustainability Issues

Negative impacts: Many nations have seen debt-to-GDP ratios rise, with Zambia having about 26% of its public external debt owed to China, increasing risks of debt distress.

9. Recommendations

I. Prioritize Debt Sustainability

African nations must conduct rigorous cost-benefit analyses before signing loans to avoid debt distress, especially for projects with weak economic returns.

II. Enhance Project Quality Control

Governments must ensure that projects such as railways and ports are directly linked to industrialization and lowering logistics costs for local industries, rather than merely extracting resources.

III. Strengthen Strategic Infrastructure Planning

African governments should improve long-term planning frameworks. They should ensure that infrastructure projects are closely aligned with national development plans and sectoral priorities.

- Projects must be selected based on economic viability demand and long term returns not political considerations
- Greater emphasis should be placed on infrastructure, manufacturing and trade. This will address issues identified in Kenya and Nigeria, where some projects show limited economic impact.

1V. Promote Economic Diversification:

African countries should reduce overdependence on primary commodity exports, especially where loans are tied to natural resources.

- Invest in industrialization and value addition.
- Support local industries and SMEs linked to infrastructure development.

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- Leverage infrastructure to promote intra-African trade (AfCFTA opportunities).
- This is essential to avoid reinforcing dependency patterns observed in Angola and Zambia.

V. Enhance Institutional Capacity and Governance

The effectiveness of Chinese financing largely depends on domestic institutions.

- Strengthen public sector capacity in project negotiation, implementation, and monitoring.
- Improve accountability and anti-corruption mechanisms.
- Establish independent bodies for project evaluation and oversight.

This will help ensure that infrastructure investments translate into tangible development outcomes.

VI. Improve Debt Management and Fiscal Responsibility

- Governments must adopt more prudent borrowing strategies to avoid unsustainable debt accumulation.
- Conduct rigorous cost-benefit analyses before contracting loans.
- Limit reliance on resource-backed loans, particularly in volatile commodity markets.
- Strengthen debt transparency and reporting systems.

This is critical, especially for countries like Zambia and Angola, where debt distress has undermined development gains.

VII. Increase Local Content and Technology Transfer

- Governments should negotiate agreements that promote local participation and skills development.
- Ensure inclusion of local labour, contractors, and suppliers.
- Encourage technology and knowledge transfer from Chinese firms.
- Develop policies that build domestic technical capacity.

This will enhance long-term development outcomes beyond physical infrastructure.

VIII. Strengthen Regional and Continental Coordination

- African countries should adopt a more collective and strategic approach when engaging China.
- Use platforms such as the African Union (AU) and AfCFTA to coordinate infrastructure development."
- Promote regional infrastructure projects.
- Enhance connectivity and trade.
- Encourage sharing of best practices.

IX. Ensure Transparency in China–Africa Agreements

- Greater transparency is important for accountability and sustainability.
- Publish key terms of loan agreements and project details.
- Encourage parliamentary and public oversight.
- Align agreements with international best practices in procurement and governance.

X. Adopt a Balanced Financing Strategy

African countries should avoid overreliance on a single external partner.

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