Foreign Investment and Infrastructure Development in Ghana: A Case-Based Analysis of Industrialization in Africa

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Abstract. The economy of Ghana presented a representative example for understanding how industrialization of a developing country could develop with high economic increasing rates based on the natural advantages of the resources. Throughout Ghana's history, industrialization has played an essential role in its political transformation and in providing a source of government legitimacy. Although Ghana experienced a long period of political turbulence and economic stagnation, the country found a new path toward industrialization in the 21st Century. In seeking this new path, Ghana has aimed to strike a more adaptive and flexible balance between attracting foreign investment and maintaining national sovereignty. With the increasing of foreign investments, Ghana's industrialization has experienced significant developments in several economic indexes.

Keywords: International relationship, Ghana, Africa studies, Foreign Investment, Ghana industrialization, Infrastructure development, Chinese investment in Africa, Petroleum industry Ghana, Bui Hydroelectric Dam, African economic growth, FDI in Africa, Africa studies, International relations in development

1 Introduction and Literature Review

The idea of industrialization is often reflected in a nation's economic situation and achievements. Several existing scholarships have already explored this topic from various perspectives. Based on a case study on Ethiopia by the Institute of Sociology at Justus Liebig University, the valuable of industrialization in the Africa could be generalized into three fields: the scale of industries, infrastructure development, and poverty reduction. These indexes were not only concluded by the scholars but also came from the official claiming from the commitments of African states. For example, the Ethiopia government published their economic development plan of the country from 2021 to 2030 and identified their industrialization goal as ensuring "equal economic growth and "the continuation of the high economic growth rates" [1]. From the perspective of African economies, industrialization has been centered around expanding industrial capacity, achieving equitable distribution of economic accomplishments to all citizens,

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and improving national infrastructure. This article will examine the Ghana's industrialization level based on the evaluation paradigm of the Ethiopia and Ghanaian government reports.

According to Ghana's National Development Planning Commission agenda for 2021–2025, the industrialization and economic development of Ghana strongly relied on "railway network will be expanded across the entire country" and the revenues from the petroleum industries [2]. From there, the article will focus on how the industrialization of Ghana connected to these fields and expanded to the living conditions of the citizens of Ghana. Connecting the economic growth with industrial development, the Ghanaian government—like the Ethiopian government—has sought to promote industries that could stimulate the economy of the state. Based on the government's expectations, this article will analyze Ghana's economic success through the lens of its infrastructural progress and the sustained development of its economy.

2 Ghana Infrastructure Influenced by American Foreign Investments Before 21st Century

The infrastructure development of Ghana before the 21st Century was launched and saw as an initiative phase of the state industrialization. While Ghana received great foreign investment from the United States, the Ghana also restrained its diplomatic sovereignty based on consideration of US investments into Ghanaian industrialization. When the state level corporation between Ghana and US broken due to the Congo Crisis, the US states level investments had been inherited by the private capitals who failed the Ghana states original plan of the industrialization. Besides of the diplomatic issues, the political turbulence in Ghana after the fall of Nkrumah's regime also harmed the economic development of Ghana, which led to a half-century long stagnation and declination of Ghana developments over the infrastructure until the beginning of the 21st Century.

2.1 The Ghana Dam Development

Ghana's infrastructure development has a long history connected to foreign investment. As early as the 1950s, Ghana had already established significant collaborations with foreign capital, particularly in dam construction projects. After gaining independence in 1957, Ghana's first president, Kwame Nkrumah, prioritized industrialization, with the Akosombo Dam on the Volta River as a central component of this plan. The dam was intended to store water during the rainy season and release it during the dry season, benefiting both agriculture and industry. However, the project ultimately fell short of the expectations set by the Ghanaian government. When the United States withdrew interest in financing the dam—partly due to Ghana's financial difficulties linked to the Congo Crisis—the Kaiser Corporation, a private U.S. company, seized their control and dominance of the project through the political vacuums left by the deteriorating U.S.-Ghana relations. Kaiser proceeded with the project and secured favorable terms from Ghana government, including tax exemptions and subsidies. While the collaboration

with Kaiser represented the only viable link to U.S. capital for Ghana government, the government found itself in a disadvantaged position in the project when Ghana heavily dependent on Kaiser who occupied most energies generated by the dam primarily served the corporation's aluminum production operations: approximately 60% of the dam's energy output was allocated to support the operations of Kaiser's aluminum production, limiting the benefits to Ghana's broader economy.

