China and Africa's Critical Minerals. Geopolitics, Debt and Just Transition

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> "Despite immense energy resources, Africa remains energy poor. Today, around 600 million Africans still lack access to electricity and more than 1 billion still cook their meals over open fires and traditional stoves using wood, charcoal, kerosene, coal and animal waste. The consequences are dire in terms of health, education, climate, and economic and social development, with many of these impacts disproportionally affecting women and children."
>
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Abstract

This article examines the complex causal relationship between China's growing demand for critical minerals and the rise of external debt across African countries. This dynamic is driven by the continent's integration into the global economic cycle as a supplier of strategic goods essential to both the energy transition and the digital economy. Within this framework, the study analyzes how the thirst for critical minerals impacts the evolution of external indebtedness, specifically highlighting the structural weakness of economies where exports rely overwhelmingly—nearly 80 percent—on commodities. The study hypothesizes that strategies of external borrowing, alongside Chinese investment in energy infrastructure designed to secure mineral access, intensify the economic dependence of African nations.

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Ultimately, this cycle of indebtedness and extractive dependence undermines governments' capacity to finance social welfare. This calls into question the feasibility of a Just Transition (JT) on the continent, raising doubts regarding whether the shift toward clean energy will genuinely benefit local populations or instead deepen the structural asymmetries of the New World Economic Order (NWEO).

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1. Introduction

The People's Republic of China has redefined its economic strategy through successive Five-Year Plans, advancing an industrial development project that—given the country's limited oil reserves and its strong dependence on fossil fuels—has prioritized the pursuit of alternative energy sources under the leadership of state-owned enterprises. As a result of this long-term policy orientation, seventy years later the International Energy Agency (IEA) recognizes China as a global leader in non-fossil energy projects. Within this context, Africa's strategic minerals, which are essential for addressing climate change and supporting the digital economy, have assumed a central role in international geopolitics. As noted by the IEA, "The involvement of the People 's Republic of China in African economies took off in the early 2000s, and the country became the continent's largest trading partner in 2009. China is now the fourth-largest investor in Africa and accounts for about one-fifth of all lending, much of which goes to energy and infrastructure projects. China committed USD 150 billion in loans to Africa between 2000 and 2018, roughly a quarter of which were in the energy sector." (IEA,2024:17).

Control over critical mineral supply chains in Africa—indispensable to the global energy transition—reinforces China's geopolitical influence within the NWEO. According to UNCTAD, commodities account for approximately 80 percent of Africa's total exports. This high degree of dependence constrains governments' policy space with respect to social spending, particularly when the financial costs associated with capital flows through external borrowing restrict the monetary sovereignty of African countries. The risk of default among debtor nations has increased, while interest rates have not returned to their pre-pandemic levels. Although the integration of African countries into global value chains is essential—given the strategic importance of critical minerals and rare earths—this dynamic compels a rethinking of the terms of economic development and social welfare in the region, as well as the prospects for achieving the objectives of Agenda 2030 and Agenda 2063.

One example of this is Zambia, a country whose rich reserves of copper and cobalt are strategic. "China has poured billions into Zambian mines. In September a Chinese state firm agreed to invest $1.4 bn in an upgrade to the 1,860 km Tazara railway between Zambia and the Indian Ocean port of Dar es Salaam in Tanzania. The project, originally built by China in the 1970s, was the focus of a trip to Zambia this month by China's prime minister, Li Qiang. He was the highest-ranking Chinese visitor in more than 18 years" (*The Economist*, 2025a). On the other hand, China, which is the world's fourth-largest buyer of iron ore, has promoted in Guinea, a country located in West Africa, the Simandou mining project, led by the Chinese company Chinalco, the Chinese–Singaporean consortium (WCS), and Rio Tinto. "Mining of the 3bn-tonne deposit, which would be worth some $315bn at current prices, has been on hold for nearly 30 years. Some analysts expect the boost to supply from Simandou to make iron-ore prices drop from around $100 a tonne now to as low as $70 over the next couple of years." (*The Economist*, 2025b).

