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## **The State, Corporations, or the People: Who Benefits from Mining in Zambia?**

Léonce Ndikumana, Dale Mudenda,  
and Bilen Gurara

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# The State, Corporations, or the People: Who Benefits from Mining in Zambia?<sup>1</sup>

Léonce Ndikumana<sup>2</sup>

Dale Mudenda<sup>3</sup>

Bilen Gurara<sup>4</sup>

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## Abstract

The expectations that Zambia's vast endowment in mineral resources would drive economic transformation and propel the country to higher levels of living standards remain elusive. The country is still confronted with chronic macroeconomic trade and fiscal imbalances, a heavy debt burden, shortage of foreign exchange reserves with attendant pressures on the value of the national currency. The contribution of mineral exploitation to employment, government revenue, foreign exchange earnings, economic growth and poverty reduction remains suboptimal. Yet, the sector continues to attract substantial attention from foreign investors and remains dominated by foreign corporations. So, if the people of Zambia are not reaping adequate benefits from mineral resource exploitation, then who is capturing the rents? This paper provides a review of the history, industrial organization and management of the mining sector, and explores the factors that have constrained the performance of the sector with an emphasis on the role of the ownership structure, the fiscal regime, exposure to external shocks, and lack of transformational orientation of the sector. The paper draws some policy suggestions for the improvement of the performance of the mining sector going forward.

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<sup>2</sup> Distinguished Professor, Department of Economics and Political Economy Research Institute, University of Massachusetts Amherst. Corresponding author: [ndiku@umass.edu](mailto:ndiku@umass.edu)

<sup>3</sup> Professor, Department of Economics, University of Zambia, [dalemu7@gmail.com](mailto:dalemu7@gmail.com)

<sup>4</sup> PhD student, Department of Economics, University of Massachusetts, [bgurara@umass.edu](mailto:bgurara@umass.edu)

Before the beginning of colonial rule, smelters and blacksmiths were “wealthy and influential” members of their societies... For the products of their crafts, they received high rewards from the chiefs and ordinary citizens. However, with the coming of colonial rule, the imported goods such as knives, hoes and axes provided a very strong competition to the local products... Gradually the imports won the competition. Smelting was proscribed and became punishable offence (Musambachime 2016: 316–317).

It was Zambia’s good fortune to be “born with a copper spoon in its mouth”, although for much of the 45 years since independence in 1964, natural resource dependence has been more of a curse than a blessing (Adam and Simpasa 2010:85).

## 1. Introduction

Zambia is best known for its vast endowment in mineral resources, which have attracted the attention of foreign investors and traders since the start of the 19<sup>th</sup> century;<sup>5</sup> and maybe even earlier. That interest persists today. Zambia is the ninth largest producer of copper in the world, with about 760 thousand tons in 2023, second in Africa behind the Democratic Republic of Congo (USGS).<sup>6</sup> The country also has a wide range of other minerals in various quantities, including strategic products such as cobalt, lithium, nickel, and gemstones.

Long before Western traders set foot on the Zambian soil, mining was a source of livelihood for the indigenous populations who fabricated various tools and ornamental objects from surface-level artisanal mining (Chitonge, 2021; Musambachime, 2016; Cunningham, 1981; Robinson 1933).<sup>7</sup> The entry of Europeans in the sector marked the end of domestic control of mineral resources, as the sector was captured to serve of the interest of foreign companies and the colonial British regime, while the natives were formally banned from engaging in mining. After independence in 1964, the new national leadership sought to take control of the sector, which they considered a driver of economic growth. Hence the government of President Kenneth Kaunda (in power from 1964 to 1991) embarked on a nationalization strategy, transferring the control of the mines into state-owned enterprises and setting up regulatory agencies to manage and enforce the state-led mining regime. Moreover, the mission of mining was expanded to include the provision of welfare services to the citizens, referred to as the “cradle to grave” model.

The state-led mining development model encountered severe challenges, and the sector suffered from underinvestment in expansion and maintenance, leading to stagnation and decline in production and chronic losses by mining houses. By the 1980s it was clear that the model had failed, and reform and re-privatization became inevitable. The evidence shows that the performance of the sector in terms of production and exports has reflected changes in policy regimes in addition to trends and fluctuations in global demand and prices of minerals. The failure to transform and diversify the structure of the economy away from mining has exposed and continues to expose the Zambian economy to the vagaries of global commodity markets with severe consequences for its macroeconomic balances and sustainability of economic growth. Hence,

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<sup>5</sup> See, among others, Musambachime (2016); Cunningham (1981).

<sup>6</sup> USGS, Copper - Mineral Commodity Summaries 2024, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-copper.pdf>

<sup>7</sup> Also see Sikamo et al. (2016) and Roberts (1976).

as the data presented in this paper shows, international copper price volatility is a key driver of production, employment, government revenue, exports, and foreign exchange earnings.

A key driver of the country's benefits from mining is the fiscal regime that governs the engagement of private operators in the sector. The objective of the fiscal regime is to maximize revenue while creating an environment that attracts private investment. With a sector that is dominated by private foreign companies, the main instruments of revenue generation are the royalties embedded in the mining agreements and earnings from government minority shareholding in the companies. Overall, there is broad consensus that despite various reforms aimed at increasing revenue generation, the main structure of the fiscal regime has not changed and that the model has yielded suboptimal results over time. In fact, it has been regarded as relatively lenient compared to international standards among mineral producers (Adam et al., 2014; Adam and Simpasa, 2010).

Zambia has struggled to leverage its mineral endowment to ride the commodity booms which are expected to increase foreign exchange inflows through both expansion of export volumes as well as a foreign direct investment. Instead, the country has continued to nurse chronic fiscal and trade deficits and is currently contending with a heavy debt burden whose servicing drains the limited hard-earned income from mineral exports. The country was the first to declare debt default in the context of the COVID-19 crisis, forcing the government to seek assistance from creditors to alleviate the debt burden through restructuring. The shortage of foreign exchange reserves, and the volatility of inflows continue to put pressure on the national currency, exemplifying the difficulties associated with being a 'copper currency'.

It is expected that mineral resource exploitation would generate wealth for the country and elevate the living standards of the country. This seems to not have happened in the case of Zambia. And to the extent that wealth has been generated, it remains heavily concentrated in the hands of the very tiny fraction of the population on the top of the ladder. Some of the wealth is stashed offshore in secrecy jurisdictions, as it results from capital flight notably through export misinvoicing, transfer pricing and other manipulations of trade and financial transactions.<sup>8</sup> The contribution of mining to the people's wellbeing also remains inadequate. The data presented in this paper suggests that while regions with mining activity appear to have relatively lower incidence of poverty, overall, the improvements in poverty reduction are inadequate and slow. The paper aims to explore the various factors behind the general underperformance of the mining sector in Zambia since independence, with a view to shed light on strategies to improve performance going forward.

The paper is organized in eight substantive sections in addition to this introduction and the conclusion. The next section provides a brief historical narrative of the emergence of the copper mining industry. Section 3 discusses the industrial organization and Section 4 reviews the regulation of the mining sector, including an evaluation of the role of the state in the management of the sector. Section 5 is devoted to the analysis of the fiscal regime that governs mining. Section 6 exposes the challenges associated with the structural dependence on the mining sector resulting from the failure to diversify the economy. In Section 7, we discuss external financing of mining, highlighting the challenges associated with dependence on debt, and we further assess possible causes for the country's inability to leverage mineral booms in terms of foreign exchange earnings and exchange rate stability. Section 8 discusses wealth accumulation onshore and

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<sup>8</sup> See Ndikumana (2023) for estimates of capital flight from Zambia, and Mudenda and Ndikumana (2023) for analysis of misinvoicing of mineral exports from Zambia.

offshore. Section 9 discusses the linkages between mining and the regional poverty profile and the overall trend of poverty incidence to assess whether the country has benefited from mineral exploitation to raise the living standards of its people. The last section concludes with some policy suggestions.

## 2. **Becoming a Mining Economy**

Zambia is a mining economy, and it has been so long before its encounter with European traders in the 18<sup>th</sup> century (Ndulo, 1977; Chitonge 2021; Robinson 1933). The capture of its mining sector by the Europeans before the colonial period marked the beginning of the end of the country's control over its natural resources. This section recounts the evolution of mining over time starting from the pre-colonial era.

### *Mining in the pre-colonial and colonial times*

In the pre-colonial era, local populations engaged in mining using primitive technologies, which limited them to the extraction or harvesting of surface-level mineral deposits. The Portuguese were the first Europeans to set foot in modern-day Zambia in the eighteenth century, attracted by gold trade. They established a mission at Zumbo at the confluence of Luangwa and Zambezi river. In addition to gold, the Portuguese gradually extended trade to copper and ivory. From the Zumbo mission, they exported over 300 tons of copper annually. Naturally, as the Europeans monopolized the mining industry this created resentment among the local population which was sidelined in their own territories. In the 1800s, local tribes destroyed the Portuguese stronghold, which disrupted mineral trade (Ndulo, 1977).

The prospecting and commercialization of minerals in Zambia began during the late 1800s and gained pace after the partition of Africa at the Berlin Congress in 1884 that granted control of most of the Southern African region to the British crown up to the Congolese border. In turn, the British Crown granted power to the British South African Company (BSAC) to annex and administer the territories situated North of the Limpopo on its behalf (Mudenda and Bardouille, 1988)<sup>9</sup>. The BSAC signed treaties with local chiefdoms that granted them protection while prohibiting chiefs from signing similar agreements with competing companies.<sup>10</sup> Through these treaties, the chiefs ceded mineral rights to the BSAC, which ultimately leased areas for prospecting to private investors, marking the beginning of the surrender of control of mining to foreign corporations, which endures until today in Zambia as in other African resource-rich countries. The BSAC retained the mineral rights even after the country became a British protectorate in 1924, and therefore the colonial government had no control over income from copper mining (Chitonge, 2021, p.132). It was reported that between 1923 and 1940 the BSA earned twice as much as the estimated £2.4 million tax revenue received by the colonial government (Chitonge, 2021 citing

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<sup>9</sup> The BSAC's rule was terminated in 1924 and the British government assumed responsibility.

<sup>10</sup> Examples of treaties were with King Lewanika of modern-day Zambia, Mzilikazi and Lobengula of modern-day Zimbabwe

Baldwin (1966) and Roberts (1982)).

BSAC-led investments in exploration lead to the discovery of various minerals including lead and zinc deposits at Broken Hill (modern day Kabwe), which were opened between 1905 and 1910, and subsequent development of Bwana Mkubwa Copper Mine in 1910-12 (Reeves, 1963).<sup>11</sup> However, except for the Broken Hill mine, these mining operations were closed before the outbreak of the First World War (1912-1918) because of financial difficulties, as they relied on simple technology that proved expensive and could not generate sufficient economies of scale.

As a policy response, the colonial government began to give large-scale mining rights only to large mining companies with a strong financial bottom line such as Anglo-American Corporation (AAC) Group and the Rhodesian Selection Trust (RST) Group owned by American Metal Climax Inc (Mudenda and Bardouille, 1988). These companies focused on exploration of minerals with high economic value under the prevailing economic conditions, leading to the discovery of large high grade copper deposits at Luanshya, Nkana, Mufulira and Nchanga. Between 1931 and 1936, the RST commissioned four major copper mines, namely Luanshya (Roan Antelope) in 1931, Nkana (Rhokana) in 1932, Mufulira in 1933, and Nchanga in 1936. The AAC formed Nkana Mines, Nchanga and took over the Kabwe mines. AAC became the largest shareholder in the mining industry by buying shares in RST before World War II. Table 1 presents the ownership structure of mines in the pre-independence era. The country's mine production continued to surge post the WWII boom, due to the rising global prices and demand for copper partly driven by the re-armament necessitated by World War II and the Korean War.

Table 1: Pre-independence ownership of copper mines in Zambia

Name of the mine	Year opened	Ownership
Bancroft Mines Ltd	1953	AAC
Chibuluma Mines Ltd	1951	RST
Mufulira Copper Mines Ltd	1933	RST
Nchanga Consolidated Copper Mines Ltd	1936	AAC
Nkana (Rhokana) Corporation Ltd	1932	AAC
Roan Antelope Copper Mines Ltd	1931	RST
Baluba Mine	1952	RST
Chambishi Copper Mine	1962	RST
Redevelopment of Kansanshi Copper mine	1953	AAC

Source: Mudenda and Bardouille (1988)

Notes: AAC = Anglo American Corporation; RST = Rhodesian Selection Trust

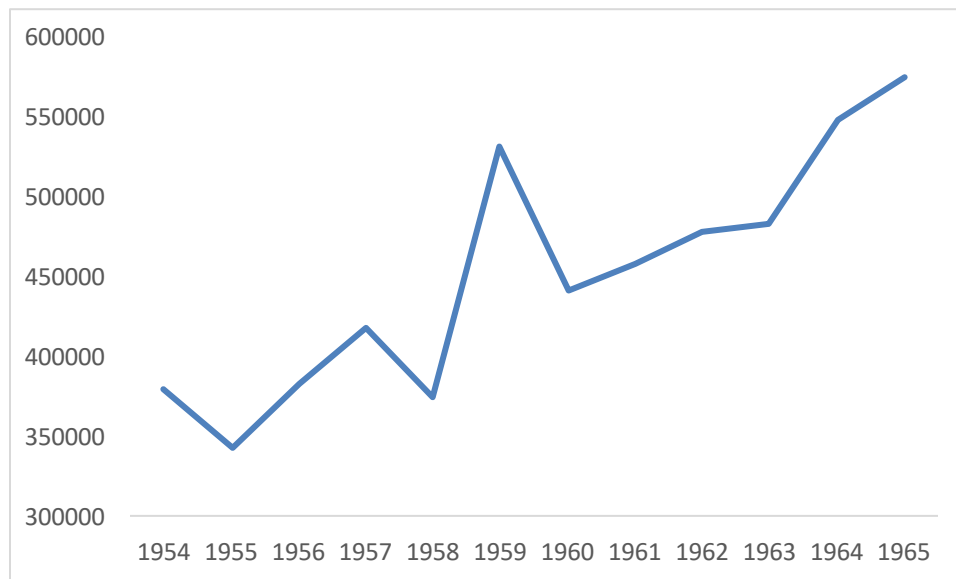
With the involvement of large foreign mining companies, Zambia emerged as a major producer of copper in the world. Its global share of copper exports rose from 10 percent in the 1930s and 1940s to 15 per cent in 1959, trailing the US, Russia, Chile and the Democratic Republic of Congo (Adam

<sup>11</sup> Except for Kabwe which worked a lead and zinc deposit, most of these mining activities were discontinued before the end of the World War.

et al., 2014). Zambia exported a cumulative total of 4.8 million tons of copper between 1931 and 1953, amounting to an average of 226,264 tons per annum. Copper production continued to increase from 379,578 tons in 1954 to 547,700 in 1964 (Figure 1). Minerals accounted for 95 percent of total exports during this period. Furthermore, formal employment in the mining sector fluctuated around 48,000 employees between 1955 and 1963, with its share in total formal employment reaching 50 percent in 1963.

During the mining modernization and expansion phase of 1947 and 1953, many companies supplying technological inputs to mines were established in Zambia. The AAC and RST moved their headquarters from London to Zambia. Furthermore, the AAC bought shares from BSAC and other British companies that had invested in the mining sector in Zambia (Ndulo, 1977).

Figure 1: Copper production, 1954-1964 (tons)



Source: Reeves (1963) and ZSA database

Despite increasing production, the mining sector did not contribute commensurate revenue to the state for three reasons (Ndulo, 1977). First, mineral rights were owned by BSAC, which received all the royalties estimated at £135 million in 1964. Second, because BSAC was headquartered in London for most of the period, the British government received a share of the copper industry revenue in the form of taxes, which reduced taxable corporate income in Zambia. It was estimated that in 1937, mineral royalties and corporate income tax accounted for 30 percent of the copper produced in Zambia (Ndulo, 1986). However, only 12.5 percent of those revenues remained in Northern Rhodesia. Between 1930 and 1940, Britain pocketed over £2.4 million in taxes from the Copperbelt while Zambia received £13,6000 in development grants (Acemoglu et al., 2001). That is not just unfair trade; it is pure extortion.

Third and finally, the revenue collection and consolidation rules of the Central African Federation

negatively affected revenue mobilization in Zambia. Because revenues were pooled across the three states (Malawi, Zambia and Zimbabwe), Zambia received less than its proportional revenue share of mineral production to the extent that the dissolution of the federation offered an opportunity for financial relief. The power structure under the federation favored Southern Rhodesia (Zimbabwe) which, coincidentally, had a larger share of white settlers (Mudenda and Bardouille, 1988). Most of the industries producing intermediate and capital goods that supplied the mines in Zambia were based in Zimbabwe.

As the independence movement gained momentum, Zambian leaders advocated for regaining control of mining rights and ultimately the royalties that thus far accrued to the BSAC. National leaders contended that the BSAC had no clearly defined legal rights to the minerals. Ultimately, the BSAC ceded mineral rights and royalties to the Zambian government on the eve of independence, against monetary compensation (Ndulo, 1986).