2.2 The Ghana Petroleum Infrastructure Development

The discovery of petroleum resources in Ghana provided a supportive economic foundation and source of revenues for the government. These energy resources were located in Ghana's territories but remained largely unexplored for decades due to political instability and limitations in technology in the last Century. Throughout the late 20th century, Ghana's petroleum industry remained underdeveloped, awaiting further exploration until political stability was restored in the 1990s. In 1992, Ghana established its first offshore oil drilling wells, marking an important starting stage for Ghana economic boosting. Drove by the massive reservation of oil resources, the state launched several petroleum projects and achieved great success in the industries. With just one year after the first offshore oil drilling well be settled, Ghana transitioned from an oil-importing country to exporting one. The growth of the oil industry brought substantial wealth to the Ghanaian state and significantly improved its fiscal situation.

2.3 Ghana Road Infrastructure Development

The development of Ghana's road infrastructure also experienced a long period of stagnation from the 1960s until the end of the 20th century due to the chaotic situation inside Ghana. However, with the stabilization of Ghana's political situation, the country's road development recovered rapidly. By 2022, Ghana's road system had expanded to 65,725 kilometers compared to the road network in the 1990s. According to World Bank, the average railway infrastructure per million population in Ghana reached 1,945.22 kilometers, far surpassing the African average of 402.44 kilometers in 2022 and nearly reached the average index of the developed countries [3]. While road development in Ghana continues to progress and expand, the country still faces challenges in transportation due to its aging railway infrastructure.

Even though the Ghana infrastructure experienced declination and stagnations in the past decades, the stabilization of Ghana political situations provided a supportive and encouraging environment for the developments of Infrastructure. Combining the foreign investments from China, an essential investor in the Africa, Ghana embraced great advances and improvements over its infrastructure from dams to road buildings.

3 Ghana Infrastructure Development with Chinese Foreign Investment in 21st Century

3.1 The Ghana Dam under the Foreign Investment

In the 21st century, Ghana's dam development became strongly connected to investments from China. A key consequence of such an investment relationship was the construction of the Bui Hydroelectric Dam. In 2006, Chinese companies and antional capitals provided investments into the Bui project, and by 2013, the dam was successfully completed. The Bui Hydroelectric Dam increased Ghana's electricity production by 22% compared to the national output in 2008 with approximately 500 MW of annual electricity production for the country [4]. Shortly after the Bui Dam project, Ghana and China signed new agreements to build a gas pipeline complex to meet the country's growing energy needs. The Ghanaian government saved their full control over the business aspects of the Bui Hydroelectric Dam with no distribution of Dam electricity productions to Chinese capitals. One important factor that influenced Ghana's level of independence in these two infrastructure projects is the absence of considerations of political interference. The Akosombo Dam project was awarded through due US consideration to counter Soviet influences in the anti-colonialism movements in 60s Africa, with purposed on finding an US ally in Africa like Soviet friendship with Egypt. In contrast, the Bui Hydroelectric Dam project came from a more economic driving consideration. The project was awarded to Sinohydro Corporation, a Chinese state-owned construction company, which approached the project with interests in Ghana resources rather than Ghana politics. In conclusion, Chinese investments in the 21st century provided Ghana with a new option for infrastructure development, offering greater independence and sovereignty during the construction process, positioning Ghana as a customer rather than merely a recipient of aid.

3.2 The Ghana Petroleum Infrastructure under Foreign Investment

Since 2015, the rich production and export of petroleum have become the driving forces behind Ghana's economic growth, doubling the GDP growth rate from 5% in 2008 to 14% [5]. Such increasing in oil production led Ghana fiscal situation into an energy exporter. A key development in this process was the construction of a pipeline connecting the offshore oil fields to the Ghana mainland. This pipeline construction project began in 2013 and was completed by 2015. Chinese infrastructure investments in Ghana's economy have resulted in mutual benefits for both parties. While Ghanian government enriched incomes from the natural resources, the Chinese capitals also found proportions from the oil productions by Ghana. Overall, Ghana's petroleum infrastructure in the 21st century has been strongly driven by foreign investments, which have stimulated and played essential role in the infrastructure development of Ghana.

3.3 Ghana Road Development under Foreign Investment

The development of Ghana's road infrastructure has been strongly supported by foreign investments based on the needs of mineral industry exports. Traced back to 1986, Japan had invested 80 million U.S dollars into the transportation of cocoa and timber exports in Ghana. In the 2000s, the World Bank also provided loans totaling 22 million U.S. dollars to support the construction of paved roads for resource exportation. Thanks to these foreign investments, Ghana's road network grew from 32,250 kilometers in 1994 to 65,725 kilometers in 2022 [6]. Overall, foreign investments also stimulated the development of Ghana's road infrastructure, based on the needs of natural resources exportation which also benefited the Ghanian domestical economies as an expanded effect.