2. Africa´s Extractivist Matrix and the Commodity Boom

Africa's productive matrix has been markedly extractivist since the beginning of the twenty-first century, concentrating on the export of metals, energy products, and agricultural goods. During this period, the continent recorded sustained growth, driven by the so-called super-cycle or boom in commodity prices (*commodity price boom*). This trend has made the productive matrix even more dependent on commodities than in the past, a fact acknowledged by several authors (Bourguignon, 2012; Helbling, 2012; Christensen, 2016; Ndulu & O'Connell, 2021). The region's dependence is evident: "Much of the continent depends heavily on commodities; the prolonged boom in their prices and the strong capital inflows that accompanied it—including those from China—have also been important factors. [...] The share of commodities in Sub-Saharan Africa's exports increased from 57% in 1990–1999 to 76% in 2010–2014" (Christensen, 2016, pp. 1–2). In the view of the International Monetary Fund, "While many sub-Saharan African countries, especially those that are not resource intensive, continue to face significant problems in export diversification and structural transformation, the region's commodity exporters have seen increased specialization in exports of primary commodities" (International Monetary Fund, April 2016, p. 25). Therefore, China's performance has been crucial in sustaining this boom prior to the 2007–2008 conjuncture and in maintaining its momentum up to the present. As noted by Helbling (2012, p. 30), China's strong macroeconomic stimulus policies fostered intensive investment in commodities, which accelerated the recovery of markets following the 2008

Global Financial Crisis (GFC). This price boom was accompanied by strong capital inflows into Africa, "including those originating from China" (Christensen, 2016).

In the wake of COVID-19, transformations in technological innovation position Africa such that "the continent is well positioned to capitalize on technological advances in solar and wind energy, offering considerable opportunities and substantial untapped potential" (Canuto and Hung, 2025: 7). Beyond South–South solidarity, China's presence in Africa's energy sector "is increasingly scrutinized by established and emerging powers. The United States, through initiatives such as Power Africa and Prosper Africa, has sought to reaffirm its influence on the continent. The European Union, India, Turkey, and the Gulf states have also intensified their engagements, each advancing competing visions of development cooperation. Africa, with its abundant yet underexploited energy resources, its emerging middle class, and its strategic maritime routes, represents both an opportunity and a site of contestation. Consequently, China's energy cooperation with Africa cannot be analyzed in isolation; it forms part of a broader recalibration of global power relations, in which access to resources and markets, and influence are as crucial as traditional metrics of military or financial power" (Freitas, 2025: 10).

3. Debt, Volatility, and Fiscal Vulnerability

Beyond the analysis of the economic cycle, the direct causal relationship between the process of external indebtedness and the trade balance deficit—resulting from Africa's productive structure, in which 80 percent of exports consist of commodities—establishes a dynamic of profound vulnerability. For debtor countries, whose natural resources have ironically been indispensable throughout colonial history for the industrial development project, the region has in recent decades become strategic for the restructuring of technological innovation. Today, the digital economy and the transition in response to climate change establish a relationship of dependence on external financing, thereby restricting the possibility of sovereign management of public budgets in these countries.

Undoubtedly, this severely limits social spending by prioritizing the payment of the financial costs of the loans contracted.

There are three crucial moments in the cycle of the trade balance and the cost of servicing external debt.

A first moment is the impact of the GFC and the fall in prices, as shown in Figure No. 1. Despite the initial growth driven by the super-cycle in commodity prices at the beginning of the century, the continent's structural dependence prevented African countries from adequately managing their resources (Bourguignon, 2012, p. 205). With the decline in prices, the fiscal space to implement countercyclical policies was drastically reduced (Christensen, 2016, p. 1). On the other hand, oil-exporting countries such as Algeria, Angola, and Nigeria—where crude oil came to account for more than 90 percent of exports in 2015—were significantly affected in terms of fiscal revenues and public management capacity (Christensen, 2016, pp. 2–3).