### ***Independence and nationalization of mining***

Although mineral rights were owned by the Zambian government at independence in 1964, all the mines were owned by the private sector (RST and AAC). The new national government planned to take advantage of the country's large mineral endowment to boost government revenue to finance public services as well as investments in state owned firms as part of the economic diversification agenda. Thus, the government embarked on economy-wide reforms to take control of the mining sector and the rest of the economy. Through the 1968 Mulungushi Reforms and the 1969 Matero Declaration, the Kaunda government introduced reforms that sought increased state control and localization of all businesses to promote the newly adopted import-substitution industrialization strategy in line with the Transitional National Development Plan,<sup>12</sup> which was succeeded by the First National Development Plan of 1966-1971. The objectives of the Plan included: (i) diversification of the Zambian economy to reduce the reliance on mining; (ii) increasing domestic production of goods to meet local demand; (iii) increasing employment and income per capita; (iv) reduction of the rural-urban inequalities inherited at independence; (v) increasing social welfare and education; and (vi) development of economic and social infrastructure (Craig, 1999; Saasa, 1987).

As part of the Mulungushi Reforms, the government announced measures aimed at nationalizing all industries in the country by acquiring majority equity holdings in major foreign-owned firms across all sectors except for some banking institutions. Thus, prospection and exploitation rights were nationalized. The government forcefully acquired 51 percent of the shares in all mining companies, which was subsequently increased to 63 percent. The government took hold of fifty state-owned companies and statutory boards, which it had inherited at independence, some directly

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<sup>12</sup>Nationalization extended from the manufacturing firms to mines. Only banks, namely Standard Chartered Bank Grindley's and Barclays Bank were not nationalized.



from the territorial government and others created from the splinters of divided federal institutions (Craig, 1999). Key among these state-owned enterprises was the Industrial Development Corporation (INDECO), which was created by the colonial territorial government to act as a development agency, promoting private industry through finance and research. INDECO's role was to establish and promote new projects and enterprises in sectors of strategic interest where the private sector was reluctant to invest (Saasa, 1987; Craig, 1999).

The implementation of the First National Development Plan was largely financed by domestic revenue streams that Zambia inherited at independence, notably the revenue that had been transferred to the British Federal Government, which was now retained by the Zambian Government, and with the transfer of the rights of the British South Africa Company. Government revenue was boosted by high copper prices in the mid-1960s. Thus, the Government was able to quadruple total spending between 1964 and 1967 without running a budget deficit or depleting its foreign exchange reserves (Craig, 1999). In practice, ultimately the country maintained a mixed economy with considerable space for the coexistence of private, state-owned, and cooperative enterprises. In many cases, development projects were undertaken in partnership between state-owned enterprises and foreign enterprises, with state ownership being envisaged for a limited duration only.

### **3. Industrial Organization of the Mining Sector through Reforms and Crises**

The organization of Zambia's mining sector evolved from a purely privately owned regime before independence to state control between 1969 and 1992, and back to predominantly private ownership till today. The government's decision in 1969 to extend its ownership and control of the mining industry was motivated by several reasons (Simon, 1985). First, copper was considered a strategic product, contributing about 40 percent of national output, 90 percent of foreign exchange, and half of government revenue. Thus, the government deemed it unacceptable to leave such a strategic sector in private hands. In addition, the government sought to expand production by reinvesting profits back into the mining industry as opposed to letting foreign companies expatriate the profits. Second, the government adopted some socialist policies that sought to shift the entire economy into public ownership. Finally, prior to nationalization, the private mine owners did little to advance the knowledge base of the indigenous population. Thus, state ownership was seen as a means to promote local expertise in the mining sector.

As part of the Mulungushi Reforms, the Zambian government began to restructure its shareholding in the mines and other enterprises, using the state-owned holding company, the Industrial Development Corporation (INDECO). It took over the mines after acquiring 51 percent of equity using a 10-year interest-bearing bond and reorganized the mining industry into two corporations. The first involved the amalgamation of mines that belonged to Anglo-American, namely Bancroft, Nchanga, Rhokana and Rhokana Copper refineries into one company, Nchanga Consolidated Copper Mines Ltd (NCCM). The second was the consolidation of the mines that were under RST,

namely Chibuluma, Chambishi, Mufulira and Luanshya mines to form Roan Consolidated Copper Mines Ltd (RCCM). The control of the mining enterprise shareholding acquired by the state was assigned to a new fully state-owned entity that was created in 1970, the Mining Development Corporation (MINDECO). The government also sought to create the Finance and Development Corporation (FINDECO) to take over foreign-owned banks, but the banks successfully resisted it. In 1971, the three state-owned enterprises – INDECO, MINDECO, and FINDECO – were merged into one large parastatal body, the Zambia Industrial and Mining Corporation (ZIMCO), which became one of Sub-Saharan Africa's largest companies.<sup>13</sup>

The former mine owners, AAC and RST, remained minority shareholders and signed management contracts to continue providing managerial oversight for the continued operations of the mines. These management contracts empowered private investors to recruit staff, engineers and design consultancy, purchase supplies from outside the country, and market all the metals and their by-products abroad (Sikamo et al., 2016; Simson, 1985).

In 1973, the Kaunda government transferred MINDECO's responsibility from the RCM and NCCM to only the smaller mines in Zambia. An overarching parastatal, the Zambian Industrial and Mining Corporation (ZIMCO) was created to manage the RCM, NCCM, MINDECO, and INDECO. Moreover, the government formed the Metal Marketing Corporation of Zambia (MEMACO) as a new copper marketing company for all the output from RCM and NCCM. Furthermore, the government prematurely redeemed the bonds issued in payment of the initial equity takeover and sought to increase its control of the mines (Simson, 1985). The management contracts with ACC and RST were cancelled, making NCCM and RCM self-managed entities.

Further changes in ownership were made in 1979 when the Kaunda government increased its equity shareholding in NCM and RCM from 51% to 60.3%. This increase in equity arose from the conversion of government loans extended to the companies into equity to enable continued operations when the copper prices collapsed in 1975.<sup>14</sup> Another change occurred in 1982 when the government amalgamated the RCM and NCM into a single corporation – Zambia Consolidated Copper Mines Limited (ZCCM), which was the largest mining firm in the world (Saasa, 1987). The ZCCM was a joint venture of state and private interests. The government retained 60.3 percent equity holding, AAC held 27.3 percent, and the remaining 12.4 per cent were held and publicly traded in London, Paris and New York stock exchanges. The partnership granted AAC the pre-emptive rights if the government sold its shares to the extent of falling below 50%. The mission of ZCCM was to improve operational efficiency by cutting costs in the industry through centralized management of the assets (Craig, 2001).

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<sup>13</sup> Government share ownership: ZCCM 60.3%, MINDECO Small Mines 100%, MINDECO Lumwana 60%.

<sup>14</sup> The private foreign equity holders rejected the option to contribute additional capital to keep their equity share unchanged.

In the end, the nationalization of the mines and the economy-wide reforms implemented from 1969 through the 1980s did not yield the expected results. During that period, the country was hit by external shocks that adversely affected the copper industry and constrained economic growth (Musonda and Adam, 1997; Adam et al., 2010). The first shock was the quadrupling of international oil prices in 1973 and 1975, causing a double whammy on the copper industry. First, the spike in oil prices inflated the cost of imported inputs in the copper industry, reducing production and the profit margin. Second, high oil prices dampened global economic growth, which reduced global demand for copper resulting in a collapse of copper prices. At the same time, geological conditions in the copper mines worsened, with some mines experiencing flooding, which reduced production.

The challenges faced by the mining industry were further exacerbated by the tenuous geopolitical environment in Southern Africa that arose from the Unilateral Declaration of Independence (UDI) in Zimbabwe and the entrenchment of apartheid in South Africa, which were opposed by regional states including Zambia. As a retaliatory response, these regimes closed Zambia's shortest trade routes through Zimbabwe to South Africa to the sea. The closure increased the cost of access to international markets. The reduction in copper prices and exports triggered a balance of payment crisis while economic growth stagnated. Initially, the funds obtained from the nationalization process were used towards several social welfare projects, including massive investments in education and healthcare. Mineworkers and their families enjoyed a "cradle to grave" welfare policy providing services ranging from free education for mining workers' children to coverage of burial costs. The government perceived the crisis as transient and maintained its high expenditures mainly financed by commercial external borrowing. This optimism on the part of policy makers delayed the required adjustments to restore economic stability (Ndulo and Sakala, 1987). The governance system also lacked adequate checks and balances on the executive's appetite for excessive spending on politically motivated unprofitable non-core programs.

As a result of the unfavorable global environment, investments in the mines by the government and its partners declined substantially (Craig, 2001). Copper production declined and ZCCM faced substantial financial viability problems. The company became increasingly indebted with liabilities rising from a third to more than half of its total assets between 1980 and 1990. The company relied on rescheduling its debt obligations to remain afloat. It is estimated that ZCCM required over US\$2 billion to maintain effective operations and undertake new investments, which it was unable to assemble. With a decline in both greenfield investments and re-investments in rehabilitating existing firms, copper output and exports declined drastically.

The fall in copper production and the decline in foreign exchange inflows had adverse effects on all the sectors that depended on copper revenue for operations. To avert further economic deterioration and a balance of payment crisis, with the help of the International Monetary Fund and the World Bank, the government rolled out a full structural adjustment program in 1983. However, the reforms were reversed in 1987 due to social unrest. Subsequently, economic growth

declined, and the country faced external debt distress (Andersson and Kayizzi-Mugerwa, 1993). To address the external imbalances and reignite economic growth, the government turned to the IMF and secured standby facilities between 1983 and 1986. The increases in food prices and the general cost of living following the removal of subsidies incited riots, forcing the government to reinstate the subsidies in 1986.

By 1991, the reforms had done little to substantially change the economic and enterprise ownership landscape. President Frederick Chiluba was elected in 1991 on a platform of shifting from a socialist regime to a market-oriented economy with the backing of the IMF and the World Bank. Thus, his government committed to liberalizing the economy and privatizing (or reprivatizing) state-owned enterprises, by enacting the Privatization Act in 1992. It established the Zambia Privatization Agency (today's Zambia Development Agency) to manage the process of transferring state-owned enterprises under ZIMCO into private hands; ZIMCO was closed in 1995. The privatization program encountered problems especially for copper mines, particularly given the size of ZCCM (today's ZCCM-Investor Holdings ZCCM-IH) which had a complex structure of a genuine conglomerate.<sup>15</sup> The government feared the potential loss of economic control to powerful foreign investors. ZCCM faced two major financial challenges (Craig, 1989). First, due to a shortage of long-term finance required to develop new and existing ore bodies, its mines neither received adequate recapitalization nor underwent modernization since they came under state ownership. Secondly, the lack of short-term working capital made it difficult to fund the operation of existing mines. Gross capital formation in the mining sector declined from a peak of 38 percent of GDP in 1978 to 7% in 1989, which was insufficient to cover the depreciation of the capital stock (Adam and Simpasa, 2011).

In 1995, the government passed the Investment Act and the Mines and Minerals Act aimed at creating a conducive environment for attracting private investment in the mining sector. This policy innovation was expected to facilitate privatization and the transfer of ZCCM assets to private hands between 1993 and 1996. Given the complexity of ZCCM, the government decided to unbundle it and sell its operating units to a variety of investors. The negotiations for the sale of mines proved difficult in a context of declining global commodity prices, negative global economic outlook, leading to low demand for the assets. This was exacerbated by the fact that the mines were making losses, with the government losing more than a million US dollars a day.

The deterioration of mining assets exacerbated the urgency of privatization of the mines. Furthermore, the donor community led by the IMF and World Bank pressured the government to let go of these assets as a measure to mitigate fiscal imbalances. The government's dilemma was to find a privatization model that addressed financial viability problems while preserving the potential of the mining sector to spur long-term economic development. A British consulting firm,

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<sup>15</sup> Detailed discussions of the challenges involved with the privatization of ZCCM can be found in Simutanyi (2008), Adam and Simpasa (2010), and Chitonge (2021).

Rothschild, was hired to advise the government on strategic options for the privatization of ZCCM.

A joint government and ZCCM negotiation team represented the government during negotiations. With the unbundling of ZCCM assets, the government ended up signing separate contracts that embedded some development agreements with each mine’s new owner. The first set of mines was privatized in 1997 and the process continued up to the early 2000s, attracting major mining houses from Europe, Asia and North America. The government retained minority shares in the privatized mines, which were managed by ZCCM-IH, with state participation ranging from 10 to 20 percent of the capital. The privatization of mines spurred an increase in investments in existing mines and stimulated the opening of new mines especially in the Northwestern province, ranging from small-scale to large-scale operations. Table 2 presents the ownership structure of large and medium-scale mines after the privatization process.

Table 1: Ownership of large mines after privatization

Mines	Investor	Year of acquisition or commissioning	Corporate structure	Mining assets
Kansanshi Mines	Joint Venture, First Quantum minerals Ltd (Canada 80%), ZCCM IH (20%.)	2001 to date	Listed on LSE, TSX	Kansanshi (copper, cobalt, gold)
FQM Trident	First Quantum minerals Ltd	2010	Private equity, 100% FQM Listed TSX	Sentinel (copper ); Enterprise (nickel); Intrepid (copper, gold, uranium)
Konkola Copper Mines Plc	Joint venture Vedanta Resources, India (79.4%), ZCCM IH (20.6%)	2004-2021, 2024 to date	Listed on LSE	Nchanga, (copper);Konkola (copper); Nampundwe, (pyrite); Chililabombwe (copper)
Mopani Copper Mine Plc	Glencore International AG, (Switzerland (73.1%), First Quantum Minerals, Canada (16.9%), ZCCM IH (10%)	2000-2021	Joint venture	Nkana, Mufulira (copper)
Mopani Copper Mine Plc	Delta -International Resources Holdings (Dubai) (51.1%), ZCCM IH (48.9%)	2024 to date	Joint venture	Nkana, Mufulira

Luanshya Mines	CNMC (80%), ZCCM IH (20%)	2009 to date	Joint venture	Luanshya, Mulyanshi (copper, cobalt)
Chambishi Mines (NFC Africa Mining Co)	CNMC (90%), ZCCM IH (10%)	1998	Joint Venture	Chambishi; (copper, cobalt)
Lumwana Copper	Equinox minerals ltd (79.4%), ZCCM IH (15%)	1999-2010	Listed ASX, TSX	Lumwana (copper, gold, uranium)
Lumwana	Barrick gold Resources Corporation Canada (100%)	1999-2010	Private Listed ASX, TSX	Lumwana (copper, gold, uranium)
Bwana Mkubwa	First Quantum minerals Ltd (Canada 79.4%), ZCCM IH (20.6%)	1997	Listed LUSE, TSX	Copper
Chambish Metals*	Eurasian Natural Resources (ENRC 80%), ZCCM IH (15%)	2009	Joint venture	Chambishi Smelter, slag dumps
Kagem Mining*	Gemfields (75%), ZCCM IH (25%)	2008	Joint venture	Emeralds
Kariba Minerals (Gems)*	ZCCM IH (100%)	1970s	SOE	Amythyst
Lubambe Copper* mines	EMR (80%), ZCCM (20%)	1997	Joint venture	Copper
Munali Nickel Mine*	Mabiza Resource Ltd (100%)	2006	Private	Munali (Nickel), Mazabuka
Grizzly Mining (GM)*	100% private	1999	Private	Emeralds

Updated from Mudenda et al (2022).

\* Denotes class B mining assets; that is, medium scale mines, as defined by the Zambia Chamber of Mines. This information is as of March 2024.

In 2020 and 2021 the government returned to a short-lived 100% ownership of two large mines, namely the Mopani Copper Mines and KCM after disputes in which the government alleged that they were evading taxes. The Mopani copper mine was sold in 2024 to a private investor, with the government retaining 49% of shares, down from the original 100% managed by ZCCM-IH

between 2020 and 2024. However, KCM was returned to its original owners. In 2024, First Quantum Minerals, domiciled in Canada was the largest investor owning several assets including the Kansanshi gold mine and Trident. Trident comprises three mining assets, namely Sentinel Mines (copper, cobalt), Enterprise Mines (Nickel) and Intrepid Mines. While the government has a minority shareholding in Kansanshi Copper Mines, Trident is wholly owned by FQM.

The results from exploration reveal that Zambia's endowment in natural resources may still be underestimated. In 2024, Kobold Metals, an American owned firm, found large copper and cobalt deposits in the North-Western Province of Zambia. Substantial deposits of other minerals besides copper and cobalt have also been uncovered, notably gold, and nickel and other precious metals. It is estimated that up to 40 percent of Zambia's mineral potential has not yet been geologically surveyed. Some estimates suggest that the country has 2.8 billion tons of ore ranging between 0.6 percent and 4 percent copper content (World Bank, 2011). The country's mineral potential is strategically important in the context of the growing global demand for minerals required to fuel the transition towards clean energy.

#### **4. Regulation of the Mining Sector**

The goal of a country's mining legislation is to create laws that establish an enabling environment for the exploration and development of mineral resources to improve the welfare of the people. Zambia has enacted mining legislations since the colonial era to align its laws to the changing times. The first mining legislation was the Mining Ordinance of 1912, which empowered the BSA company to regulate the mining rights in Zambia. The law allowed any investor to acquire a prospecting license at a minimal fee to search for minerals in any area in Northern Rhodesia.

