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China's experience of infrastructure megaprojects in Eurasia and Africa: Successes and contradictions

Abstract. The research relevance is determined by the unprecedented scale of Chinese infrastructure initiatives, their potential impact on regional development and the geopolitical balance of power, as well as the controversial nature of their socio-economic and environmental consequences in the context of current global transformations. The study aims to provide a critical analysis of the successes and contradictions of China's infrastructure initiatives. Synthesis, comparative analysis, critical analysis, modelling, structural-functional and systematisation methods were used in the study. The results of the study demonstrate the significant potential of Chinese infrastructure megaprojects to stimulate economic growth, and infrastructure development and deepen regional integration in Eurasia and Africa. However, despite the declared benefits, these initiatives are characterised by several contradictions and challenges. Large-scale Chinese investments carry risks of debt dependence for recipient countries, as they are often provided on non-transparent and unfavourable terms. In addition, the implementation of megaprojects is accompanied by high corruption risks, a lack of proper accountability mechanisms, and limited involvement of local resources and companies. This minimises potential economic benefits for the countries involved and hinders technology transfer and local capacity development. Chinese infrastructure projects are also often associated with negative social and environmental impacts, such as forced resettlement of communities, ecosystem degradation, and pollution. To overcome these contradictions, recommendations have been developed to introduce mechanisms for transparency, accountability, active involvement of local companies and ensuring a fair distribution of economic benefits among all stakeholders. The practical significance of the study lies in the development of recommendations for optimising Chinese infrastructure megaprojects, given the interests of the participating countries, which can be used to improve cooperation strategies with China and ensure the sustainability, mutual benefit and inclusiveness of these initiatives

Keywords: investment projects; technology transfer; fair distribution of benefits; accountability; international cooperation; geopolitical influence

Introduction

The analysis of the Chinese experience in implementing infrastructure megaprojects in Eurasia and Africa is of particular importance in the context of current global transformations and geopolitical shifts. China, as one of the world's leading economic powers, is actively expanding its influence in the international arena, through the implementation of large-scale infrastructure initiatives. However, despite Beijing's declared goals of promoting economic development and deepening regional integration, these projects are often accompanied by several contradictions and challenges that question their real effectiveness and fairness.

Despite the potential benefits of modernising transport and energy infrastructure, the real economic benefits

for the participating countries are often minimal. Moreover, these initiatives are often accompanied by corruption scandals and lead to the accumulation of debt obligations, making states effectively dependent on Beijing's will. In addition, the projects are often implemented by Chinese companies with Chinese workers, which limits opportunities for job creation and technology transfer in the recipient countries.

Several factors determine the need for a critical study of the Chinese experience of infrastructure megaprojects in Eurasia and Africa. First, the scale and ambitiousness of these initiatives require a thorough study of their real consequences for regional development and the geopolitical balance of power. In addition, an analysis

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of the contradictions and challenges associated with Chinese megaprojects could develop recommendations to minimise risks and ensure a more equitable distribution of benefits from such initiatives. Equally important, a critical reflection on the Chinese experience can serve as a basis for developing alternative models of international cooperation that address the interests of all parties involved.

For instance, V.V. Lyman (2021) reveals Chinese geopolitical interests in the context of the “One Belt, One Road initiative”, which intensifies Chinese cooperation with Eurasian and African countries, particularly in the field of infrastructure development. W. Zhou (2021), in turn, analyses in detail the content of this initiative, emphasising its focus on developing mutually beneficial partnerships and implementing joint infrastructure projects. The study by Y.O. Shyrshova (2021) focuses on the dynamics of Chinese investment in African economies, a significant part of which is directed to infrastructure development – the construction of transport networks, energy facilities, etc. In contrast, V.O. Perminov & A.S. Chihira (2022) addressed the evolution of the African vector of China’s foreign policy, noting the growing role of infrastructure cooperation in Chinese relations with African states.