A second moment takes place during the post-crisis period, with the closure of the super-cycle and the GFC, when countries resorted extensively to external financing. This growth in debt was accompanied by a substantial change in the creditor profile. The predominance of private creditors accounted for 42 percent, multilateral institutions for 36 percent, and bilateral credits for 22 percent (UNCTAD, 2025). Public debt levels in Sub-Saharan Africa increased sharply, leading many countries to be classified in 2018 as being at high risk of debt distress (Ndulu & O'Connell, 2021, p. i33). The monetary policy of the main financial centers, characterized by zero interest rates during the second decade, fostered greater short-term borrowing at market-based interest rates and with a high refinancing risk (Ndulu & O'Connell, 2021, p. i37). This was compounded by local-currency financing, which provided flexibility but proved to be a costly option, as creditors tend to demand a higher real return than that on foreign-currency debt, further increasing debt servicing costs (Ndulu & O'Connell, 2021, pp. i36–i37).

A third moment was the response to COVID-19 and the post-pandemic period, during which the vulnerability of African countries became evident in the face of "the worst recession since the Great Depression," as highlighted by the Managing Director of the IMF, Kristalina Georgieva, who described the situation as a global crisis characterized by the unprecedented combination of a health crisis and a simultaneous supply and demand economic shock (IMF, 2020).

> "Sub-Saharan Africa had a number of countries stepping up over the last years. And, it is so tragic to see that momentum being stopped. And, there are of course, even before Coronavirus, been experiencing very dramatic difficulties: conflicts, natural disasters. Sub-Saharan Africa ought to be the center of our attention, and it is. We now have more than 30 countries applying for emergency financing. We are prioritizing rapidly responding to these requests, recognizing how critical this lifeline is for them. We are also very keen to see what more can be done. The debt relief that David Malpass and I called for, the debt standstill, is benefitting a large number of countries in Africa. As is our debt relief initiative, that the Board has

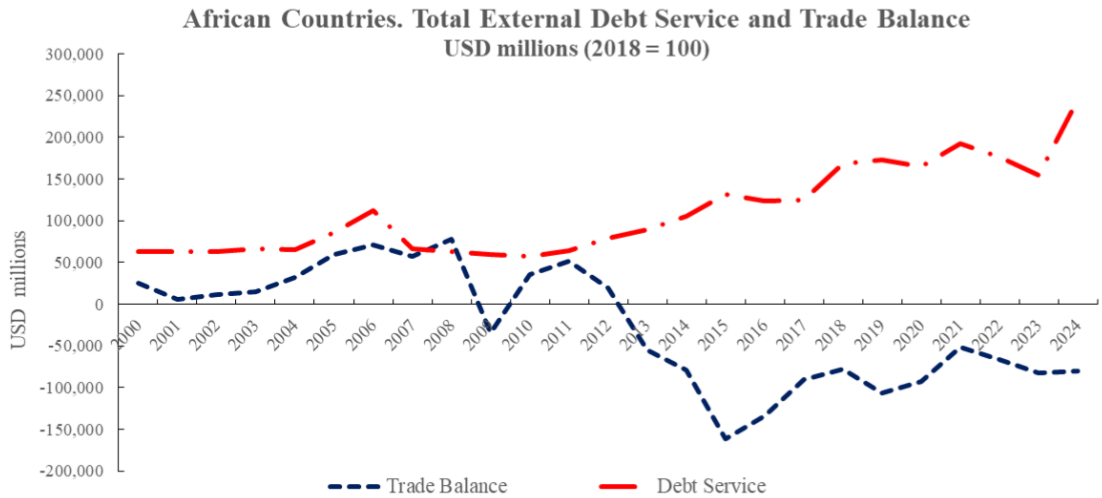
> approved. But we need to think beyond that. We need to think about recovery. We need to think about making sure that the Continental Free Trade Agreement doesn't get derailed because of Coronavirus. And that means engaging with the leadership in Africa. And, making sure that we are putting not only financial resources, but also, opening up trade channels, making sure that we support the industries, in Africa, that depend on trade, of the revival of trade. And, I want to end by saying, this Friday we are going to have an extraordinary session. President Ramaphosa, the President of the African Union, would lead us together with David Malpass. We have invited the [United Nations] Secretary General, as well as leaders from the Continent, and the friends of the Continent, on mobilization with Africa. And I am sure we would come out of it with very concrete commitments to support the Continent, to support Sub-Saharan Africa the broader African continent" (IMF, 2020).