As indicated earlier, before independence, the Zambian leadership pressured the BSA to surrender the mining rights and associated royalties to the government at independence in 1964 (Ndulo, 1986). This helped set in motion the nationalization program, which was cemented by the amendment of the constitution and a new Mines and Minerals Act enacted in 1969 allowing the government to acquire private businesses. This Act gave the President inalienable power to hold the minerals rights on behalf of the Zambian people and effectively terminated all the undeveloped concessions and special grants held by private investors, mainly AAC and RST. In addition, the Act authorized the State to not only negotiate with existing mines for a majority (51 percent) equity holding, but also to issue licenses contingent upon productive use. Ultimately the Mines and Minerals Act of 1969 gave the State control over the copper industry and the ability to direct new investments outside the Copperbelt region.

The state-led mining sector experiment proved unsuccessful, and eventually the government was forced to re-privatize the mines with the 1995 Act and subsequent amendments of the Mines and Minerals Act as in 2008, 2015, 2018, 2020 and 2024. The 1995 Act was criticized for granting excessive scope for tax concessions. Thus, the Act was revised to pave the way for the Mines and

Minerals Development Act (MMDA) of 2008. This Act constrained the government from entering into special development agreements with large-scale mining firms to ensure that Zambians benefit from the minerals. It further streamlined the licensing system and clarified procedures for mining uranium and other radioactive minerals. Small-scale mining was reserved for companies owned by Zambian citizens. However, the law did not provide explicit guidelines on how firms could transfer assets. Thus, some large-scale mining license holders could enter into third party agreements without prior permission from the state. This flaw reduced transparency and accountability in the management and development of mineral resources.

In 2015, the 2008 Act was repealed and the Mines and Minerals Development Act No. 11 (MMDA) of 2015 was enacted, by which the ownership of minerals are vested in the presidency. The Act regulates aspects dealing with mining rights, licenses, large-scale mining, gemstone mining, health and safety, environmental protection, geological services, royalties and charges. It also establishes the mining appeals tribunal.

### ***Institutional arrangements in mining***

The institutional arrangements in the management of mineral resources are elaborated in the 2015 Act. Although the minerals and land are held in trust by the President, the Act established the office of the Director of Mines, who is the Chief Administrator. The Director of Mines holds the power to secure the proper development of mines and conduct mining operations in accordance with the provisions of the Act. The Director is supported by the Director of Geological Survey, whose mandate is to undertake the geological mapping of Zambia to guide exploration operations. The other divisions within the Ministry are the Director of Mines Safety, and the Director of Mining Cadastre (who administers the mining rights and mineral processing licenses). These units are supported by the Mining Licensing Committee. Beyond the Ministry of Mines and Minerals Development, several other Government institutions play different roles in the mining sector. These include the Zambia Development Agency (ZDA), the Zambia Consolidated Copper Mines Investment Holdings (ZCCM-IH), the Industrial Development Corporation (IDC) and the Bank of Zambia (BOZ) for gold purchases.

In 2023, the government also introduced the Minerals Regulation Commission whose mandate is to address, among others, issues pertaining to production reporting, mineral content analysis, and control of illegal mining and illicit trade of minerals.

### ***Taking stock: Challenges associated with a state-led mining development model***

At its genesis, formal mining in Zambia was the exclusive preserve of foreign capitalists, a model that was formalized with the establishment of colonial rule.<sup>16</sup> At independence, the national

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<sup>16</sup> See, among others, Cunningham (1981), Martin (1972), and Musambachime (2016).



leadership considered the country's endowment in mineral resources as a basis for realizing the goal of economic independence which was considered key to consolidating political independence. In a sense, minerals were seen as what Vladimir Lenin called the "commanding heights" of the economy, which needed to be controlled by the state to support the national development agenda. Indeed in 1974, President Kaunda declared nationalization of the economy, including taking over mining companies. In doing so, Zambia was not unique as state participation in natural resource management was widespread across the world then; and indeed, it remains prevalent even today, as observed in oil-rich countries in the Middle East and mineral-rich countries in Latin America (Daniel, Keen, and McPherson 2010; Radetzki 2016). In the 1960s and early 1970s, state participation in natural resource exploitation was an integral part of the strategy to assert new-found sovereignty in independent nations in Africa and other regions. State participation can take various forms, the main ones being equity participation (full, free, or carried) and production sharing (McPherson 2010).

In the case of Zambia, as in other countries, state participation in the mining sector is an important policy lever for achieving social and economic development goals. Indeed, state-owned mining companies carry out a substantive social development agenda in the communities where they operate and even nationwide.<sup>17</sup> The motivation of active state involvement in the extractive industries therefore goes beyond standard financial and economic considerations. It encompasses larger goals in the realm of social development and protection of national strategic interests.

State participation in extractive industries carries important challenges that generate substantial debates and sharp criticisms in the literature. In general, the state's active participation in resource exploitation raises the classic issue of efficiency, with the premise that private enterprise and free markets achieve optimal outcomes in terms of resource use and allocation. Beyond ideological inclinations, practical experience over time and across countries has revealed a range of issues associated with state participation that cannot be dismissed, regardless of one's view in the debate about state vs. markets in the organization of the economy. The most important challenges relate to governance and its implications for the management of state-owned enterprises and the proceeds from resource exploitation. In practice, state-owned mining companies often face problems associated with "government interference, lack of transparency and accountability, and the extensive assignment of non-commercial tasks" (McPherson, 2010:273).

Three challenges are particularly worth emphasizing. The first is the lack of independence of the managers of state-owned enterprises, which constrains their ability to set objective financial and technical goals for the firms. As managers are appointed by the government, they have limited leverage in the face of demands that may be motivated by political considerations, even when they compromise the company's financial sustainability. The second challenge relates to the

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<sup>17</sup> This is similar to the case of the cocoa management board in Ghana (COCOBOD) discussed in Ndikumana and Adjei-Mantey (2023).

management of the company's finances in the face of pressure from the central government's need to finance critical expenses in the context of weak fiscal revenue performance. There is a high risk that state-owned enterprises end up serving as a fiscal arm of the government, which compromises their financial stability. The third problem arises when state-owned enterprises are also assigned a regulatory mandate in the sector where they operate. The company then ends up wearing multiple hats, as a profit-seeking corporation, a fiscal arm of the government, and a regulator. Obviously, it is impossible then to have a level playing field in the sector, which undermines competitiveness to the detriment of private operators.

These structural and policy challenges compound the effects of exogenous factors that compromise the performance of extractive industries, including the vagaries of international demand and prices for primary commodities, the variability of exchange rates and interest rates, and various shocks to the international financial markets. In the case of Zambia, the nationalization experiment faced a range of adverse exogenous factors as soon as President Kaunda introduced it in 1974, which compromised the performance of state-owned mines. It is important to note that while nationalization of the mines shifted ownership from foreign companies to the government, mining remained out of reach of the domestic private sector; and this remained so even after privatization and liberalization of the economy undertaken in the 1990s. This means that the financing of the mining sector during the era of full state control rested solely on the shoulders of the government.

The capacity of the government to sustainably finance mining sector development rests on two pillars: an effective investment strategy and strong revenue generation capacity. An effective investment strategy involves identifying priority sectors as beneficiaries of public investment and setting rules for accumulating, saving, and utilization of funds generated from mineral resource exploitation. Such a strategy involves, among others, the establishment of sovereign wealth funds with explicit rules about how revenue from exports should be deposited in the fund, managed, and utilized to finance investments in the extractive industries and other selected sectors.

On the revenue side, the performance of revenue generation depends on the efficiency of the management of mining operations along the entire value chain as well as the dynamics in the rest of the economy that affect the tax base. When state participation is in a form other than full ownership, revenue mobilization is dependent on the nature of the fiscal regime that governs the sector.

In the case of Zambia, the nationalization of mines proved to be a challenging experience due to a range of factors. We highlight three critical factors that definitively doomed the program. The first was low and unstable revenue generation by the mines, which made it difficult to sustain investment in the maintenance and upgrading of equipment. This resulted in a deterioration of productive capacity and an increase in operational costs, hence a decline in the sector's international competitiveness. The second was the high financing requirements for a state-led infrastructure intensive development agenda that had been premised on abundant mineral

revenues. Thus, while the nationalization era was characterized by commendable realizations in infrastructure, this came at the cost of financial sustainability of state-owned mining enterprises. The third factor was the low international copper prices throughout the nationalization era, which implied lower earnings from mineral exports.

Clearly, the nationalization agenda turned out to be ‘mission impossible’, doomed by a combination of domestic structural and governance problems along with adverse external factors. The inability to finance investment in the mines was a central factor in the tribulation of the state-owned mining model. By the end of the Kaunda regime, it was clear that the scheme was unsustainable. The successor Chiluba regime had no choice but to reverse course and embark on a (re)privatization of the mines starting in 1991.

## **5. The Mining Fiscal Regime**

The management of the mining sector relies heavily on the fiscal regime, which includes a set of instruments in the form of taxes, royalties, dividends, and other tools that determine how the revenues from mineral exploitation are shared between the state and private companies. The key objective of the mining fiscal regime is to enable the government to collect a fair share of revenue while maintaining a conducive environment for private investment in the mining sector.

Zambia’s mining fiscal regime has evolved since the colonial regime, marked by major reforms in the context of key policy regime shifts, from nationalization to structural reforms of the 1980s and re-privatization in the 1990s (see Lundstøl and Isaksen, 2018). During the colonial period, from 1920 to 1966, the mineral tax regime was dominated by mineral royalty and the rate remained relatively stable over the entire period. The mineral royalty tax (MRT) was set at 13.5 percent of the sales and was adjusted by some marginal costs. The mines were also required to pay variable corporate income tax set at 37.5% of the profit up to K200,000 and 45% for profits above that threshold. Mining companies were granted a 20-year write down of investments in mines. Over the period 1923-1966, royalty income was the dominant source of government revenue, estimated at £160 million compared to £40 million from the profit tax (Saasa, 1987). Prior to independence the mines paid these taxes to BSA, which had concessioned the mines.

In addition to tax rates, the fiscal regime also includes provisions aimed at incentivizing private investment in the mining sector through a reduction of the overall tax burden, implying a reduction of the production costs. These include tax deductibility of certain business expenses, capital allowance, loss carry-forward, and fiscal stability clauses in the mining agreements. Table 3 presents the evolution of key fiscal instruments applicable to the mining sector since independence.

The post-independence national government changed the fiscal regime in 1966 by introducing a shadow windfall export tax of 40 percent on copper sales, applicable if the price went above K600 per ton based on the London Metal Exchange copper price. Following nationalization, as the

government became a majority shareholder between 1970 and 1980, it replaced the MRT and export tax of 40% with a 51% mineral tax on net corporate profits. This tax was deductible from the 45% corporate income tax while mines were granted a full investment write-off. However, these taxes were rarely paid as mines reported losses during most of this period. The export tax of 4 percent was re-introduced in 1983 and raised to 13 percent in 1985. These taxes, together with the stringent foreign exchange management policy that required exporters to surrender all the export proceeds, and only access foreign exchange upon government discretion after applying for it, adversely affected the competitiveness, investment attractiveness and ultimately the profitability of the mines.

Table 3: Changes in the fiscal regime for the mining sector

	1964	1966	1970	1983	1986	2000	2008	2009	2012	2015	2016	2017	2022
Royalty** (%)	13.5	13.5	na	na	na	0.6	3	3	6	6-9	4-6		4-10
Export tax		40		4-8	13	na	na		10*	na	na	na	na
Mineral tax			51	51	51	na	na	na	na	na	na	na	na
Corporate income tax (%)	37.5		45	45	45	25	25-30	20 -30	25-30	25- 30	25-30		25-30
Variable income tax	na	na	na	na	na	na	15	15	15	15			
Windfall tax (%)	na	na	na	na	na	na	25-75	na	na	na	na	na	na
Tax deductibility	No	No	No	No	No	No	No	No	No	No	No	yes	yes
Capital allowance (%)	5	5	100	100	100	100	25%	100	100	25	25		
Reference price	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	yes	yes
Ring fencing	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes		
Loss carry-forward	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tax haven owner	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Government ownership of mines (%)	0	0	51	63	63	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10 -20
Fiscal stability	No	No	Yes	No	No	Yes	No	No	No	No	No		

Notes: \*The export tax shown in the 2012 column was implemented in 2013.

The fiscal regime underwent significant changes during the mining sector privatization initiated under the Privatization Act of 1992. In addition to changes applicable to the sector, individual companies also benefited from negotiated provisions in their mining agreements. It is important to note that mining agreements were and are still not publicly disclosed. General measures included the revision of the tax regime to a netback (sales minus cost) royalty rate of 3 percent, and the removal of import taxes (Banda, 2020). Table 4 presents examples of tax provisions and other incentives embedded in the confidential development agreements signed by some mining companies (Adam and Simpasa, 2013). In line with the Mines and Minerals Act, 1995, the key instruments affected in the agreements were: i) reduced corporate income tax rates, which for most mines was reduced to 25% compared to 35% for non-mining sectors and 40% for some service sector firms; ii) deductibility of mineral royalty at 3 percent on gross proceeds; iii) complete exemption from import duties on recurrent and capital inputs; iv) 100% profit repatriation, with the interest costs and repatriated dividend income being fully deductible; v) fully deductibility of capital expenditure in the year in which it was incurred; vi) carry over forward of losses for 15 - 20 years; vii) pension liabilities were transferred to the new state-owned ZCCM-IH; and viii) a stability period of 15-20 years during which the agreed terms and conditions were guaranteed (i.e., non-renegotiable).

Most of the mining agreements allowed new mines to negotiate tax breaks to achieve early payback on their investments. The conditions in the development agreements hedged against foreign exchange controls, and some of them also required disputes to be settled by arbitrators appointed by the International Court of Arbitration rather than within the national legal system. In addition, mining agreements also included provisions for subsidized electricity, which constitutes a significant distortion as the mines consume more than 50 percent of national power output.

The incentives contained in the development agreements have been perceived to be too generous and disproportionately in favor of private companies at the expense of the state. The agreements allow mines to lock in taxation and other provisions for 15 to 20 years. The favorable fiscal regime reflected the government's attempt to encourage investment in the mines in the context of an unfavorable environment and its weak bargaining position. The latter was a result of a combination of adverse factors, notably the dilapidation of ZCCM's assets following years of underinvestment, excessive indebtedness of ZCCM, and low international copper prices. This was exacerbated by geological factors resulting in high costs of copper mining compared to other mineral-producing countries (Meller and Simpasa, 2011).

Table 4: Mining development agreements prior to 2008

Mining company	General terms and conditions
Konkola Copper Mine (KCM)	<ul style="list-style-type: none"> <li>• Stability period: originally 20 years for AAC, amended to 16 years following the acquisition by Vedanta four years after the initial sale.</li> <li>• Company income tax set at 25 percent (on net income arising from all mining activities) over the stability period.</li> <li>• Royalty rate of 0.6 percent on gross revenues, except in the first 5 years where it is 0 percent. Throughout the stability period, royalties are deductible from corporate income tax liabilities.</li> <li>• Customs duty set at 15 percent, capped at US\$16 million in the first year, and US\$15 million per year for 4 years thereafter.</li> <li>• Excise duty on electricity purchase set at 0 percent.</li> <li>• Withholding tax of 0 percent during the stability period, and 10 percent thereafter.</li> <li>• Loss carry-forward permitted for 10 years from the date incurred.</li> <li>• Capital expenditure deductible allowance of 100 percent.</li> <li>• Price participation payment to be treated as a deductible expense for corporate income tax; royalty payments also deductible for corporate income tax.</li> <li>• VAT on mine products charged at 0 percent.</li> <li>• Facilities to be treated as single mining units for tax purposes</li> </ul>
Mopani Copper Mines (MCM)	<p>As in the case of KCM, except:</p> <ul style="list-style-type: none"> <li>• Stability period set at 15 years.</li> <li>• Excise duty on electricity purchase set at 10 percent of the amount paid to ZESCO by Copperbelt Energy Company, and only payable after the expiry of the stability period.</li> </ul>
Kansanshi Mines	<ul style="list-style-type: none"> <li>• Stability period of 15 years.</li> <li>• Royalty rate of 3 percent on net back value. However, actual royalty rate was scaled down to 0.6 percent in tandem with KCM and MCM (see GRD Minproc, 2003).</li> <li>• Import duty exempt for levels above 5 percent under section 97(1) of the Mines and Minerals Act.</li> <li>• Payment of duty on rural electrification levy at applicable rate for the duration of the stability period.</li> </ul>
Chambishi Mines	<p>Same as for KCM and MCM, except:</p> <ul style="list-style-type: none"> <li>• Stability period of 15 years.</li> <li>• Company income tax of 35 percent, but, if listed on Lusaka Stock Exchange, the rate is reduced to 30 percent.</li> <li>• Royalty rate of 2 percent on net back value and payment deductible for income tax liability purposes</li> </ul>
Buluba Mines	<ul style="list-style-type: none"> <li>• Similar to Chambishi</li> </ul>

Source: Simpasa et al. (2013)

The design of the Zambian fiscal regime in the context of privatization illustrates the challenges faced by the government in balancing investment incentives to stimulate economic growth and revenue mobilization to meet fiscal needs and achieve social development objectives. Ultimately it appears that the balancing act worked in favor of the private sector. The development agreements prevented the Zambian government from benefiting from increases in mineral prices or profit windfall (Lombe and Mwakacheya 2017). In addition to these weaknesses, a KPMG (2012, p. 1) audit observed that “There are no detailed rules on transfer pricing in Zambia.” This is precisely what some companies have exploited. For instance, companies registered in Switzerland have copper producing subsidiaries in Zambia. A Zambia-based subsidiary may sell copper to its Swiss-based counterpart at below-market price, and the latter company can sell the copper at world prices as if it originated from Switzerland, netting the price difference as profit whilst consistently reporting losses in Zambia. Switzerland has in effect become a “major copper exporter.” As Chitonge (2021: 145) puts it, “For mining companies, every effort is made to externalize as much money made in Zambia as is possible through any means available including misinvoicing and outright tax evasion.” This issue of mineral export misinvoicing is investigated in Mudenda and Ndikumana (2024).