V.U. Ugwu, (2020) devoted his dissertation to a comprehensive analysis of Chinese geopolitical strategy towards Africa, emphasising the large-scale infrastructure projects as a means of expanding Chinese influence on the continent and deepening strategic partnerships with individual African countries. Y. Krykavskyy *et al.* (2019) analysed the impact of the level of logistics infrastructure development on the effectiveness of the implementation of the Chinese “One Belt, One Road” initiative. The authors emphasise the role of the Logistics Performance Index (LPI) as an index of infrastructure development and investment opportunities and consider the regional peculiarities of the logistics development of the countries participating in the initiative.

However, despite the extensive coverage of the success of China’s infrastructure initiatives in Eurasia and Africa, the analysed studies do not contain a comprehensive critical analysis of the potential contradictions and negative consequences associated with the implementation of these mega-projects. Insufficient attention is devoted to such problematic aspects as the debt dependence of recipient countries, corruption risks, limited involvement of local resources, etc. This demonstrates the need for further scientific reflection on the experience of Chinese infrastructure initiatives to develop recommendations for optimising the relevant projects and ensuring their maximum efficiency and sustainability for all parties involved.

The study aims to conduct a thorough analysis of China’s experience in implementing large-scale infrastructure projects in Eurasia and Africa. To achieve set

goal, the following key tasks are to be addressed: analysis of the main directions, scale and real consequences (economic, social, environmental) of Chinese infrastructure projects in Eurasia and Africa for recipient countries; identification of key contradictions and challenges associated with Chinese megaprojects, in particular, the problems of debt dependence, corruption and limited involvement of local resources; development of recommendations for optimising such initiatives to ensure a fairer distribution of benefits and minimise negative consequences.

Materials and Methods

A set of general scientific methods was used to study the Chinese experience of infrastructure megaprojects in Eurasia and Africa. The synthesis method was used to collect data on key industries and regions covered by Chinese initiatives and to form a holistic view of the geographical and sectoral dimensions of China’s infrastructure expansion. The comparative method was used to compare the potential benefits and real challenges of infrastructure modernisation through Chinese investment, which allowed us to identify the asymmetry of benefits from these initiatives. Critical analysis was applied to study the problematic aspects of Chinese megaprojects, such as the risks of debt dependence, corruption risks, lack of proper accountability mechanisms, limited involvement of local resources, etc., which helped to identify systemic contradictions and potential threats to the participating countries.

The modelling method was used to develop a conceptual model for optimising Chinese initiatives, which involves the implementation of measures to ensure transparency, accountability, local resource mobilisation, equitable distribution of benefits and compliance with social and environmental standards. The structural-functional analysis was used to study the institutional model of Chinese infrastructure expansion, relying on close cooperation between the public and private sectors under the auspices of the central government. The systematisation was used to compile data on the geopolitical and geo-economic impact of Chinese megaprojects, identify key trends in their impact on the regional and global balance of power, and assess their role in the realisation of China’s strategic interests in Eurasia and Africa.

To provide a comprehensive analysis of China’s infrastructure megaprojects, an array of international standards and guidelines developed by reputable organisations were considered in the study. In particular, the G20 High-Level Principles for Promoting Integrity and Transparency in Infrastructure Development (G20 Osaka Leaders..., 2019) were studied, which set out a framework for ensuring integrity, transparency and good governance in infrastructure projects. The CoST Infrastructure Transparency Standard (2024), which aims to increase

transparency and accountability in public infrastructure projects by disclosing key information at all stages of the project cycle, has also become an important source for the study. In addition, the OECD Guidelines on Anti-Corruption and Building Integrity in Public Investment (Recommendation of the Council on Guidelines..., 2019), which guides governments on strengthening anti-corruption mechanisms and promoting integrity in the planning, allocation and implementation of public investment projects, was analysed.

Alongside the international standards, the study included a wide range of analytical materials and reports prepared by both international organisations and national regulatory authorities. Publications by reputable analytical centres such as Chatham House (Wignaraja *et al.*, 2020) and CSIS (2023) were used to highlight various aspects of China's infrastructure expansion in Eurasia and Africa, including its scale, drivers, potential benefits and challenges. Reports of national regulatory bodies, such as the National Council for the Development and Monitoring of Local Content in Nigeria (Local Content Digest, 2022), were also analysed, providing valuable information on the experience of individual countries in developing and implementing mechanisms for attracting local resources and fairly distributing economic benefits from large-scale infrastructure projects. A variety of sources were used to comprehensively illustrate the specifics of China's infrastructure initiatives, identify key trends and patterns in their implementation, and develop recommendations for their optimisation, considering the interests of the participating countries and international standards of transparency and integrity.