Despite the channeling of funds to African countries, the message was to advise governments to "spend as much as you can, but keep the receipts" (IMF, 2020). While this phrase xfconstituted a rapid and forceful message aimed at protecting lives and preventing a decline in GDP, in the words of the IMF it also encouraged a massive inflow of institutional investors under the promise of a post-pandemic recovery with rising interest rates.

These three moments illustrate the deep relationship of dependence between the trade balance deficit and the cost of external indebtedness, which is crucial for the performance of economic development. The downturn during the GFC and the change in the debt profile after 2010, together with COVID-19 and the pressure of the global health and economic crisis, have laid the foundations of African vulnerability, limiting sovereign capacity to manage resources and finance social development. The current multilateral response acknowledges the urgent need to free up resources for these countries, reinforcing the argument that African fiscal sustainability requires solutions that go beyond the traditional economic cycle by addressing the structure of dependence and the burden of debt.

The hypothesis advanced by Bourguignon when referring to the super-cycle prior to the GFC represents only the guideline that persists across a region dependent on commodities. At present, this dependence is expressed in moments of high vulnerability, given that the "difficulty lies in the fact that both downward and upward trends in the real prices of primary commodities exported by Sub-Saharan African countries—and therefore in their terms of trade—have been accompanied by such a high level of volatility that it has been impossible to identify these trends. Part of the inability of Sub-Saharan African countries to take advantage of them, or to avoid managing them inadequately, and thus part of the so-called commodity curse, lies precisely in this volatility" (Bourguignon, 2012, p. 205).

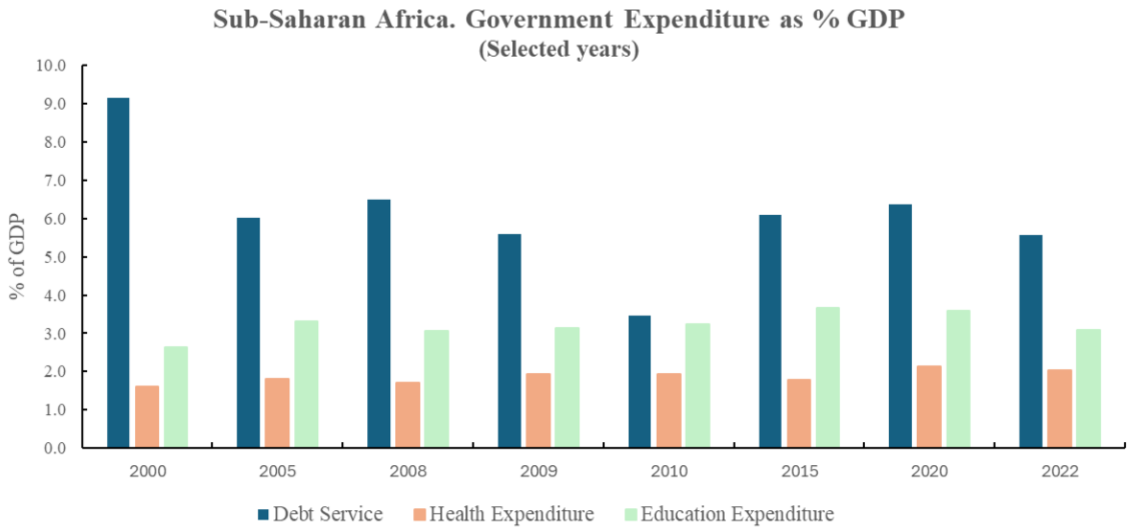
Graphic No. 1



Source: Own elaboration with data from UNCTAD (s.f.), *Data Hub*, (https://unctadstat.unctad.org/EN/); The World Bank Group (s.f.), *World Development Indicators,* (https://databank.worldbank.org/source/), and the Bank of International Settlements (s.f.), *Global statistics Data Portal*, (https://data.bis.org/).