In 2008, in response to improved copper prices and the general investment climate, the government introduced a new tax regime (World Trade Organization, 2009). Under the new fiscal regime, the corporate income tax rate was increased from 25% to 30% and the MRT for companies in base metals rose from 0.6% to 3% of the gross value, while that of precious stones rose from 2 to 3%. Some taxes were reintroduced, including the withholding tax on payments of dividends, interest, royalties, payment to affiliates, and management fees at 15%. A windfall tax of 25% to 75% for copper was levied for prices above US\$2.5 a pound. The proceeds from these new taxes were expected to be saved and used for priority projects. These taxes were deemed punitive by mining companies and a backlash from the industry forced the government to remove the windfall tax in early 2009. It further increased the capital allowance from 25% to 100% and allowed hedging income to be part of the mining income tax.

Following suspicions of transfer pricing by mining firms, in 2009 the government contracted the Norwegian tax auditors Grant Thornton and Econ Poyri to investigate tax avoidance and tax evasion related to the operations of the MCM, the second largest entity owned by Glencore. The audit uncovered serious breaches of OECD guidelines, including overestimation of operating costs relative to industry standards, underestimation of production volumes and manipulation of financial statements, particularly regarding the sale price of copper. Most of the firm’s output was sold to its parent company at a quarter of its market value. At the same time, Glencore was reporting losses in its operations in Zambia (Sherpa et al., 2011; Simpasa et al., 2013). This is one illustration of the manipulations by mining companies that rob the country of revenue from mining.



The government introduced further tax reforms in 2015. The MRT rate was increased to 20 percent for opencast and 8 percent for underground copper mines, while corporate income tax and profit taxes were reintroduced at 30 percent (Liebenthal and Cheelo, 2020). In the same year, the MRT rate was cut down to 9 percent as it was deemed too high by most mines.

New changes were introduced in 2016, with the removal of the 9 percent mineral royalty and the introduction of a price-based royalty of 4 percent when the LME price is below US\$4,500 per ton, 5 percent when it is between US\$4,500 and US\$6,000, and 6 percent when it is above \$6000 (Manley, 2017; Liebenthal and Cheelo, 2020).

Cognizant of the important role of the mining sector for the national growth strategy, the Zambian government has identified increasing copper production as a key driver of the development agenda. Specifically, the government has tailored reforms of the fiscal regime with the aim of raising copper production from the average of 788,257 mt in the period 2018 to 2022 to 3 million tons by 2031. To meet this goal, the government amended the mining fiscal regime in 2022 and 2023, and made mineral royalty deductible for corporate income tax purposes. In addition, a sliding mineral royalty regime applied to the incremental value was introduced for copper. Table 5 presents the changes in the mineral royalty tax regime in 2023 relative to 2019-2022 as announced in the 2023 budget.

Table 5: Mineral royalty tax regime

2019 to 2022		2023	
<i>Price range</i>	<i>Full price amount taxable</i>	<i>Price range</i>	<i>Rate</i>
Less than US\$4,500 per ton	5.5	Less than US\$4,000 per ton (first 4,000)	4
US\$4,500 -US\$6,000 per ton	6.5	US\$4,001 -US\$5,000 per ton	6.5
US\$6,000 -US\$7,500 per ton	7.5	US\$5,001 -US\$7,000 per ton	8.5
US\$7,500 -US\$9,000 per ton	8.5	US\$7,001 per ton or more	10
US\$9,000 per ton or more	10		

Source: Ministry of Finance 2022/2023 budget reports

To sum up, the fiscal regime governing the mining sector in Zambia has evolved over time and has been subject to substantial reforms aimed at striking an optimal balance between stimulating investment in the sector to spur economic growth and maximizing government revenue from the sector. The question is whether that dual mandate has been achieved and to what extent. In other words, it is worth assessing the performance of the sector regarding the two objectives. The next sections seek to shed light on this complex question. Specifically, we assess the performance of the sector in terms of output and exports, in attracting foreign direct investment, generating employment and tax revenue, and in contributing to reducing poverty.

## 6. Structural Dependence: *As mining goes, so goes the nation*

The fate of the Zambian economy has always been intricately tied to the performance of the mining sector, and the tribulations of the sector have been reflected in the volatility of economic growth. So, as mining goes, so goes the Zambian economy, in the past as today. At the country's independence in 1964, mining represented 47 percent of the country's GDP and contributed as much as 53 percent of government domestic revenue (Martin 1972:146).<sup>18</sup> The country was running a virtual 'mono-economy', with mining representing 92 percent of total exports. At independence, the country inherited a mining sector that was fully controlled by foreign enterprises and organized to serve primarily the interests of the rest of the world rather than national development goals. The Kaunda government sought to change that legacy by attempting to make mining a real engine of improvement of the living standards of the Zambian people through reforms of the fiscal regime and the ownership structure of the mines. Today the economy remains highly dependent on mining, which in 2022 accounted for 72 percent of the country's exports, 44 percent of government revenues and 9 percent of GDP (ZEITI 2023:16). The results of the efforts towards diversification of the economy are yet to materialize, and the gains from past mineral booms in terms of improvements in the Zambian people's living standards remain quite limited for various reasons, some of which are discussed further in subsequent sections.

Starting at the turn of this century in the context of consolidation of liberalization of the economy, the Zambian economy has shifted to a regime characterized by higher investment and average GDP growth. But this shift has been accompanied by deepening fiscal and external imbalances, with an acceleration of external indebtedness, which prompted efforts to negotiate debt restructuring to avert the debilitating effects of insolvency and default.

From a long-term perspective, the aggregate performance of the Zambian economy as indicated by GDP per capita growth has been tightly tied to the performance of the mining sector. This can be seen by examining the trend of copper production, the main mineral product since independence in relation to the trend of GDP as illustrated in Figure 2. The figure also depicts the main policy reforms as well as external shocks notably the global financial crisis and recently the Covid-19 pandemic, which have influenced the trend of mineral production as well as GDP growth.

The evolution of the mining sector was significantly marked by the policy choices of the post-independence government, especially the adoption of a socialist oriented centrally controlled economic regime (for detailed analysis, see Fraser and Larmer, 2010) and the nationalization agenda under the Kaunda government, as described in the previous sections. Throughout the nationalization regime, copper production declined systematically. From 698,000 metric tons in the nationalization year in 1974, copper production steadily declined down to 519,000 tons at the end of Kaunda's regime in 1990. GDP per capita followed the same trend. When Kaunda took

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<sup>18</sup> Original data source: *Mining Year Book of Zambia*, 1970.

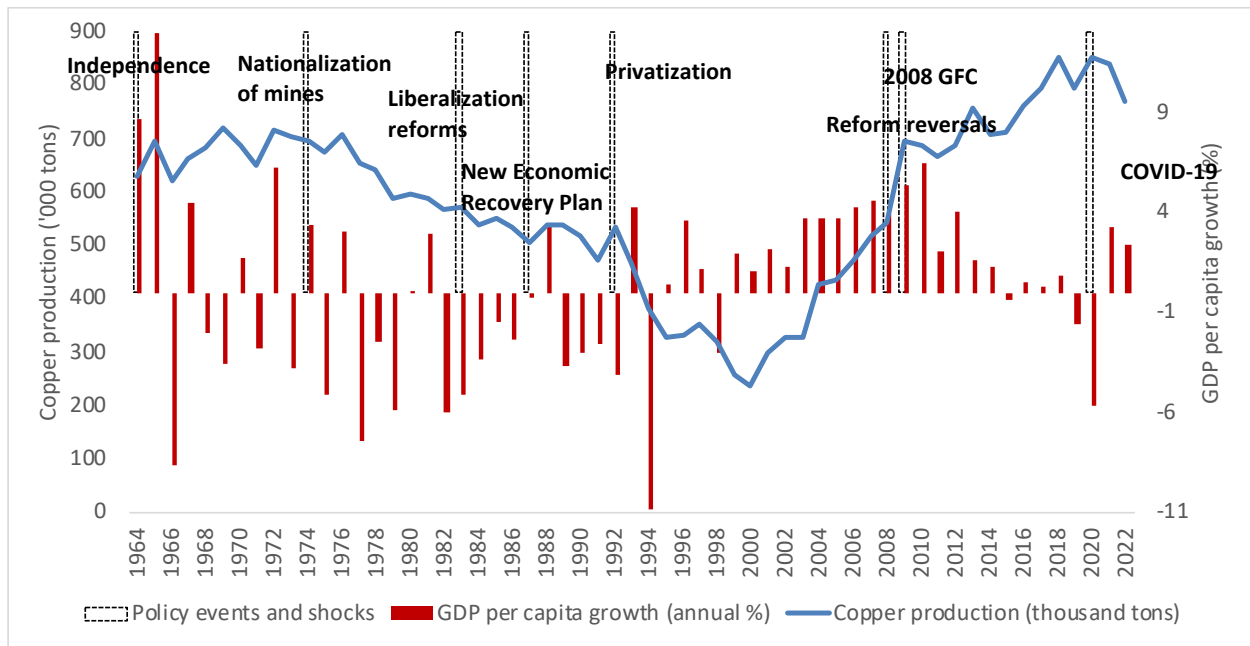
power in 1964, per capita GDP stood at \$1,211 (constant 2015 US\$); it had lost 27% of its value by the time Kaunda left office in 1990, down to \$890.

The decline in mineral production and its impact on GDP growth during the Kaunda regime cannot be blamed solely on nationalization. Other policy-independent factors contributed substantially to depressing copper production. The first was the 1970 accident at the Mufulira mine that caused a major drop in production (by 100,000 tons in 1971) and forced a significant downward revision of prior plans of increasing production capacity. Moreover, structurally, it turned out that the geology of the Copperbelt was not conducive to economic exploitation of copper beyond 700,000 tons per year, beyond which marginal investment costs per ton would increase sharply. Most importantly, the Kaunda regime was just unlucky in that the period witnessed chronically repressed international copper prices, which disincentivized investment in mines.

As can be seen in Figure 2, GDP per capita growth was negative in most years during the nationalization era. However, on an annual basis, there is no one-to-one relationship between copper production growth and GDP growth, which is not surprising as GDP is driven by several factors, and shocks to copper production may affect overall GDP with lags.

Since 2000, Zambia has reaped some benefits from the combination of a consolidation of privatization of mines and overall economic liberalization supported by international donors notably the IMF and the World Bank, as well as rising international copper prices. During this period, GDP growth was strong until 2014 when international mineral prices crashed. Overall, the evidence depicts the high exposure of economic growth to the performance of the mining sector, a result of the failure to diversify the economy away from primary commodities.

Figure 2: Trend of copper production and GDP per capita since independence



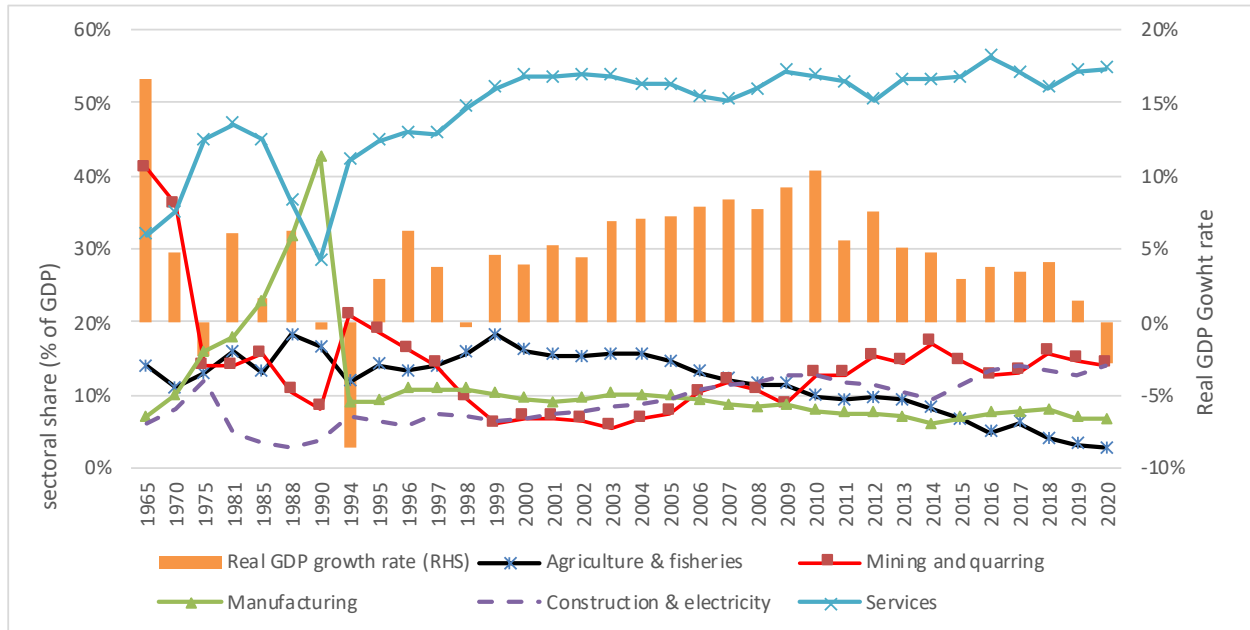
Source: Authors' construction

### ***Mining and elusive economic diversification***

Since independence, consecutive governments declared that a key objective of the national development strategy is to diversify the economy and reduce its dependence on minerals, especially copper, as a driver of GDP growth and a source of employment, government revenue, and foreign exchange earnings. This entails stimulating new investments and expansion of activity in other sectors, especially in manufacturing.

However, the diversification goal remains elusive. Growth remains tributary to outcomes in the mining sector, despite a steady shift in the structure of the economy with an increasing share of services (Figure 3). The share of mining in GDP declined from 41% in 1965 to 36% in 1970; it further declined during the “lost decade” spanning from 1980 and 1991, and continued the descent till 1999. With the re-privatization of the mines and on the back of the copper price boom, the mining sector’s contribution to GDP rose to an average of 13% of GDP in the period 2010-2020. The evidence shows no progress in the development of manufacturing. Overall, there has been an inadequate increase in value addition in mining and very limited spillovers into other sectors.

Figure 3: Sectoral contribution to GDP growth, 1965-2022

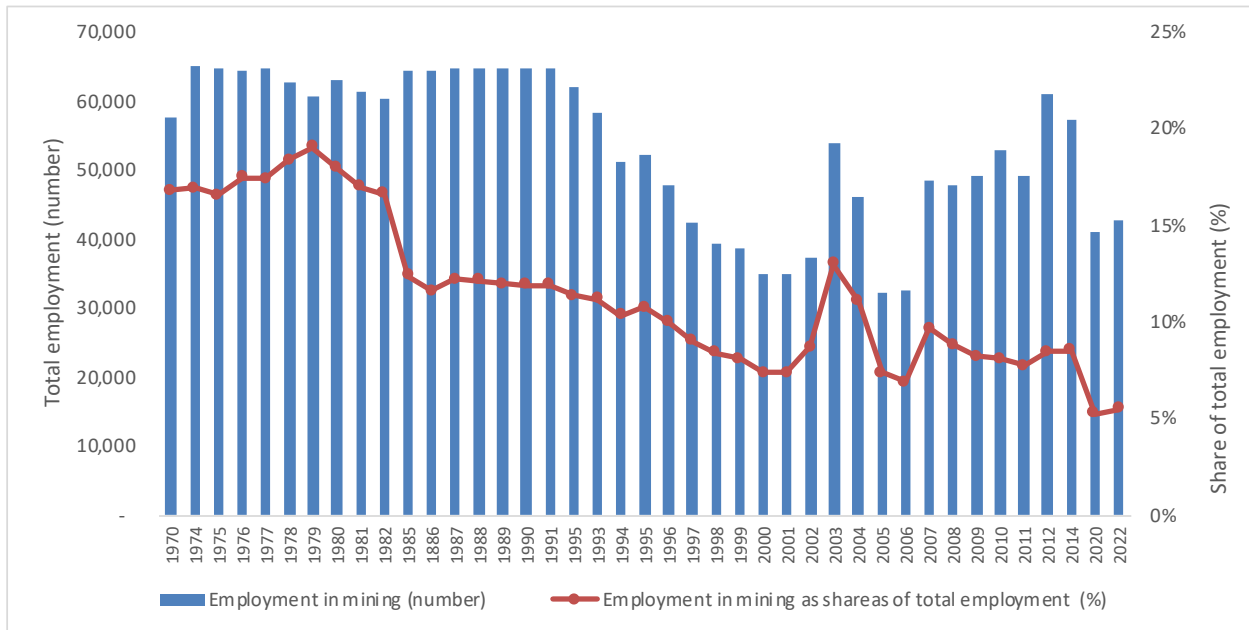


Source: Authors’ construction using data from Zambia Statistical Agency (ZSA) database

### ***Employment in mining***

The mining sector is expected to be a source of livelihood for the population by creating jobs, directly in the mines and indirectly through spillover effects on other sectors. Over time, the contribution of mining to employment has followed a downward trend, consistent with its declining contribution to GDP in favor of services. Formal employment in the mining sector rose from an average of 40,000 between 1960 and 1965 to 57,600 (16.3 % of total employment) in 1971. As the Zambianisation policy took root, government-controlled mines increased employment to a peak of 64, 800 (11.9% of total formal employment) in 1991 (Figure 4). However, structural adjustment program reforms and privatization of the mines were accompanied by substantial job losses as new mine owners sought to reduce labor costs. Formal employment dropped to 35,040 in 2000, representing 7.4 percent of formal employment. It rose to 57,322 (8.5% of total employment) in 2014, but declined to 41,118 in 2020, mainly because the new mines could not offset the job losses that occurred in Konkola and Mopani Copper mines. Note that the statistics on employment in mining need to be interpreted with caution as they often include short-term contract workers who supply material and services to mines. The employment conditions of such workers are quite different and less favorable than those directly employed by mining companies. The trend towards “casualization” of the workforce reflects increasing high ratios of contract workers to directly employed workers, reaching up to 1 to 5 in the case of Kansanshi mine (Chitonga 2021: 148, citing ICM 2014:33).