Results

Main directions, scale and consequences of Chinese infrastructure megaprojects in Eurasia and Africa. The "One Belt, One Road" initiative proposed by China in 2013 has become a significant factor in the expansion of Chinese infrastructure investment in Eurasia and Africa. This ambitious strategy, aimed at developing transport corridors, energy networks and economic ties between China and the countries of Eurasia and Africa, envisages the implementation of large-scale infrastructure projects worth more than USD 1 trillion (Yu, 2020).

China positions the "One Belt, One Road" initiative as a platform for deepening economic integration and promoting the joint development of participating countries. However, despite the declared goals, this initiative is also seen as an expansion of Chinese geopolitical influence and strengthening its strategic positions in key regions of the world (Petry, 2023). Chinese infrastructure megaprojects in Eurasia and Africa cover a wide range of sectors, with transport, energy, and telecommunications occupying a special place. In the transport sector, China actively invests in the construction

of roads, railways, ports and airports to improve connectivity between countries and stimulate trade. Examples include the Mombasa-Nairobi railway in Kenya and the Hambantota port in Sri Lanka. In the energy sector, Chinese companies are involved in the construction of power plants, transmission lines, and oil and gas pipelines. These projects are aimed at meeting the growing energy needs of recipient countries and expanding access to electricity. However, they also raise concerns about the increasing energy dependence of these countries on China (Strange, 2023). Telecommunications infrastructure is another priority area for Chinese investment. Companies such as Huawei and ZTE actively contribute to the development of mobile and internet networks in Eurasia and Africa. Despite the potential benefits of digital transformation, these initiatives also raise questions about cybersecurity and data control (Heeks, *et al.*, 2024). Controlling ports at key points on global trade routes is an important element of China's geo-economic strategy. By investing in the development and modernisation of ports in Asia, Africa, and Europe, China seeks to ensure the smooth functioning of its export and import operations and to increase its influence on international trade. A prominent example is the port of Piraeus in Greece, which, after significant Chinese investment, has become one of the largest container ports in the Mediterranean and a key transit hub for Chinese goods en route to Europe (Lin & Kaplan, 2023; Oulmakli *et al.*, 2023).

In terms of access to valuable minerals, China actively invests in the exploration and production of rare earth elements, lithium and other strategic resources in Africa, Asia and Latin America. These resources are critical for the development of high-tech industries such as electric vehicles, wind turbines, electronics and weapons. By securing control over the production and supply of these resources, China aims to strengthen its position in global value chains and reduce its dependence on imports (Liu, 2023).

Chinese infrastructure megaprojects cover a wide geographical area (Fig. 1), including Central, South and Southeast Asia, the Middle East, Eastern Europe and Africa. In Asia, Chinese key partners in implementing infrastructure initiatives are Pakistan (China-Pakistan Economic Corridor) (Afzal *et al.*, 2023), Kazakhstan (Western Europe-Western China Highway) (Yermekbayev *et al.*, 2022), Sri Lanka (Hambantota Port) (Wignaraja *et al.*, 2020), and others. On the African continent, China actively invests in infrastructure projects in countries such as Ethiopia (Addis Ababa-Djibouti railway) (Weng *et al.*, 2021), Nigeria (Lagos-Calabar railway) (Yahaya, 2022), etc. In general, according to the Ministry of Commerce of the People's Republic of China, from 2013 to 2018, Chinese companies implemented more than 3,000 (Zhang *et al.*, 2022) infrastructure projects in different regions of the world.



Figure 1. Projects included in the Chinese initiative “One Belt, One Road”

Source: Mapping the Belt and Road Initiative (2018)

Chinese infrastructure megaprojects have significant potential to stimulate economic growth and development in recipient countries. Modernisation of transport and energy infrastructure reduces logistics costs, improves access to markets and resources, attracts foreign investment and boosts trade. For example, the World Bank estimates that the implementation of the Mombasa-Nairobi railway project in Kenya could increase the country's GDP by 1.5% annually (Basu & Janiec, 2021).