Dependence on natural resource exports has made the budgets and debt-servicing capacity of Sub-Saharan Africa deeply sensitive to price volatility, a phenomenon known as the "commodity curse" (Bourguignon, 2012, p. 205). This structural vulnerability has been exacerbated by two moments of GFC that have redefined the conditions of indebtedness across the continent.

In the following Graphic No. 2, the financial cost of external debt and spending on health and education are shown in relation to GDP.



Source: Own elaboration with data from World Bank Group (s.f.), *World Development Indicators*, (https://databank.worldbank.org/source/) and International Monetary Fund. (October, 2025), *World Economic Outlook Database*, (https://www.imf.org/en/publications/weo/weo-database). Retrieved December, 2025.

4. Conclusions and the Challenge of the Just Transition

The relationship between China, critical minerals, and African debt represents a critical nexus for the continent's sustainable development. Africa's integration into global value chains, while essential for the digital economy and the fight against climate change, perpetuates its dependence on commodities and exposes it to financial volatility. The underlying problem is not investment itself, but rather the lack of economic diversification and chronic fiscal vulnerability. The stark reality is that many countries rely on resource extraction as their primary source of revenue to provide public services and service their debt.

This creates a fundamental dilemma for the Just Transition (JT). On the one hand, the gradual phase-out of fossil fuel production (or the overexploitation of other resources) could have profound consequences for citizens' living standards in the areas where natural resources are geographically located (Steadman et al., 2023, p. 1). The export of these resources without adding value along the production chain for inputs to the digital economy and climate change does not generate benefits in response to public policies aimed at supporting local communities. There are no short-term policies in place to increase social spending in these areas for the JT. To mitigate these risks, short- and medium-term policies should focus on reserve accumulation and fiscal adjustments. However, the long-term solution, as pointed out by Bourguignon (2012, p. 219), necessarily involves reducing the overall importance of primary commodity exports through the diversification of economic activity.

China has positioned itself as a dominant actor, not only as the fourth-largest investor in Africa, but also as the provider of roughly one quarter of total lending, much of it directed toward infrastructure that facilitates the extraction and export of commodities. China's strategy to secure the supply of critical minerals—essential to its industrial project and to the global energy transition—has translated into profound geopolitical and financial influence in Africa. Within China's geopolitical framework, indebtedness fulfills a function in the extraction of critical minerals for its new industrial project in the international order, without considering the financial costs, the economic cycle of commodity prices, or the contestation surrounding the Just Transition. Countries that depend on oil and gas revenues are extremely vulnerable to price crises, which has contributed to an increase in the debt burden (Steadman et al., 2023). In Sub-Saharan Africa, the rise in public debt between 2012 and 2018 was more pronounced in oil-dependent countries (Steadman et al., 2023, p. 28).

In conclusion, only in this way will African countries be able to recover their fiscal sovereignty and generate the necessary budgetary space to comply with Agenda 2030 and the Agenda for Development 2063, ensuring that the wealth generated by their critical minerals translates into genuine social welfare for their populations. The high degree of vulnerability lies in the restriction of social spending. That is, the need to allocate resources to debt repayment reduces governments' fiscal space for social spending and limits the monetary sovereignty of African countries. Under the current outlook (October 2025), indebtedness in Sub-Saharan Africa continues to increase, while international aid flows have declined. This raises the probability of severe disruptions in essential public services, with serious humanitarian consequences (International Monetary Fund, October 2025, p. 3).

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