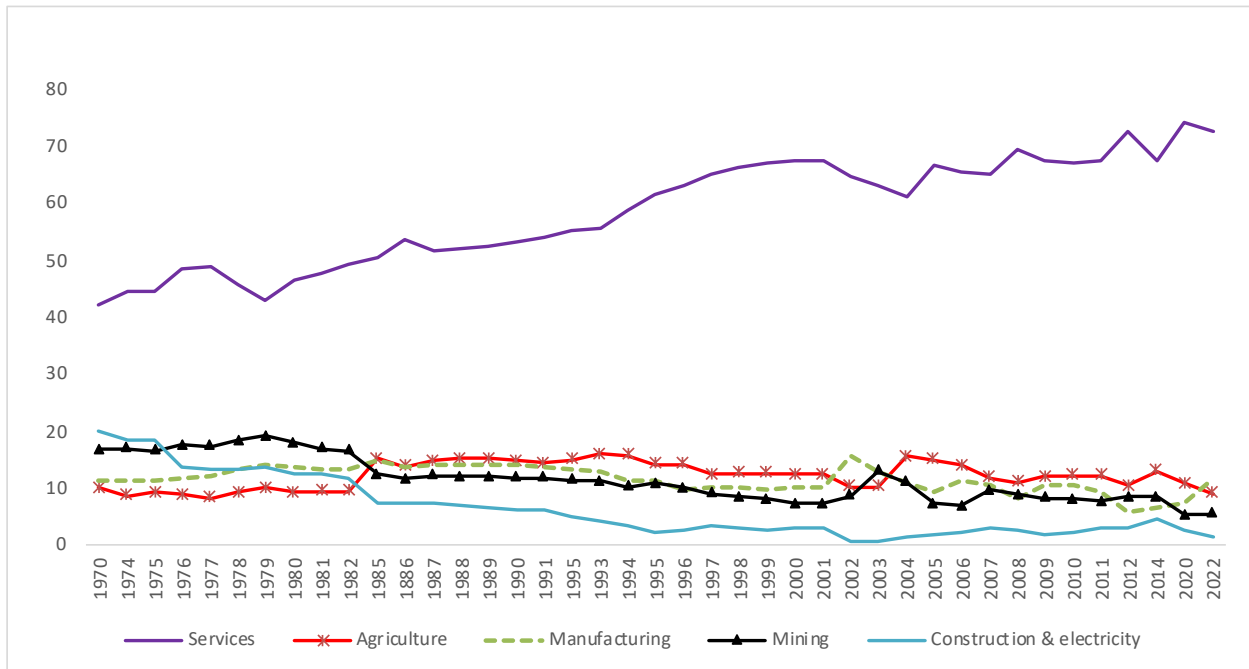
Figure 4: Formal employment in mining and share in total employment, 1970-2022



Source: Authors' construction using data from ZSA database

The decline in the contribution of mining to job creation is a result of a gradual shift in the structure of the economy, with a transition from the primary sector straight to the service sector while manufacturing continues to stagnate. The share of services in formal employment has increased steadily from 40% in 1970 to over 70% in 2022 (Figure 5). The question raised by this structural change is whether the jobs created in the service sector generate adequate income to sustain the livelihoods of the population. Moreover, the tradition of social service provision by the mining companies cannot be replicated by service sector firms, which are less financially equipped to support such a mission. The structural changes observed in the economy, therefore, may have significant implications for social development that are often overlooked in the analysis of the performance of the mining sector and the dynamics of structural change taking place in the Zambian economy.

Figure 5: Sectoral share of employment, 1970 - 2022

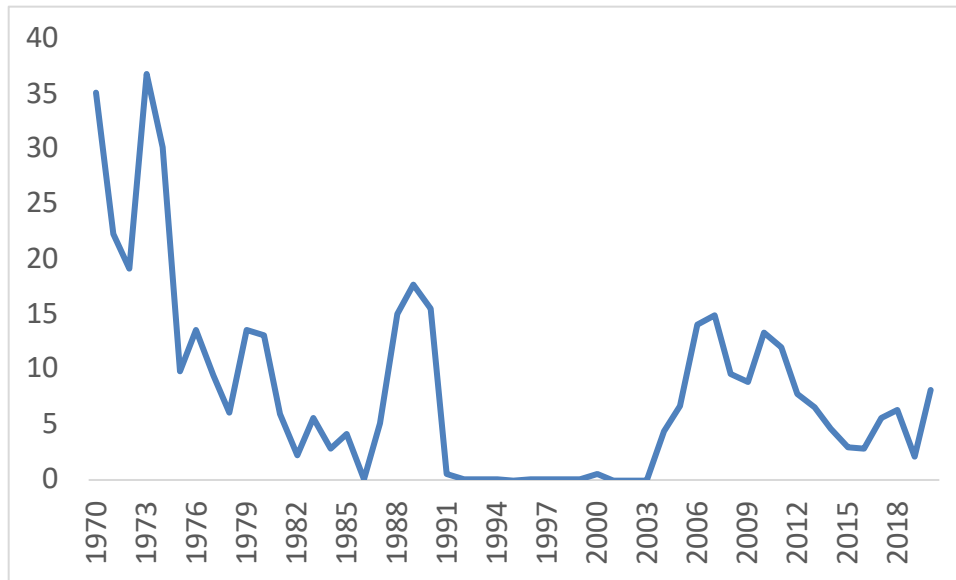


Source: Authors' construction using data from ZSA database

### ***Mining and government revenue***

The mining sector has always been regarded as a major source for mobilizing government revenue in Zambia. Indeed, from independence through the early 1970s, mining generated a dominant share of total government revenue. Mining revenue was at a commanding 59 percent of total domestic revenue in 1965. But in 1970 it was down to 35.2 percent and from 1973 (36.8%) it began a steady decline until 1986 (0.1%) (Figure 6). The completion of the privatization of the mines in the early 2000s and the rebound in production and exports led to an increase in government revenue. But while investments in the sector led to an increase in copper production and exports after 2002, the share of the mining revenue in the national budget remained low. This underperformance in revenue generation is attributable to inefficiencies in the fiscal regime, notably the generosity of the incentives embedded in the mining agreements granted to new private foreign mine owners (Simpasa et al., 2013).

Figure 6: Mining revenue as a percentage of government revenue, 1970-2020



Source: Source: Authors’ construction using various CSO reports and Simpasa et al. (2013)

Ultimately, revenue mobilization is a yardstick of the government’s ability to leverage the country’s mineral resource abundance. As Alan Whitworth points out, “With few linkages, jobs only for a relatively privileged minority and with profits accruing to mainly foreign owners, mining’s greatest value to the economy is its contribution to government revenue. If productively invested, revenue from mining can benefit the entire population” (Whitworth, 2015:957). Achieving optimal revenue mobilization has indeed been a major impetus behind the various reforms of the organizational structure of the mining sector since independence. The mining sector generates government revenue directly through dividends and various forms of levies, as well as indirectly through its spillover effects on tax-generating activities. In this section, we focus on direct revenue mobilization from mining.

Government revenue from the mining sector is critically dependent on the fiscal regime that governs the contracts between the government and private investors. In the case of Zambia, the centerpiece of the fiscal regime is mineral royalty, currently set in the range of 3-6%, which is in the mid-range of world rates. In addition, the government levies company profit tax at 30% and standard VAT at 16%. In addition, a variable profit tax of 0-15% has been imposed on and off.

As can be seen in the data in Table 6, the mining sector is the dominant source of government revenue. In 2022, mining and quarrying accounted for 44.2 percent of total revenue collection. This is more than the entire tertiary sector which contributed 4.9 percent of government revenue that year. The dominance of the mining and quarrying sector is even more explicit when considering company income tax revenue as it accounts for a commanding 58 percent in 2022.



The two main instruments for mobilizing government revenue in the mining and quarrying sector are mineral royalty and corporate income tax. In 2021, the two combined accounted for 70 percent of total collections from the mining sector (Table 7). Royalty represented 35% and company income tax brought in 34.9 percent of revenue from the sector. VAT comes next with withholdings on VAT representing 25.7 percent of total mining companies' payments in 2021. Clearly, the government's success in mobilizing domestic revenue is highly contingent on its capacity to levy royalty and corporate income tax in the mining sector.

It is critically important, however, to distinguish between a high share of mining in government revenue and optimality of revenue generation from mining. The dominance of mining is a result of the weakness of other sources of revenue, partly as a result of the 'resource curse' effect due to lack of economic transformation. The dominance of mining reflects the failure of the structural transformation agenda. Moreover, even as revenue from mining represents a large share of total government revenue, it is still far below the sector's potential due to inefficiencies in the fiscal regime, notably low tax rates, exemptions and holidays in favor of mining companies, and various forms of tax avoidance and evasion in the sector. The sign of success of economic transformation will be an increase in overall government revenue associated with a rebalancing of the sources of revenue due to expansion and dynamism of non-mining sectors. In this perspective, Zambia still has a long way to go.

Table 6: Sectoral contribution to gross domestic revenue collections, 2022 (Kwacha, million)

	Gross domestic revenue		Gross company income tax	
	Amount	% of total	Amount	% of total
Primary Sector	38,191.4	45.5%	12,674.1	60.2%
Mining & Quarrying	37,140.6	44.2%	12,211.4	58.0%
Secondary sector	9,599.0	11.3%	1,870.8	8.9%
Manufacturing	6,661.3	7.9%	782.9	3.7%
Tertiary sector	36,231.4	42.9%	6,504.1	31.0%
Wholesale and retail trade	6,325.3	7.5%	1,347.2	6.4%
Finance and insurance	6,670.0	7.9%	2,651.2	12.6%
<b>TOTAL</b>	<b>84,021.8</b>	<b>100.0%</b>	<b>21,049.0</b>	<b>100.0%</b>

Source: Zambia Revenue Authority

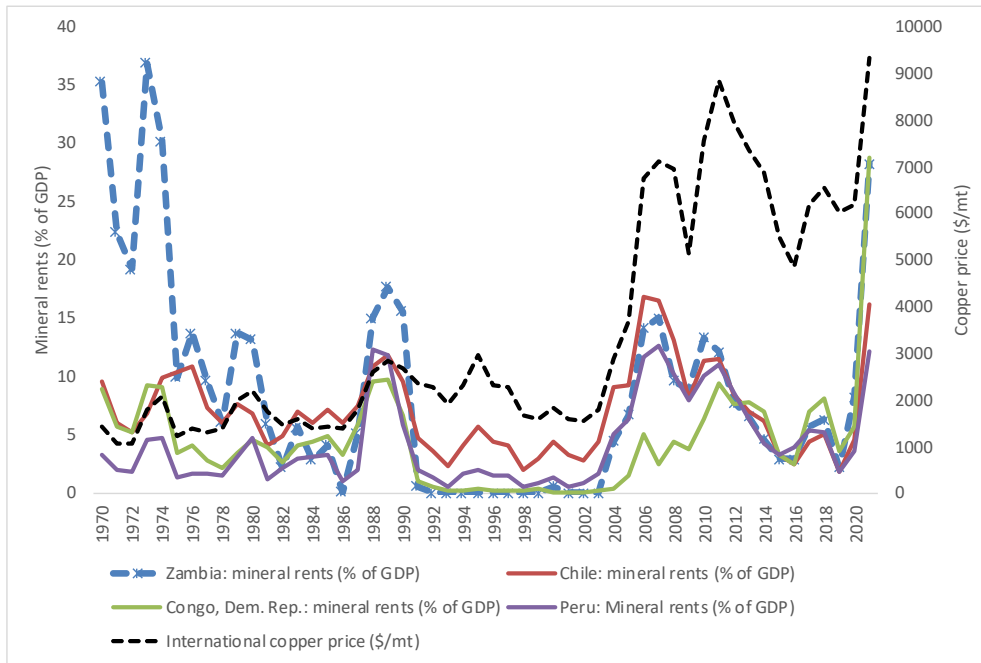
Table 7: Total payments by mining companies to the Government (Kwacha, million) in 2021

	Amount (million Kwacha)	Share of total
Mineral royalty	12,749.3	35.1%
Income tax	12,700.2	34.9%
Withholding on VAT	9,357.4	25.7%
PAYE	2,920.2	8.0%
Import VAT	2,281.9	6.3%
Import/Customs duty	1,339.6	3.7%
Withholding tax	949.9	2.6%
VAT	531.2	1.5%
Local excise duty	195.4	0.5%
Others*	109.7	0.3%
VAT refund	-6,762.0	-18.6%
<b>Total</b>	<b>36,372.7</b>	<b>100%</b>

Source: Zambia EITI Report 2021

From a historical perspective, performance in revenue mobilization from mineral rents in Zambia broadly tracked that of other mineral producing countries as can be seen in Figure 7 which depicts the trend from 1970. Zambia collected record high mineral rents (above 20% of GDP) before the 1974 nationalization of mines, much higher than other countries. Thereafter, mineral rents declined and were stuck at near zero throughout the 1990s. It has been reported that the country entered the copper boom with the lowest mineral royalty rates in Africa from the agreements negotiated in the 1990s (Africa Progress Panel, 2013:63). The reforms in the fiscal regime in the context of liberalization enabled the country to take advantage of the sharp increase in international copper prices in the early 2000s, hence reaping the benefits from a simultaneous increase in the base and rates of royalties. Comparative analysis suggests that Zambia has probably done as well as it can as far as mobilizing royalty revenue from mineral rents. Therefore, the exploration of avenues for improving revenue generation from mining requires looking at the contractual model (concession vs. production sharing), and the entire spectrum of instruments in the fiscal regime and considering ways to strengthen these instruments in terms of design and enforcement.

Figure 7: Trend of mineral rents in Zambia and some other countries, 1970-2022



Source: World Bank: World Development Indicators; Pink Sheets.

In general, analysts have concluded that the structure of the fiscal regime in Zambia has been historically relatively lenient and biased in favor of foreign investors. This is a result of the design of individualized development agreements (DAs) that the government signs with mining companies. Adam, Lippert and Simpasa (2014: 210) assert that “by international standards, the tax structure embedded in the DAs was overly liberal, generous and biased towards the taxation of rents that, at the time of negotiation, were historically low” (also see Adam and Simpasa, 2010).

From close examination, several policy and structural factors have inhibited the achievement of optimal revenue mobilization in the mining sector in Zambia. The key factor is the nature of DAs signed between the government and mining companies, which results in only a few mines effectively paying taxes due to the stabilization clauses embedded in the contracts that last up to 20 years. The fiscal regime enables mining companies to minimize their tax liabilities thanks to generous provisions on tax deductibility and extended loss carryover privileges. The provision of deducting 100 percent of capital expenditures implies that tax deductions remain high for extended periods, given that mines always need to invest not only in expansion but also in maintenance of their equipment in a highly capital-intensive production system. The pervasive use of special incentives to attract and retain investors in the mining sector is, as Conrad (2014: 97) pointed out, “tantamount to an individualized tax system.” Most importantly, the ‘locked in’ incentives in the DAs thanks to the stability clauses mean that the Zambian economy does not fully benefit from mineral booms. As Fraser and Larmer (2010: 15) put it referring to the DAs signed during the privatization of state mining enterprises, “any money that was made from mining was expatriated before Zambians could see the benefits of the ‘boom’.”

Moreover, ambiguities in the definitions of rules for the application of tax instruments create avenues for tax minimization, even by honest taxpayers, and evidently an avenue for corruption in tax administration. For example, the levy of royalties may be based on production or processed output, which certainly implies different values of the base. The absence of clear guidelines can result in substantial losses of revenue even without ill intentions on the part of the taxpayer or the tax assessor.

The last issue we mention here is the legacy of indebtedness that has characterized the mining sector since independence. On the government side, ZCCM-IH inherited massive debt from its predecessor, including accrued pension benefits and other severance costs for laid off employees. This implies that a substantial portion of mining revenue goes to servicing the debts rather than financing development programs. On the private sector side, as the data presented in the next section show, a substantial fraction of foreign investment in mining is made of debt. This implies that the base for company income taxation is eroded by the deduction of interest payments. In cases where the companies in Zambia are branches of large global corporations and borrow internally, then debt financing of investment in mines becomes a conduit for corporate profit shifting. Ultimately, it is the mining corporations that capture the gains from mineral booms, not the mining workers, the government, or the national economy. The 2013 Africa Progress Report recounted a chilling finding of the first EITI report on Zambia that “between 2005 and 2009, half a million Zambians employed in the mining sector were carrying a higher tax burden than companies” (Africa Progress Panel, 2013:63).