However, the real economic benefits of Chinese mega-projects are often lower than expected. Much of the money is returned to China as payments for goods, equipment, and services provided by Chinese companies. In addition, such projects may pose risks to the macroeconomic stability of recipient countries due to the accumulation of debt obligations to China. Chinese infrastructure initiatives have the potential to create new jobs and increase incomes in recipient countries. The construction and maintenance of infrastructure facilities require a significant amount of labour, which can reduce unemployment. In addition, improved transport accessibility and energy supply can stimulate local business and entrepreneurship. However, in many cases, Chinese companies prefer to hire domestic employees, limiting employment opportunities for the local population. Moreover, the implementation of megaprojects is often

accompanied by the forced resettlement of communities and the loss of traditional livelihoods, which negatively affects welfare and social stability (Morgan & Ghiselli, 2023).

The implementation of Chinese infrastructure mega-projects often involves significant environmental risks. The construction of roads, ports, power plants and other facilities can lead to deforestation, land degradation, water pollution and loss of biodiversity. Projects in environmentally sensitive regions, such as the African rainforests or the Mekong River basin in Southeast Asia, are of particular concern (CSIS, 2023). Chinese companies and banks often do not pay due attention to environmental and social standards when implementing infrastructure projects abroad (Coenen *et al.*, 2021). This causes conflicts with local communities and environmental organisations, as well as reputational risks for China in the international arena.

Challenges of Chinese infrastructure projects in Eurasia and Africa: interests of the participating countries. One of the key problems associated with Chinese infrastructure megaprojects is the risk of recipient countries becoming debt-dependent on China. Much of the funding for these initiatives comes from Chinese loans and investments, which are often provided on non-transparent and unfavourable terms for borrowers. As a result, countries may find themselves in a situation where they

are unable to service their debt obligations to China, leading to economic and political dependence (Wong, 2023).

A notable example is the case of Sri Lanka, which, unable to repay its loans, was forced to lease the strategic port of Hambantota to China for 99 years. Such situations raise concerns about China's potential use of "debt trap diplomacy" to expand its geopolitical influence (Gangte, 2020).

The implementation of Chinese infrastructure mega-projects is often accompanied by high corruption risks and a lack of transparency. Mohammed Abdullah Swazuri, chairman of the National Land Commission, and Atanas Kariuki Maina, chairman of the Kenya Railways Corporation, were arrested on suspicion of corruption in the allocation of land for the construction of the new USD 3 billion Nairobi-Mombasa railway. The investigation that led to the arrests centred on allegations that officials misappropriated taxpayer money through fictitious compensation claims for land used for the railway. Although Chinese companies are not directly mentioned in the case, this case demonstrates how corruption can undermine the effectiveness and legitimacy of even Chinese-funded projects. It is worth noting that this corruption scandal occurred amidst a broader debate over the economic viability of the Mombasa-Nairobi railway project. Opposition leaders and Kenyan economists have criticised the financing of the project for increasing the country's debt burden, which, according to IMF estimates, was 54-55% of GDP in the 2017-2018 fiscal year (Malalo, 2018).

The processes of contractor selection, contract allocation and financing often take place behind the scenes, without proper oversight and competitive procedures. This creates a favourable environment for corruption and abuse by both Chinese companies and local officials. The lack of transparency of Chinese infrastructure initiatives makes it difficult to assess their real cost, efficiency and impact on the economies and societies of recipient countries. Lack of access to information hinders public scrutiny and participation, undermining democratic processes and government accountability. A striking example of this is the Budhigandaki hydropower project in Nepal. In June 2017, the Nepalese government signed a contract with China Gezhouba Group Corporation (CGGC) to build the 1,200 MW Budhigandaki hydroelectric power plant for USD 2.42 billion. However, the details of the deal, including financing terms and profit sharing, have not been made public, raising concerns among experts and the public about potential financial risks and a lack of transparency in the decision-making process. In November 2017, following sharp criticism from opposition lawmakers and allegations of corruption, the Nepalese government cancelled the CGGC contract at the behest of a parliamentary committee. Deputy Prime Minister and Minister of Energy Kamal Thapa stated that there were irregularities in the contract and that it was signed without following proper procedures (Nepal scraps mega hydropower..., 2017).