While the infrastructure of Ghana experienced a rapid increasing in the last years, the road and energy constructions also pushed the potential decreasing of poverties in Ghana. In the case of Ghana, the infrastructure, especially the expansion of road and traffic systems, contributed most to the decreasing of poverty rates in the rural area. According to the research, the continuing and accomplished infrastructure projects in Ghana had potential abilities to decrease the poverty rates. For example, the Keta Sea project provided 68% of households living nearby income increasing with 82% increasing in education accessibility [7]. The infrastructure projects not only improved the living environments for the residents but also subsidized their living conditions by these projects. In general, even though the scholars pointed out the infrastructure projects in Ghana need to be organize better, these projects did improve and living conditions of the people who living in the rural areas.

4 Ghana's Consistent Economic Development Influenced by Infrastructure and Foreign Investment

4.1 Ghana Unemployment Rate Decreasing

Ghana's unemployment rate has decreased rapidly over the past decades. In the 1990s, the unemployment rate decreased to 22.4% and remained around 10% for a long period. Since the early 21st century, the unemployment rate has steadily decreased, lowering to 5% and stabilizing around 3% since 2017 [8]. This reduction in unemployment can be attributed to the overall growth of the economy, particularly the thriving petroleum industry, which provided many opportunities and job positions.

From 2013 to 2018, foreign investments in Ghana created 159,764 direct job opportunities. Foreign investments have become deeply integrated into Ghana's domestic economy, with 84.58% of these jobs being filled by Ghanaian citizens [9]. Additionally, 72.10% of these job opportunities came from foreign capital investments, primarily focused on natural resource sectors, while only 6% were generated from local Ghanaian investments. The reduction in unemployment and the creation of job opportunities in Ghana were strongly connected to foreign investments, which presented a direct support to increasing in employment.

4.2 Ghana Poverty Rate Decreasing

In the 1990s, Ghana's poverty rate remained around 52.7% due to overall economic underdevelopment. However, by 2023, the World Bank reported a significant reduction in Ghanaian extreme poverty where Ghanaians poverty rates decreased to 9% on the national level. While the poverty rate decreased, raising inflation rate formed a significant obstacle to further poverty decreasing. From 2016 to 2023, the number of Ghanaians living in extreme poverty remained relatively unchanged at around 6.5 million people due to high material prices from the inflation. However, when compared to the 50% extreme poverty rate in 1990, Ghana's democratic and economic recovery in the 21st century achieved significant progress. Overall, while Ghana's poverty rate has dramatically decreased since the 1990s, new challenges like inflations still affect the middle class and rural populations.

While foreign investment has indirectly contributed to reducing Ghana's poverty rate, the country's economic conditions and poverty reduction efforts are still limited by two key factors: the exchange rate of currency and inflation. Between 1990 and 2015, scholars identified a negative causal relationship between the exchange rate and foreign investment, pointed out that the persistent devaluation of the Ghanaian currency contributed to attracting foreign investments. The limitation in the financial policies of Ghana but also affected the stability of foreign investment interests in the economy [10]. The devaluating of the currencies was beneficial for exporting resources, but also increased the living burdens for Ghanaians, especially when Ghana economy was high relied on importing living goods from the international trade. There is a bidirectional relationship between foreign investment and changes in inflation rates in Ghana [11]. Since 1991, Ghana's inflation rate has never fallen below 10%, peaking at 60%. From 1991 to 2002, inflation consistently hovered around 30%. Even today, inflation rates in Ghana remain relatively on a relatively high level around 15%. The petroleum refining industries, in particular, experienced inflation rates increasing of 50% in recent years, while the inflation rates finally stabilized around 35% in 2022 [12]. While foreign investment has stimulated Ghana's economy, the deteriorating exchange rate and continuing inflation have simultaneously increased the cost of living for many Ghanaians, creating a dual economic challenge for the country's residents.

4.3 Conclusion

The evaluation of various indicators for Ghana's industrialization shows that the country's industrial growth and economic expansion are strongly linked to foreign investments, which have shown significant interest in Ghana's economy. Foreign investments have provided essential infrastructure, from electricity production to road development, and have played a key role in improving the economy, aligning with the primary goals of industrialization. However, the rapid influx of foreign investment and economic growth has also introduced new challenges. Overheating in the economy has led to rising living costs, affecting the well-being of Ghanaians, even as general income levels have increased. In conclusion, while Ghana's industrialization process has been heavily

supported by foreign investment, it has also brought with it new challenges that must be addressed in order to sustain and advance this progress.

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