Due to these policy and structural factors, the country has not captured its optimal benefits from mining exploitation and increases in international mineral prices. Indeed, suboptimal mobilization of tax and non-tax revenue from mining implies that increases in international demand and price of minerals become ‘cashless booms’ (Conrad 2014: 222)<sup>19</sup> for the country, thus frustrating expectations of mining-led development.

Low performance in government revenue mobilization can also be due to the adverse effects of mineral bounty on government policy. The expectation of revenue growth from the expansion of mineral production and increases in international demand and price of commodities may discourage domestic revenue mobilization from other sources as politicians avoid making difficult policy decisions – like taxation of the economic and political elite – to gain and maintain support for the regime. This argument has been advanced as one of the explanations for the suboptimal gains from mineral booms in Zambia since independence (see Larmer, 2010).

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<sup>19</sup> Also see Adam and Simpasa (2010: 86).

## 7. External Financing of Mining and Foreign Exchange Earnings

The mining sector has always been considered the main source of foreign exchange earnings through exports, external financing in the form of foreign direct investment, and external borrowing. On balance, the country's success on this front has been less than satisfactory. In other words, the country has performed below potential in attracting foreign capital and accumulating foreign exchange reserves, while at the same time, it has faced severe external debt distress, some of which is associated with leveraged investments in the mining sector as illustrated in this section.

### *Foreign direct investment*

Before examining the trend of foreign direct investment (FDI) in Zambia's mining sector, it is useful to highlight a general fact about FDI in the country. Despite its large endowment in mineral resources, Zambia has traditionally attracted relatively limited foreign direct investment (see Figure 8). That is the African story: the continent has typically been marginalized in the allocation of global foreign direct investment compared to other developing regions. In fact, the pattern of FDI in Zambia tracks perfectly that of its mineral-rich peers, such as its neighbor the Democratic Republic of Congo. It appears that mineral resource endowment does not expunge the negative investor bias vis-à-vis Africa.

Now back to mining financing in Zambia. While we have not been able to access historical time series data on FDI specifically going to the mining sector, it is possible to make inferences from the trend of total investment on the basis that the mining sector is the primary recipient of FDI in the country. In 2015, the sector accounted for 67 percent of the stock of FDI in the country (Table 8). The ratio has declined since then, settling at 56 percent in 2020 (Bank of Zambia 2016, 2021).

Table 8. FDI liabilities stock by sector in 2015 and 2020, million US\$

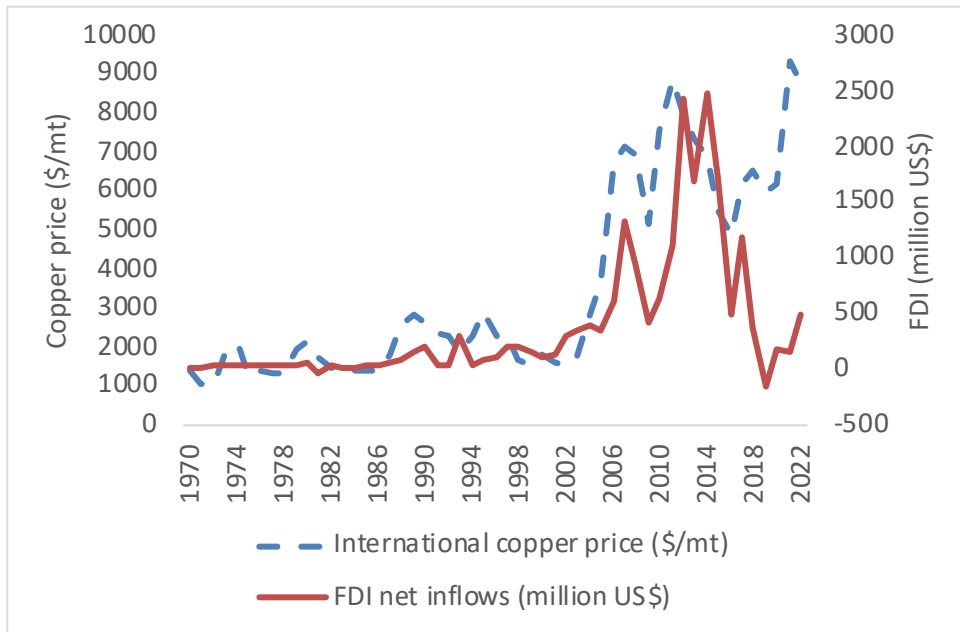
	FDI 2015		FDI stock 2020		Change 2015-2020
	US\$ million	share of total	US\$ million	share of total	
Mining and quarrying	11,132.3	67%	8,513.5	56%	-24%
Manufacturing	2,189.2	13%	2,824.4	19%	29%
Wholesale and retail trade	537.2	3%	959.2	6%	79%
Agriculture	181.9	1%	879.3	6%	383%
Commercial banks	539	3%	735.8	5%	37%
Real estate	382.4	2%	622.5	4%	63%
Construction	99.6	1%	407.3	3%	309%
Electricity	263.1	2%	167	1%	-37%
Accommodation and food	1,236.6	7%	99.4	1%	-92%
Other sectors	147.1	1%	-70	0%	-148%

Sources: Bank of Zambia: *Foreign Private Investment & Investor Perceptions in Zambia*, editions 2016 and 2021.

Historical data show that, as would be expected, there was negligible foreign direct investment in the country during the era of state control over the mining sector from the 1970s through the 1990s (Figure 8). This era also witnessed low international mineral prices, especially for copper, which disincentivized foreign direct investment. Despite the re-privatization of mines starting in the early 1990s, FDI remained low and only started to increase at the turn of the century. However, we cannot attribute this upward trend in FDI solely to the domestic policy environment as it coincides with an international primary commodity boom, characterized by a steep rise in international copper prices. Increased foreign direct investment in this period was also necessitated by replacement investment to maintain production capacity following a prolonged period of low investment since the nationalization era. It is also important to note that the decline in investment risk due to political stabilization helped sustain the increase in investment. The period of increasing foreign direct investment also witnessed a steep increase in copper production and exports in Zambia, riding on the international commodity boom.

Foreign direct investment inflows declined dramatically from a peak of \$2.5 billion in 2014, turning negative in 2019. The decline in FDI started in the context of a sharp reduction in international copper prices during 2011-2016. While copper prices have now fully recovered their pre-2011 level, FDI flows to Zambia are still at one-fifth of their 2014 level (\$540 million in 2022).

Figure 8: FDI into Zambia and international copper prices, 1970-2022

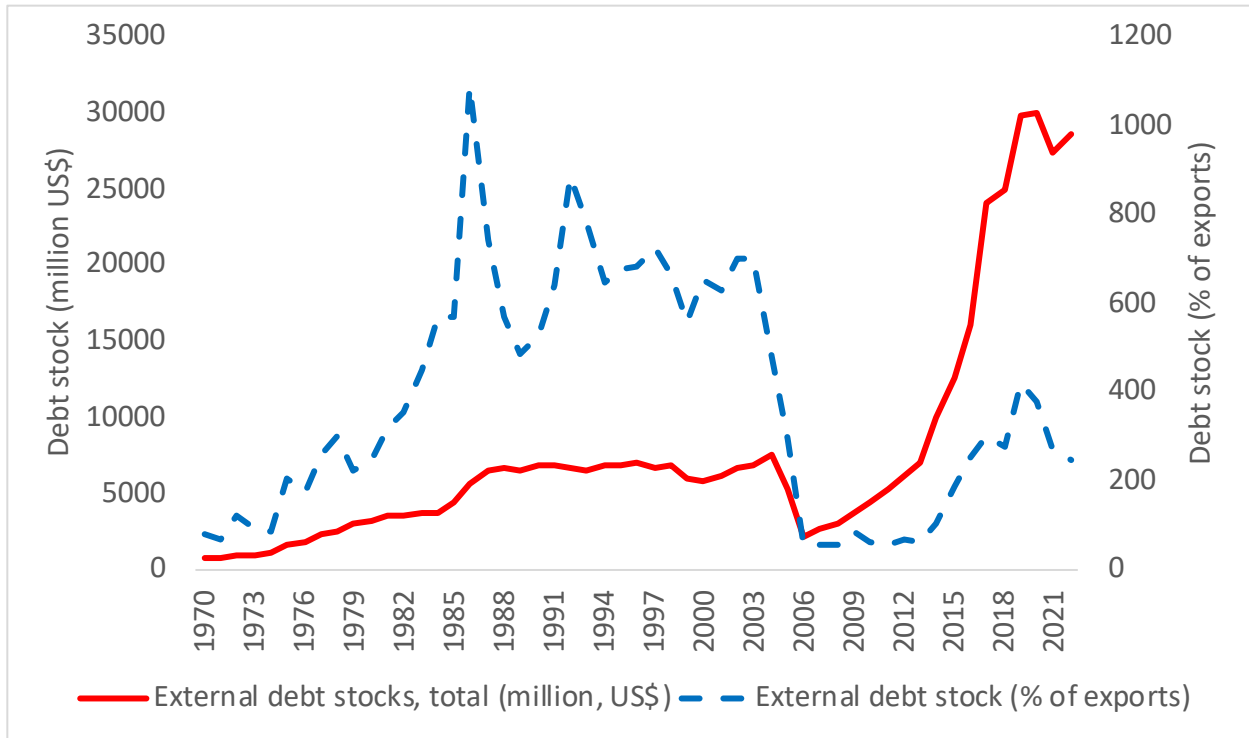


Sources: UNCTAD (FDI); World Bank Pink Sheets (copper price)

### ***External debt***

Zambia has experienced two distinct phases in external borrowing since 1970 (Figure 9). First external debt accumulated steadily until the end of the 1980s and stabilized until 2002. As the country was classified as a heavily indebted poor country, it qualified for debt forgiveness, which drastically reduced the debt stock from a peak of \$7.5 billion in 2004 to a low of \$2.2 billion in 2006. However, thereafter – second phase – external borrowing resumed, largely on commercial terms as the country was classified as a lower middle-income country. The debt stock reached a historical peak of \$30 billion in 2020.

Figure 9: Zambia’s external debt (stock in US\$ million and percent of exports), 1970-2022



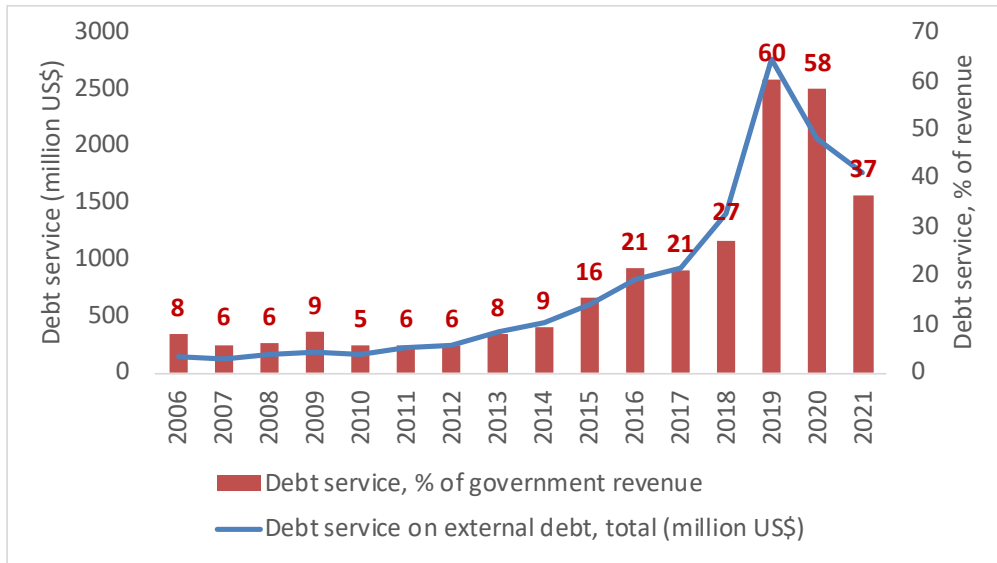
Source: World Bank, International Debt Statistics

External debt accumulation was characterized by key dynamics and shifts that are the genesis of the debt distress that the country witnessed, leading to its defaulting on the Eurobond in 2020. First, as debt accumulation accelerated, its composition also increasingly shifted away from concessional debt towards higher-interest loans, with an increasing resort to sovereign and non-Paris Club loans, especially from China. During the debt acceleration period, the share of concessional debt dropped from a peak of 57.5% in 2005 to a low of 6.7% in 2022. Second, as the debt composition shifted toward non-concessional loans, this implied higher interest on new debt commitments. Hence, each new dollar borrowed implied a heavier debt service burden, draining more government revenue away from public investment and social service provision.

Additional concurrent developments contributed to the worsening of Zambia’s debt burden since the mid-2000s. During this period, the government took on an increasing share of loans denominated in US dollars, at a time when the dollar was appreciating while the Zambian Kwacha was depreciating. In economic terms, this implies that servicing external debt increasingly required the country to earn more Kwachas for each dollar to be paid. Indeed, as can be seen in Figure 10, as the debt service exploded in the 2010s, it continued to eat up an increasing share of government revenue, with the ratio peaking at 60% in 2019. The acceleration of the debt burden relative to exports and government revenue was a recipe for debt distress. But this was debt distress foretold over the past decades.



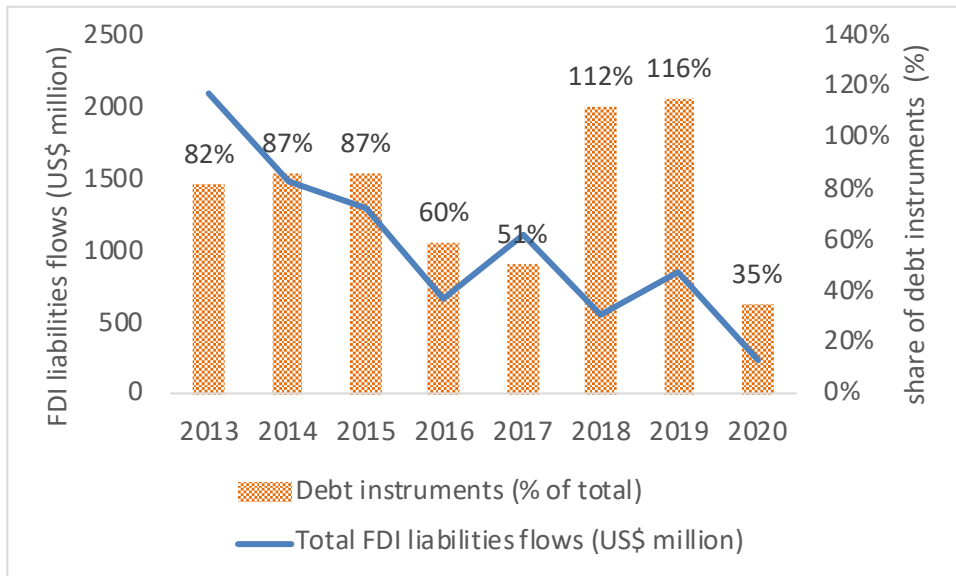
Figure 10: External debt service (million US\$ and percent of government revenue), 2006-2022



Source: World Bank, International Debt Statistics

Data from the Bank of Zambia’s surveys on foreign investment and investors indicate that external debt constitutes the most prominent instrument of FDI in the mining sector (Figure 11). Over 2013-2015 debt represented over 80 percent of FDI liabilities inflows. In 2018 and 2019 external borrowing helped offset large dividend outflows (negative retained earnings). Debt represented 3.5 times and 3.9 times the equity capital flows, respectively, in those two years.

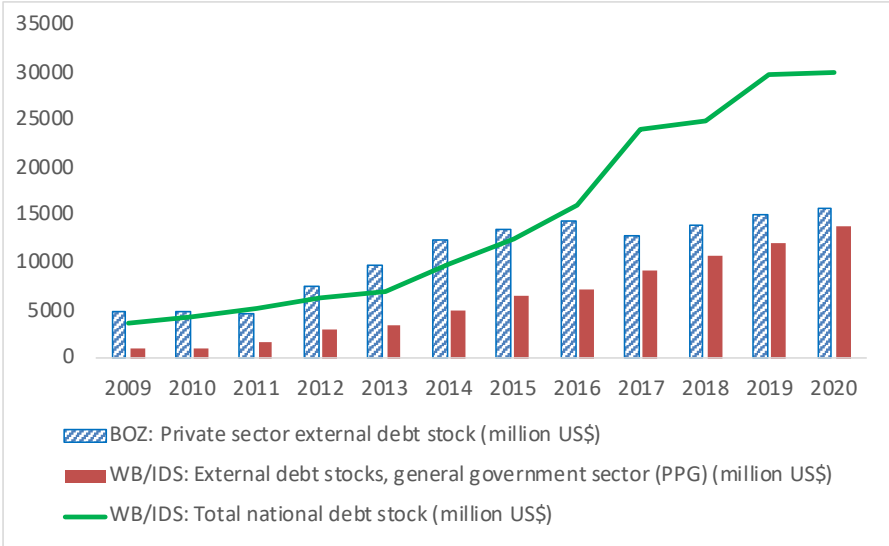
Figure 11: FDI liabilities flows into the private sector, 2013-2020



Sources: Bank of Zambia: *Foreign Private Investment & Investor Perceptions in Zambia*, editions 2013-2021.