This case illustrates how the lack of transparency in the contracting process for Chinese infrastructure projects can cause political conflicts, corruption allegations, and ultimately the cancellation of the projects. Not only does the lack of transparency undermine public confidence in the decision-making process, but it also poses risks to

the projects themselves, as they become vulnerable to criticism and opposition from various political forces. Although the Budhigandaki hydroelectric project was eventually cancelled, this example highlights the importance of ensuring transparency, accountability and good governance in the implementation of large-scale infrastructure initiatives, regardless of the source of their funding. Only through open access to information and the involvement of all stakeholders can the effectiveness, sustainability and legitimacy of such

Another contradiction of Chinese infrastructure mega-projects is the limited involvement of local resources and companies in recipient countries. Chinese contractors often prefer to use domestic materials, equipment and labour, which minimises opportunities for local economic development and technology transfer. As a result, a significant portion of the economic benefits of the projects are captured in China rather than in the recipient countries (Morgan & Ghiselli, 2023). An example of the limited involvement of local resources and companies is the projects under the China-Pakistan Economic Corridor (CPEC). The share of Pakistani companies in CPEC projects is only 18%, while the rest of the contracts are awarded to state-owned and private companies from China. Moreover, Chinese contractors often import construction materials, equipment, and even labour from China, limiting opportunities for local businesses and workers. It is telling that Pakistani workers have been deliberately excluded from the design and engineering level of major CPEC projects. What could have been a development opportunity for Pakistanis turned into a one-sided phenomenon as Beijing, following its "imperialist" tendencies, sent its labour force to Pakistan (The China Pakistan economic..., 2023).

This practice is causing dissatisfaction among local businesses and the population hoping to reap economic benefits from CPEC projects. Pakistani companies complain about the lack of equal opportunities and transparency in the process of contract allocation, as well as the dominance of Chinese contractors in the market (The China Pakistan Economic..., 2023). This underscores the need for a more balanced and inclusive approach to infrastructure projects that maximises local resource use and facilitates technology and knowledge transfer to recipient countries.

The limited involvement of local businesses in Chinese initiatives not only deprives countries of potential economic opportunities but also undermines the sustainability and effectiveness of the projects themselves. The lack of local expertise and consideration of the specific needs and conditions of recipient countries can lead to miscalculations in the planning and implementation of infrastructure projects, which in the long run reduces their usefulness and payback.

An example of this problem is the Hambantota port in Sri Lanka. This project, financed and implemented by Chinese companies, was presented as a key driver of the country's economic development. However, due to the limited consideration of local conditions and needs, the port proved to be commercially unviable. Despite significant investments, no sufficient cargo traffic was attracted, and the port was making losses. The situation was exacerbated by the fact that the planning and implementation of

the project did not adequately consider the views of local stakeholders, including fishermen and farmers whose livelihoods were affected by the port's construction. This led to social conflicts and protests, which further undermined the port's performance. As a result, instead of becoming an engine of economic growth, the Hambantota port turned into a debt burden for Sri Lanka. The country was unable to service the Chinese loans provided for the construction of the port and was forced to lease it to a Chinese state-owned company for 99 years as part of a debt management agreement (Gangte, 2020).

To minimise corruption risks and ensure the effectiveness of Chinese infrastructure megaprojects, it is necessary to introduce transparency and accountability mechanisms at all stages of their implementation. This involves ensuring open access to information on project planning, financing and implementation, independent audits and evaluations, and involvement of the public and local stakeholders in decision-making processes. China and the recipient countries should cooperate in developing and implementing international standards of transparency and integrity within the framework of the Belt and Road Initiative. This will increase the credibility and legitimacy of the projects, as well as ensure their compliance with the principles of sustainable development and good governance.

In the context of ensuring transparency and integrity under the "Belt and Road Initiative", China and the recipient countries can rely on several international standards and guidelines developed by reputable organisations. The G20 High-Level Principles for Promoting Integrity and Transparency in Infrastructure Development: these principles, endorsed by G20 leaders in 2019, establish a framework for promoting transparency, integrity and good governance in infrastructure projects. They cover aspects such as budget transparency, open and competitive tender procedures, and risk assessment and management (G20 Osaka Leaders'..., 2019).