The private sector has been an important contributor to the acceleration of the country’s external debt over the past two decades. The mining sector accounts for the largest share of private sector debt associated with foreign direct investment. In fact, private sector borrowing has exceeded general government debt, although the gap has gradually narrowed since 2017 as can be seen in Figure 12. In 2015, the stock of private sector debt stood at \$14.6 billion against \$6.7 for government debt. In 2020, the respective amounts were \$15.9 billion and \$13.8 billion.

Figure 12: Stock of external debt owed to the private sector and the general government (million US\$)



Source: World Bank, International Debt Service (WB/IDS); Bank of Zambia database (BOZ)

The reliance on external debt as an instrument of foreign direct investment poses two important problems. First, it raises the country’s overall external debt burden and its vulnerability to shocks that can plunge it into debt distress. Second, debt financing by foreign corporations erodes the tax base through deductions of interest payments from taxable corporate income. This undermines efforts to raise government revenue from the mining sector which is dominated by foreign corporations. Low revenue mobilization further undermines the country’s debt service capacity, exacerbating the risks of debt distress. It is clear, therefore, that while Zambia’s tenuous debt situation is a result of complex factors, the mode of external financing of the mining sector has played a significant role in the dynamics of the country’s external debt conditions. Reversing the dependence on external debt will require substantial improvement in revenue generation from mining, which poses the central question about the design and efficiency of the fiscal regime governing the mining sector.

***Foreign exchange earnings: Cashing in on mineral booms?***

The mining sector has been the largest source of foreign exchange across sectors through foreign direct investment and exports of minerals. According to data from the Bank of Zambia, the mining

sector generated over 30 percent of the total supply of foreign exchange over 2013-2021 (Table 9). Foreign financial institutions come next with 16.3 percent. In contrast, the mining and quarrying sector is a relatively low user of foreign exchange, taking only 2.8 percent of total demand. The main users are public administration (14.7%), financial intermediaries (12.7%) and wholesale and retail trade (11%).

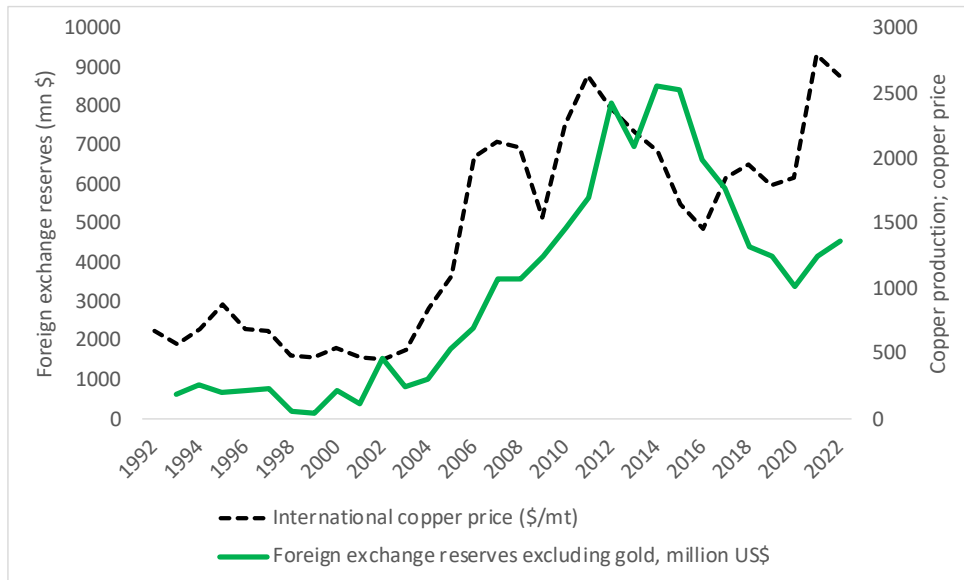
However, even though the mining and quarrying sector supplies the largest share of foreign exchange among sectors, the question remains as to whether it has performed up to its potential in terms of generating hard currency flowing into the country. Mineral booms are expected to be associated with increased foreign exchange accumulation. Indeed, the data indicate that Zambia has recorded substantial foreign exchange accumulation in the context of the sustained increase in copper price over the past two decades (Figure 13). The stock of foreign exchange reserves rose steadily from \$247 million in 2003 at the start of the price boom to \$2.4 billion in 2012 before the 2014-2016 commodity price crash. Foreign exchange reserves declined steadily from a peak of \$2.5 billion in 2014 to a 10-year low of \$1 billion in 2020.

Table 9: Supply and demand (use) of foreign exchange by sector in Zambia, total over 2013-2021

	Forex supply, million US\$	Share of forex supply (%)	Forex demand, million US\$	Share of forex demand (%)
Mining and quarrying	23,807.2	30.8	1,956.9	2.8
Foreign financial institutions	12,597.7	16.3	9,017.1	12.7
Domestic financial intermediaries	6,064.4	7.8	6,321.7	8.9
Bank of Zambia	4,078.2	5.3	2,780.9	3.9
Households	3,530.4	4.6	4,172.1	5.9
Electricity, gas and water supply	3,283.7	4.2	4,474.1	6.3
Wholesale and retail trade	3,145.8	4.1	7,814.8	11.0
Transport, storage and communication	3,051.2	3.9	4,402.3	6.2
Manufacturing	2,898.9	3.7	6,248.6	8.8
Construction	2,807.3	3.6	1,660.4	2.3
Agriculture, hunting and forestry	1,980.6	2.6	1,808.1	2.5
Health and social work	1,496.5	1.9	545.2	0.8
Community and social service activities	1,333.3	1.7	241.4	0.3
Public administration and defense; compulsory social security	791.8	1.0	10,491.2	14.7
Real estate, renting and business activities	603.9	0.8	478.3	0.7
International organizations and bodies	575.0	0.7	40.6	0.1
Hotels and restaurants	317.8	0.4	122.3	0.2
Education	277.5	0.4	96.2	0.1
Forex Bureaus	103.9	0.1	3,713.9	5.2
Other business activities	4,629.1	6.0	4,740.7	6.7
Total	77,374.3	100.0	71,126.9	100

Source: Bank of Zambia database

Figure 13: Foreign exchange accumulation through the copper boom



Source: World Bank Pink Sheets; IMF International Financial Statistics

Does Zambia effectively leverage its potential in foreign exchange generation from the mining sector? Most importantly, does the country reap the benefits of mineral export booms in terms of foreign exchange earnings that effectively contribute to meeting the country’s international financing needs? The amount of foreign exchange earnings from commodity exports that effectively flow through the Central Bank can be estimated as:

$$\text{Forex earnings} = \text{Exports} - \text{Company forex use} - \text{Forex retention abroad} \quad (\text{Eq.1})$$

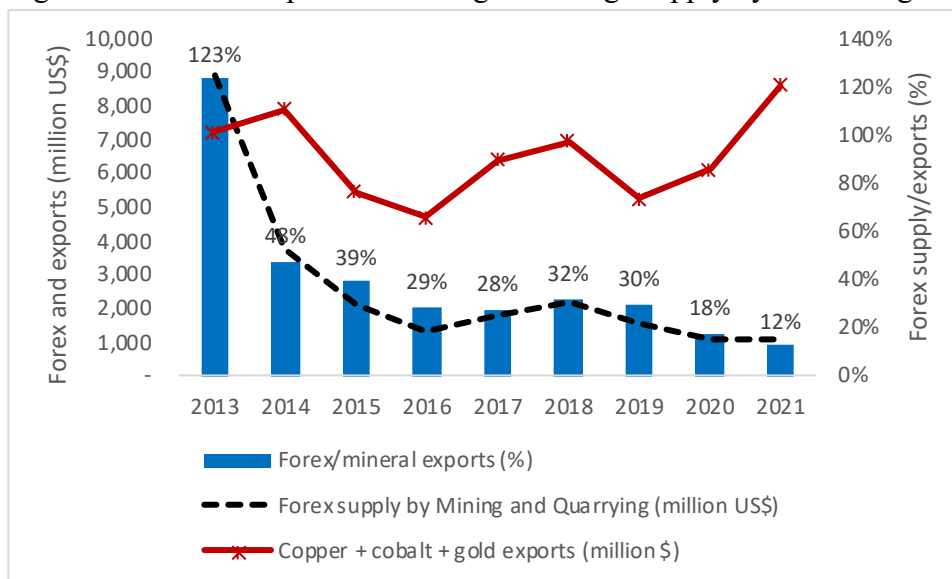
During commodity booms, the volume of exports increases, and this is evident in the data, especially during the commodity booms since the early 2000s. A company’s use of foreign exchange represents the purchase of production inputs including machinery, raw material and services. It also includes payment of external debt owed by mining houses. As exhibited in the previous section, external borrowing has been a predominant instrument of foreign direct investment in the mining sector. This leads to high debt service liabilities which must be covered by export proceeds. The debt-dominated financing structure of mining houses therefore constitutes a constraint to foreign exchange accumulation in the country, limiting resources available for use by the Zambian economy outside of the mining sector.

The amount of export proceeds retained abroad by mining companies depends on both their own external obligations as well as the fiscal regime and foreign exchange regulations. In some countries the government sets rules regarding the repatriation of export proceeds as a means of optimizing the foreign exchange gains for the country. In the case of Ghana, for instance, the retention rates (minimum and maximum) are negotiated between the government and gold mining

companies within Development Agreements. These ratios vary substantially across companies, ranging from 25%-45% for Associated Goldfields to 60%-95% for Goldfields (Gh) Ltd (Ndikumana and Cantah, 2023). In the case of Zambia, mining companies and exporting firms in other sectors do not face any regulatory obligations to repatriate foreign exchange earnings from exports. Without a regulation on repatriation of export proceeds, it is difficult if not impossible for the country to reach its potential in terms of foreign exchange earnings from mineral exploitation.

Examination of the trend of mineral exports and foreign exchange earnings from the mining and quarrying sector indeed shows a disconnect between the two. As Figure 14 illustrates, the volume of exports of major minerals (copper, cobalt, and gold) and the supply of foreign exchange by the mineral sector have diverged and the gap has widened since 2016. As a result, the relative contribution of the mining and quarrying sector has declined steadily over the past decade, with the ratio of foreign exchange earnings to total exports dropping from 48 percent in 2014 to only 12 percent in 2021. The disconnect between mineral exports and foreign exchange inflows is partly attributed to the lax regulation that leaves a free hand to mining companies as to whether they repatriate their export proceeds and how much.

Figure 14: Mineral exports and foreign exchange supply by the mining sector



Source: Bank of Zambia

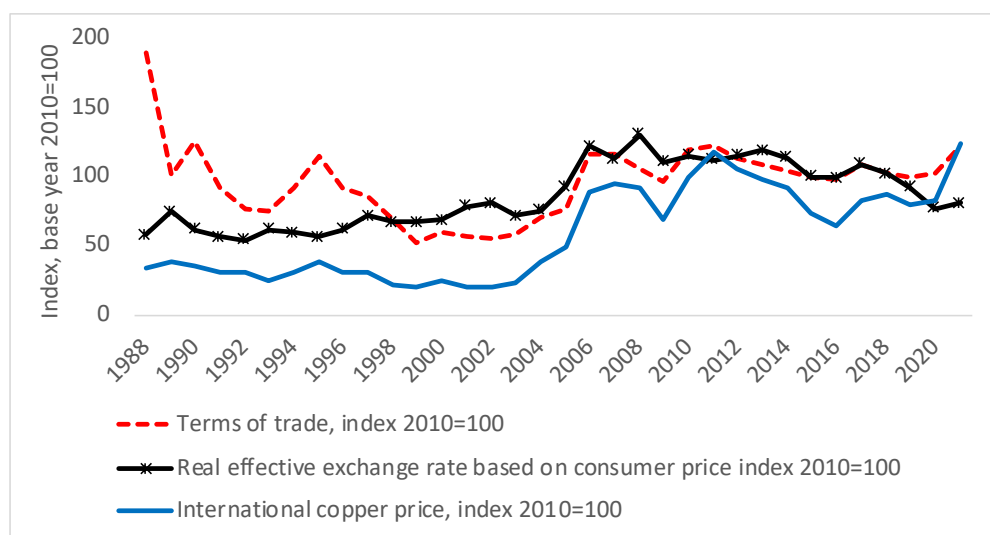
### ***Kwacha, the ‘commodity currency’***

At Zambia’s independence in 1964, mining contributed 92 percent of total exports. Twenty-eight years later in 1992, copper, cobalt and gold were still accounting for 91 percent of total exports. The share of mining has declined since then, but the sector still carries a commanding share of the country’s exports. In 2021, copper, cobalt and gold accounted for 74.6 percent of total exports of goods and services. Due to this dependence on the mineral sector, the country is highly vulnerable

to shocks to the prices and demand for mineral commodities. Indeed, the country's terms of trade are strongly influenced by movements of mineral prices, with immediate effects on the exchange rate of the kwacha against the US dollar. In fact, as commodity exports go, so goes the exchange rate of the Kwacha; hence the epithet of 'commodity currency' as is the case for all commodity-dependent countries (Bova, 2012; Cashin et al., 2002, 2004; Ngandu, 2005). The linkages between commodity exports and the terms of trade and the implications for the exchange are the primary mechanisms for the Dutch disease effects of mineral resource exploitation. During commodity booms, improvements in the terms of trade lead to exchange rate appreciation, which undermines the export competitiveness of non-extractive sectors. During commodity export slumps, the terms of trade deteriorate, and the exchange rate depreciates. To the extent that there is sufficient production capacity and international demand for non-resource sector products, this would help the country to weather the storm through a rebound of non-extractive exports. However, as mineral-rich countries tend to depend heavily on imports of equipment and raw material, a collapse of commodity exports undermines their import capacity, suffocating economic activity in the non-resource sectors. That has been the story of Zambia.

Indeed, the data show that movements in international copper prices have been closely related to movements in the real exchange rate of the Kwacha (Figure 15). Specifically, increases in copper prices have been followed by appreciation of the real exchange rate, as illustrated especially from the early 2000s. So, while mineral booms may yield increased foreign exchange earnings, this may come at a cost of a loss in export competitiveness in other sectors due to real exchange rate appreciation. In contrast, periods of declining mineral prices are accompanied by depreciation of the national currency, which raises the import bill and puts upward pressure on inflation, thereby eroding the living standards of the population.

Figure 15: Copper price, terms of trade and the real exchange rate, 1988-2021



Sources: World Bank Pink Sheets; IMF International Financial Statistics

## 8. Mining and Wealth Accumulation

### *Zambia on the global wealth accumulation bandwagon?*

The past two decades have witnessed an unprecedented accumulation of private wealth globally in the context of growth acceleration, commodity booms and financial integration. Africa has experienced wealth accumulation that mimics these global trends, albeit at a relatively lower rate. While estimates vary across reports due to disparities in measurement and scope, private wealth in Africa has reached impressive levels, ranging between \$1.9 trillion and \$2.4 trillion as of 2022 depending on the source used.<sup>20</sup> According to Capgemini's *2023 Global Wealth Report*, private wealth held by high-net-worth African individuals increased from \$839 billion in 2008 to \$1.9 trillion in 2022 (Capgemini, 2023). That is a 121% increase or 5.8% annual compound growth rate over the period. These rates are slightly lower than those of global private wealth of HNWI's over that period, which stood at 153% and 6.9%, respectively.

It is important to note, however, that in the case of Africa, wealth accumulation is heavily concentrated within a small fraction of the population benefiting from the increased affluence. This can be gleaned by comparing the continent's share of wealth vs. the number of HNWI's in the world. In 2022, Africa accounted for 2.2% of global wealth, while Africans classified as HNWI's represented only 0.9% of the global population of HNWI's. The data suggests that wealth accumulation in Africa has been accompanied by increasing inequality.

<sup>20</sup> See Capgemini (2023), Credit Suisse (2022); Henley & Partners (2023); AfrAsia Bank (2021)

While Zambia has experienced a relatively fast growth in private wealth over the past decade – rising by 22% from 2012 to 2022, it generally performs relatively modestly in terms of the level of wealth compared to the average in continent and globally. Table 10 presents highlights on private wealth and the number high net worth individuals in top ranked African countries and includes Zambia for comparative purposes. Zambia also performs poorly relative to other mineral resource-rich countries. Figure 16 plots private wealth against mineral exports among mineral-dependent developing countries as classified by UNCTAD (2023). Clearly, Zambia is punching below its weight in terms of leveraging its mineral resources to generate wealth. As can be seen in the figure, Zambia is below the trend line, meaning that it is generating less wealth than would be possible given its mineral exports.

The other important issue besides underperforming in leveraging mineral resources is that private wealth accumulation only benefits a very small fraction of the Zambian population. The estimates presented here concern the wealth of the high-net-worth individuals, who own \$1 million or more in liquid assets. There are only 900 of those in the country. This is 4.5 out of 100,000 Zambians (based on 2022 population). Thus, for ordinary Zambian citizens, such wealth accumulation is an alien concept, as their main concern is whether they can afford decent housing, feed their family, send their children to school and afford healthcare. As shown in the data presented in the next section, poverty levels remain high, and vulnerability to shocks remains a serious issue as illustrated by the uptick in poverty since 2015 due to shocks to agricultural production and the Covid-19 pandemic. Therefore, the dual policy challenge is how to leverage more wealth from mineral resources and – more importantly – how to ensure that the wealth benefits the majority of the Zambian population.