CoST Infrastructure Transparency Standard: Launched in 2012, this initiative aims to increase transparency and accountability in public infrastructure projects by disclosing key information at all stages of the project cycle. CoST establishes a set of 40 data points that must be published for each project, including details of contracts, costs and outcomes (Infrastructure Transparency Initiative..., 2024).

OECD Guidelines for Fighting Corruption and Promoting Integrity in Public Investment, published in 2016, guide governments on how to strengthen anti-corruption mechanisms and promote integrity in the planning, allocation and implementation of public investment projects. It covers aspects such as conflict of interest management, whistleblower protection and beneficial ownership transparency (Recommendation of the Council on Guidelines..., 2019). Implementation of these and other relevant international standards in the Belt and Road Initiative projects will help to increase their transparency, integrity and sustainability. This, in turn, will help build trust between China and the recipient countries, and ensure that the projects comply with international best practices in infrastructure management.

To maximise the economic benefits and sustainability of Chinese infrastructure megaprojects, it is necessary to

ensure the active involvement of local resources and companies in recipient countries. Chinese contractors should give preference to the use of local materials and services, as well as provide employment and training for local workers. This will stimulate the development of the local economy, create new jobs and develop human capital. Another important aspect is to facilitate the transfer of technology and knowledge from Chinese companies to local partners. Joint ventures, training and experience exchange programmes can help recipient countries develop their capacity in the construction and management of infrastructure facilities, which will have a long-term positive impact on their economies and societies.

To ensure a fair distribution of economic benefits from Chinese infrastructure megaprojects, it is necessary to develop appropriate mechanisms and agreements between China and recipient countries. This may include requirements for a certain percentage of local content in projects, commitments to reinvest a portion of profits in the development of local communities, and equitable distribution of revenues from the operation of infrastructure facilities. In addition, it is necessary to ensure that the economic benefits of mega-projects are not concentrated in the hands of a narrow circle of elites but are distributed among the general population. To do this, it is necessary to introduce mechanisms of social protection, support for small and medium-sized businesses, and invest in human capital development and the provision of basic services.

There are several examples of successful application of mechanisms for attracting local resources and equitable distribution of economic benefits in the implementation of large-scale infrastructure projects in other countries. The Local Content Programme in Nigeria: In 2010, the Nigerian government introduced the Local Content Programme in the oil and gas sector, which obliges foreign companies to engage local resources and personnel. The programme requires companies to give preference to local contractors, ensure technology and knowledge transfer, and invest in the development of local communities. The initiative increased the share of local content in oil and gas projects from 5% in 2010 to 28% in 2017, which contributed to the creation of thousands of jobs and the development of the local economy (Local Content Digest, 2022).

The State Directive model in the Norwegian oil and gas sector: after the discovery of significant oil and gas reserves on the Norwegian continental shelf in the late 1960s, the Norwegian government introduced the State Directive model to manage these resources. According to this model, all oil and gas resources were declared state property, and their development was carried out under strict government control to maximise benefits for Norwegian society. A key element of this model was the creation of the state-owned oil company Statoil (now Equinor), which acted as the main operator on the Norwegian shelf and an instrument for implementing government policy. Foreign oil companies were allowed to develop fields only if they partnered with Statoil and met strict requirements for technology transfer, training of local personnel and investment in the development of the Norwegian industry. Thanks to this policy, Norway was able not only to ensure maximum involvement of local resources and development of its own oil and gas sector but also to

accumulate significant funds from hydrocarbon production in a special sovereign fund (the Norwegian Pension Fund). This fund, which is currently the largest sovereign wealth fund in the world, is invested in international assets and used to finance social programmes and infrastructure development for the benefit of the entire Norwegian society (Austvik, 2014).

These examples demonstrate how the introduction of special mechanisms and agreements can attract local resources and ensure a fair distribution of economic benefits from large-scale infrastructure projects. This approach not only stimulates local economic development and job creation but also increases the legitimacy and public support for the projects themselves. The application of similar mechanisms within the framework of the One Belt, One Road initiative could help overcome existing contradictions and ensure a more balanced and mutually beneficial nature of Chinese infrastructure mega-projects in Eurasia and Africa. This, in turn, would contribute to the sustainable development and prosperity of all parties involved.

In summary, the results of this study demonstrate the significant scale and potential benefits of Chinese infrastructure megaprojects in Eurasia and Africa but also reveal several contradictions and challenges associated with their implementation. To ensure the sustainability, effectiveness and equity of these initiatives, it is necessary to introduce mechanisms for transparency, local resource mobilisation and fair distribution of benefits. Chinese mega-projects can become truly mutually beneficial and contribute to the long-term development and prosperity of all parties involved only if the interests and needs of recipient countries are considered.

Discussion

The findings of this study demonstrate the significant scale and potential benefits of Chinese infrastructure megaprojects in Eurasia and Africa but also reveal several contradictions and challenges associated with their implementation. In particular, the analysis shows that Chinese investments cover a wide range of sectors, including transport, energy, telecommunications, and resource extraction, and have significant potential to stimulate economic growth and infrastructure development in recipient countries. At the same time, the study revealed an asymmetry of benefits from Chinese projects, with an advantage for Chinese companies, and several social, environmental and debt risks that accompany their implementation. Critical reflection on the findings considering existing research allows us to identify both common patterns and specific accents and nuances in the assessment of Chinese infrastructure expansion in Eurasia and Africa.

Z. Liu *et al.* (2020) reflected in the conclusions of this paper regarding the unprecedented growth of Chinese investment in infrastructure projects abroad after the launch of the “One Belt, One Road” initiative. At the same time, the authors offer a more nuanced view of the motives for Chinese expansion, focusing on the diversity of Chinese stakeholders’ interests at different levels, rather than a monolithic strategy of global domination. This perspective enriches the analysis of this study by highlighting the complexity and ambiguity of Chinese

initiatives. R.T. Lisinge (2020) and this paper complement each other by providing a more specific view of the cooperation between Africa and China within the framework of the Belt and Road Initiative. The author emphasises the need to find synergies between Chinese and African infrastructure programmes to ensure a mutually beneficial partnership, which resonates with the recommendations of this paper. At the same time, unlike this study, R.T. Lisinge focuses less on analysing the contradictions and challenges associated with Chinese investment, focusing instead on lessons for African countries. This difference in focus does not detract from the value of R. T. Lisinge’s findings but rather reflects the specifics of his research objectives.

In turn, the study by D. Brautigam *et al.* (2020) makes a significant contribution to understanding the scale of Chinese lending in Africa by providing valuable quantitative data on the share of Chinese loans in African debt. This is reflected in the paper’s findings that the extent of Chinese control over African debt is often exaggerated in public discourse while providing additional insights into the terms and structure of Chinese loans. This data significantly enriches the more generalised analysis of debt risk in this study, contributing to a more balanced understanding of the dynamics of the China-Africa debt partnership. However, in contrast to this paper, Brautigam *et al.* devote less attention to the analysis of other problematic aspects associated with Chinese investment, such as social and environmental impacts.

M. Ericsson *et al.* (2020), on the other hand, offer a thorough quantitative analysis of China’s increasing control over mining in Africa and globally. It confirms the key findings of this paper on China’s growing, but not dominant, role in the sector, complementing them with detailed country, metal and company data. This information significantly complements the more generalised analysis in this paper, allowing for a better understanding of the specifics of Chinese expansion in the mining sector and its impact on Africa and the world. At the same time, unlike this paper, M. Ericsson *et al.* (2020) focus on quantitative indicators of the growth of Chinese investment, paying less attention to the analysis of related contradictions and risks.

V. Lokanathan (2020) and this paper complement each other by focusing on the geopolitical and geo-economic aspects of China’s presence in Africa under the Belt and Road Initiative. It confirms the thesis of this paper that Chinese companies often invest in Africa to export excess capacity and labour, while also highlighting strategic concerns and growing resistance from African countries. These observations significantly complement the more nuanced analysis of the geopolitical dimensions of Chinese expansion in this study, highlighting its contradictory and ambiguous nature. At the same time, unlike this study, V. Lokanathan focuses less on the analysis of the economic and social consequences of Chinese investment for recipient countries.

On the other hand, the work of A. Zakari & I. Khan (2022) organically complement the results of this study by providing empirical evidence of the positive impact of Chinese investment on economic growth in Africa in the example of the energy sector. It focuses on the importance of institutional factors in this process, which is in

line with the arguments of this paper on the need to consider the specifics of recipient countries when assessing the impact of Chinese projects. At the same time, unlike this study, A. Zakari & I. Khan devote less attention to the analysis of contradictions and problematic aspects associated with Chinese investments, focusing on their potential economic benefits. This difference in focus does not diminish the significance of the author's conclusions but rather reflects the specifics of their research objectives.

In summary, the analysed studies are consistent with and significantly complement the main conclusions of this paper on the scope, drivers and effects of China's infrastructure expansion in Eurasia and Africa. These studies provide more detailed information and place specific emphasis on certain aspects of this process, which enriches the generalised analysis presented in this paper. At the same time, there are certain differences in methodological approaches and research focus they focus less on some of the contradictions and problematic issues highlighted in this study.

Despite these differences, all the studies reviewed agree that Chinese infrastructure initiatives have significant potential to contribute to the economic development of recipient countries, but that their actual impact depends on several factors, such as institutional quality, equitable distribution of benefits, and consideration of social and environmental impacts. They underline the need for a more balanced and nuanced analysis of Chinese expansion that avoids simplistic generalisations and considers the specifics of individual countries and projects. In this context, this study makes a significant contribution by offering a comprehensive and critical look at the successes and contradictions of Chinese infrastructure megaprojects in Eurasia and Africa. It summarises and synthesises the findings of other studies while drawing attention to several problematic aspects that are often left out of the analysis. Together with other studies, this paper lays the groundwork for further scientific reflection and practical recommendations for optimising China-Africa and China-Eurasia partnerships in the infrastructure sector.

Conclusions

The study critically analysed Chinese experience in implementing infrastructure megaprojects in Eurasia and Africa identified their successes and contradictions and developed recommendations for optimising such initiatives with due regard to the interests of the participating countries. The analysis of the main directions and scale of Chinese infrastructure projects has shown their unprecedented expansion under the "One Belt, One Road" initiative, which covers a wide range of sectors, including transport, energy, telecommunications and resource extraction. These initiatives have significant potential to stimulate

economic growth, and infrastructure development, and deepen regional integration in the recipient countries. At the same time, a study of the real economic, social and environmental impacts of Chinese megaprojects has revealed several contradictions and challenges. In particular, the asymmetry of benefits from these initiatives has been identified, with benefits for Chinese companies and limited involvement of local resources and technology transfer.

Furthermore, large-scale infrastructure projects are often accompanied by high social and environmental risks, such as forced resettlement of communities, loss of biodiversity, and environmental pollution. The analysis of the key contradictions and challenges associated with Chinese megaprojects showed that the problem of recipient countries' debt dependence on China is particularly acute, exacerbated by non-transparent lending conditions and the potential use of "debt trap diplomacy". The study also revealed high corruption risks associated with the implementation of Chinese megaprojects and the lack of proper accountability mechanisms and public oversight.

Another contradiction is the limited involvement of local resources and companies from recipient countries, which minimises opportunities for local economic development and technology transfer. Based on these findings, a series of recommendations have been developed to optimise China's infrastructure initiatives. In particular, the authors emphasise the need to introduce transparency and accountability mechanisms at all stages of project implementation, to increase the involvement of local resources and companies, and to develop appropriate agreements for the fair distribution of economic benefits. In addition, the importance of considering social and environmental standards in the planning and implementation of infrastructure projects is emphasised.

Thus, the study goal was achieved through a comprehensive critical analysis of the successes and contradictions of Chinese infrastructure megaprojects in Eurasia and Africa, identifying their consequences for recipient countries and developing practical recommendations for optimising these initiatives. At the same time, the study identified several aspects that require further study, including the long-term geopolitical and geo-economic implications of Chinese expansion, the impact of infrastructure projects on regional security and stability, and the potential for alternative models of international infrastructure cooperation.

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Conflict of Interest

None.

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