Table 10: Estimates of private wealth in 2022

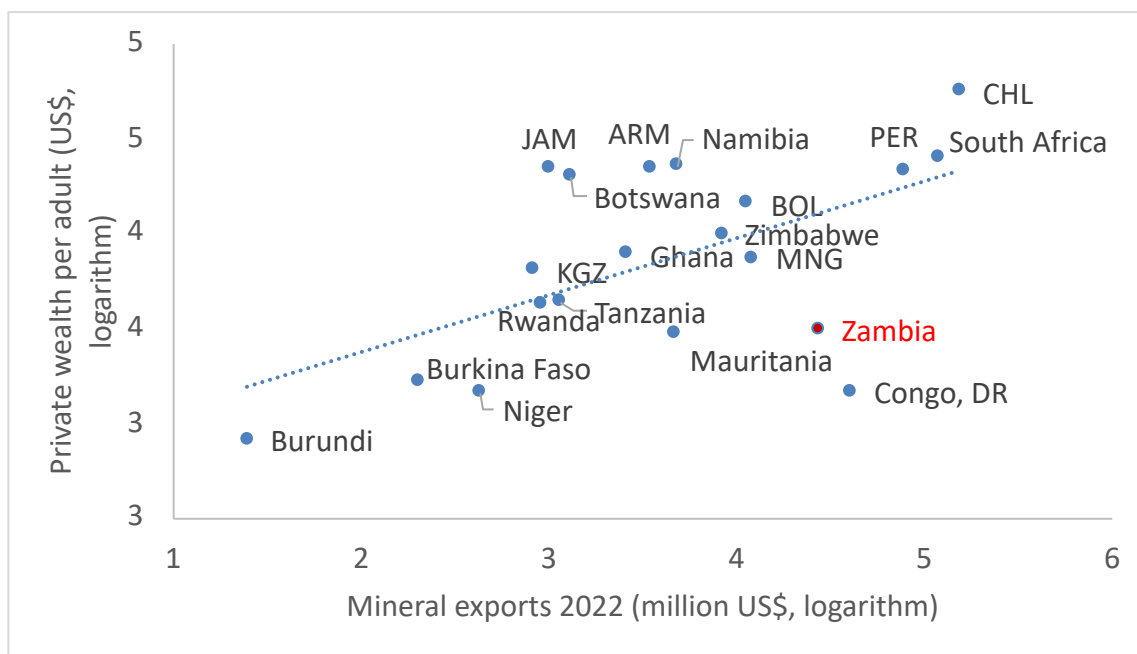
	Stock of private wealth (\$bn)	Number of HNWI's (\$1m+)	Number of multi-millionaires (\$10m+)	Growth of number of millionaires over 2012-2022
South Africa	651	39,300	2,080	-21%
Egypt	307	16,900	880	-25%
Nigeria	228	10,000	510	-30%
Morocco	125	5,000	220	28%
Kenya	91	8,500	340	30%
Ghana	59	2,900	120	24%
Zambia	14	900	30	22%
Africa	2,400	138,000	6,200	
Zambia's share in Africa	0.6%	0.6%	0.5%	

Sources: Wealth estimates are from wealth reports by AfrAsia Bank, Henley & Partners, and Credit Suisse. Estimates for the stock of capital flight are from Ndikumana and Boyce (2021) and Ndikumana (2023).



Notes: HNWI = high net worth individuals, owning at least \$1 million in liquid assets. HNWI numbers are rounded to the nearest 100. Multi-millionaire figures are rounded to the nearest 10. The numbers include only people living in each country (residents). Other African countries not included in the table that have larger stocks of private wealth than Zambia (in descending order of wealth amount) are Tanzania, Angola, Ethiopia, Mauritius, Côte d'Ivoire, Uganda, Namibia, Mozambique and Botswana.

Figure 16: Private wealth and mineral exports among mineral-dependent developing countries in 2022



Source: Wealth estimates are from Henley & Partners wealth report. Mineral exports are from UNCTAD database.

### ***Offshore wealth accumulation – licit and illicit wealth***

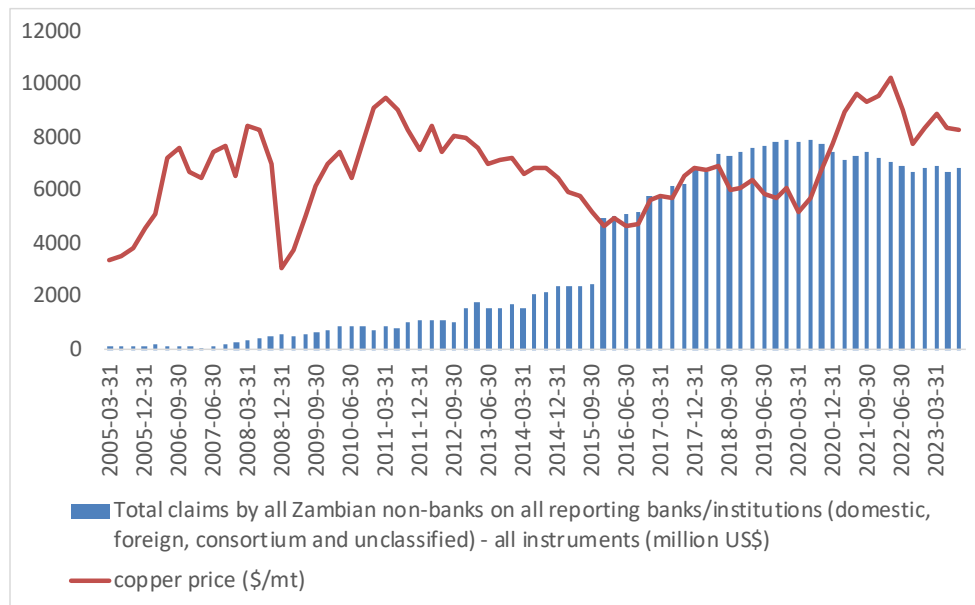
Private wealth may be held in the home country or abroad. In fact, a substantial fraction of private wealth is held abroad in various forms, including liquid and semi-liquid assets in financial systems as well as physical high-value assets such as real estate, gold and art objects. While the relative preference between domestic and foreign holding of private wealth varies by country, evidence suggests that African wealth holders tend to have a relatively high preference for holding their wealth abroad. In a sense, African wealthy people exhibit a negative home bias, contrary to the conventional expectation that investors would prefer domestic assets that they deem less risky than foreign assets. A study by Collier and Hoeffler (2001) found that about 40 percent of Africa's private wealth was held abroad, compared to 39% for the Middle East and only 10% for Latin America. They estimate that the exodus of capital had caused GDP in Africa to be 16% lower than it would have been if the capital had been retained and invested in the continent. The implication is that offshore holding of private wealth, even when the wealth is legitimate, causes significant

economic costs on the source country, and that Africa suffers from capital exodus disproportionately more than other regions.

Various estimates have been developed to assess the value of wealth held offshore. The main estimates are based on surveys focused on affluent people that are published in various wealth reports such as AfrAsia Bank, Henley & Partners, Capgemini, and Credit Suisse. These estimates do not engage with the question of legitimacy of the wealth as reported. The second category consists of holdings in financial institutions by non-bank entities as reported by the Bank of International Settlements. These assets are in the form of various instruments including bank deposits and less liquid assets. Again, these data do not allow us to distinguish between licit and illicit wealth. The third category consists of estimates of wealth accumulated through capital flight and the more general phenomenon of illicit financial flows. The methodology consists of adding to annual outflows the estimated interest earned on these flows over time. Efforts may be made to disentangle between capital flight proceeds that are invested vs. consumed, which is not an easy task. The wealth accumulated through capital flight is by default deemed illicit because of illicit acquisition of the wealth at home (predicate crime), illicit transfer in violation of capital account regulations, and illicit holding of wealth abroad, hidden away from the tax and regulatory authorities abroad and at the source. Below, we present some estimates of the second and third categories of offshore wealth in the case of Zambia.

Figure 17 presents the trend of asset holdings by Zambian non-bank private agents in all banks and financial institutions reporting to the BIS from 2005 to the first quarter of 2023. As can be seen on the graph, bank holdings increased dramatically in 2015 and have remained high since. From December 2014 to March 2015, bank holdings by non-bank Zambian individuals and business entities jumped by 99% from \$2.5 billion to \$4.9 billion. The same graph depicts the international price of copper during that period. It shows that the start of the copper boom corresponds with rapid accumulation of bank holdings in BIS-reporting banks, but the relationship is not sustained past 2018.

Figure 17: Claims by non-bank Zambians on BIS reporting banks and financial institutions, 2005-2023

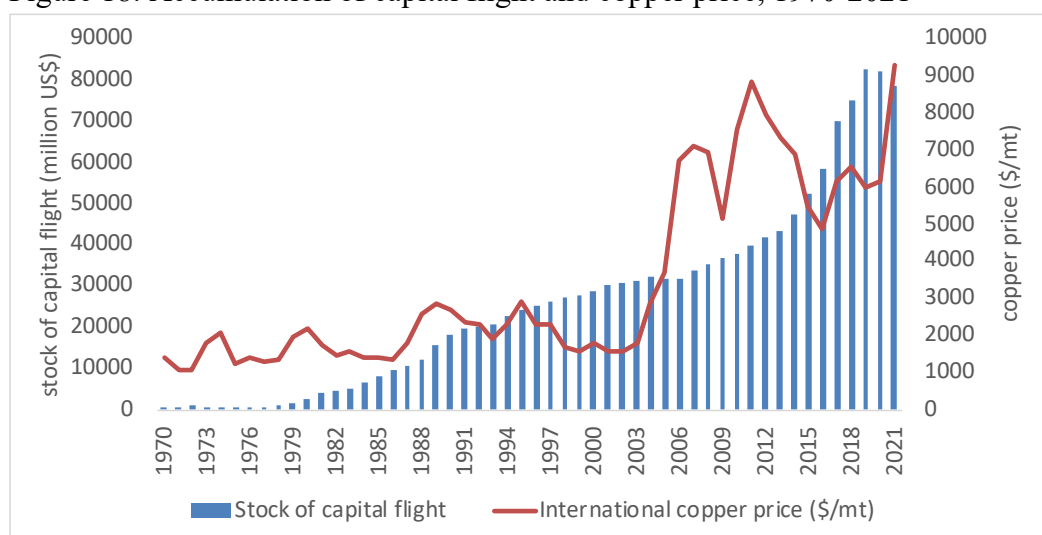


Source: Bank holdings are from BIS database; copper price is from World Bank Pink Sheets.

Next, we examine the accumulation of illicit financial flows from capital flight. The trend of the stock of capital flight is presented in Figure 18, along with the international price of copper. The stock of capital flight is estimated as the compounded value of past outflows capitalized at the US 3-month Treasury bill rate. As of 2021, the stock of capital flight stood at \$78.7 billion. With a stock of external debt of \$24 billion that year, it follows that the country was clearly a ‘net creditor’ to the rest of the world. However, a critical nuance is that while the external debt is a public liability on the shoulders of the Zambian people, capital flight represents private wealth stashed abroad and therefore cannot automatically be used to pay off the government’s debt. Nonetheless, efforts to achieve the country’s financial stability must include strategies for stemming the hemorrhage through capital flight and repatriating stolen wealth stashed abroad.

Capital flight accumulation increased from the early 1990s and it shifted to higher gear from 2015, a period marked by the resurgence of copper prices. The key linkages between the accumulation of private offshore wealth and capital flight involve mineral export misinvoicing and the repatriation of profits from mining exploitation. Unlike licit wealth held abroad legally and transparently, which can generate taxable income and can be repatriated for investment at home, the wealth accumulated from capital flight is a net loss to Zambia. The government earns no tax revenue from such wealth as it is hidden or disguised to remove connections with the beneficial owner and predicate criminal activity that may have generated initial wealth. Such wealth is unlikely to be repatriated and invested in Zambia for fear of prosecution of its illicit origins.

Figure 18: Accumulation of capital flight and copper price, 1970-2021



Source: Data on capital flight is from Ndikumana (2023); copper price is from World Bank Pink Sheets.

Efforts may be made to induce repatriation of private wealth held offshore. For licit wealth held legally abroad, the focus would be on establishing incentives that make repatriation appealing for asset holders in terms of returns to investment considering economic and political risk. In practice, for Zambia, policies aimed at inducing the repatriation of private offshore should be part of the overall strategy geared to promoting domestic investment and private sector development in the country.

The case of illicit private wealth held abroad is more complicated. The first issue is that such wealth is typically disguised to conceal the identity and origin of the beneficial owners. Second, even when the wealth is identified, there are important legal and administrative hurdles that hinder the repatriation of the funds. Some countries have attempted to grant time-bound amnesty to holders of offshore wealth, waiving prosecution against transgression of exchange controls, tax liabilities, and obligations to demonstrate the legitimacy of the origin of their wealth. South Africa adopted a series of tax amnesties in 1995, 2005, and 2006 as well as voluntary wealth disclosure programs aimed at both enticing repatriation of offshore wealth and increasing tax compliance (Aboobaker et al., 2022). The measures yielded disappointing results on both goals. Only modest tax revenues were mobilized through these initiatives due to several structural and institutional constraints. The first constraint was the limited technical capacity of the South African Revenue Service to audit and investigate transgressions of tax laws and exchange controls. The second factor was the large size of illicit trade (e.g., tobacco), smuggling and fraud in international trade. The third factor was the extensive use and abuse of transfer pricing by multinational corporations operating in key sectors notably mining.

Tax amnesties in South Africa also scored a failing grade on the objective of curbing capital flight. In fact, capital flight accelerated in the post-Apartheid period when tax amnesties were implemented in the context of systematic liberalization of the economy (Aboobaker et al., 2022). The general problem is that high net worth individuals who hold assets abroad wield significant economic and political power, which enables them to stifle efforts aimed at enforcing the rules on taxation and capital controls. These political economy dimensions make it hard to design and implement an effective policy for curbing capital flight-induced private wealth accumulation offshore and inducing repatriation of wealth held abroad. South Africa's experience with tax amnesties, and economic liberalization in general, as a means for stopping capital flight and enticing repatriation of private wealth held offshore, can generate important lessons for Zambia should the country consider adopting these strategies to tackle the problem of capital flight and the practice of hiding private wealth in foreign lands.

So, in the end, has mining made Zambia wealthier? Has mining exploitation generated commensurate wealth for the country? The answer depends on who you ask. For the 900 HNWI's who live in a world of affluence and prosperity, the answer is a definite yes. It is a yes also for the multinational corporations that stack up massive profits from mineral exploitation in their offshore accounts. But for ordinary Zambian citizens who are engaged in the mining sector, wealth accumulation remains an alien concept. So is the case for most Zambians who are not employed in mining, whose dreams of reaping 'spillover benefits' from mining remain just that – *only dreams*.

### **9. Has Mining Contributed to Poverty Alleviation in Zambia?**

The goal of mineral resource exploitation is to create income for the Zambian people, provide them with services and increase their wellbeing. Mining is expected to directly improve the living conditions in the concerned communities and nationally through the funding of development programs and the creation of income for the engaged population. In fact, under the post-independence socialist regime, the government mandated state mining firms to operate a 'cradle-to-grave policy' by providing social services including free education for mine workers' children, in addition to subsidized food, housing, power, transportation and water (Lee, 2009). From that perspective, mining exploitation was expected to have an immediate impact on living standards in the mining areas.

Mining also affects people's wellbeing indirectly through spillover effects at both local and regional levels. Mineral exploitation produces what can be called 'local-level multiplier' effects that can be magnified at the regional and national levels (Adam et al., 2014: 214). These effects are stronger if local demand for goods and services is high and concentrated on goods that are intensive in unskilled labor. Overall, the strength of the spillover effects will depend on the

intensity of forward and backward linkages between mines and the local economy.<sup>21</sup> These linkages between mining and the local economy do not happen by chance. They need to be enabled and enhanced by a deliberate industrial policy that aims to incentivize, if not constrain (notably within the development agreements) mining companies to source their inputs and services from the domestic economy as much as possible. One of the important criticisms of the mining sector in Zambia is that mining companies establish linkages primarily with suppliers, manufacturers and markets outside of the country (Fraser and Lungu, 2007). When mining remains an ‘island economy’, the overall welfare gains are limited.

There is relatively limited empirical evidence on the micro-level linkages between mining exploitation and the wellbeing of the population in the mining zones and surrounding areas in Zambia. Alexander Lippert (2014) attempted to fill this gap in a study that tests three hypotheses: (1) An increase in mine-level copper production improves living standards and reduces unemployment in areas around the mines relative to the rest of the country; (2) The positive spill-overs of increased mineral production extend to the rural hinterland of mining cities, neighboring districts, and the population along the copper transportation route; (3) The positive spill-over effects vanish with distance from mines and become insignificant beyond a certain point.

The empirical evidence from the study by Lippert (2014) largely supports these hypotheses. Specifically, the study finds that following an increase in copper production, households in the mining areas record significant improvements in per capita expenditure, housing conditions, child health, and access to drinking water and electricity. The results indicate that the effects are broadly distributed, suggesting a reduction in poverty without an increase in inequality. Moreover, the positive effects extend to the localities away from the mines along the transport routes, but they diminish monotonically with distance from the mines and vanish after about 75 km. Finally, these positive effects accrue to both urban and rural areas around the mining centers. While these results are suggestive of positive gains from mineral exploitation at the micro level, they need to be further investigated to confirm definitively whether and to what extent the Zambian population benefits from mining exploitation.

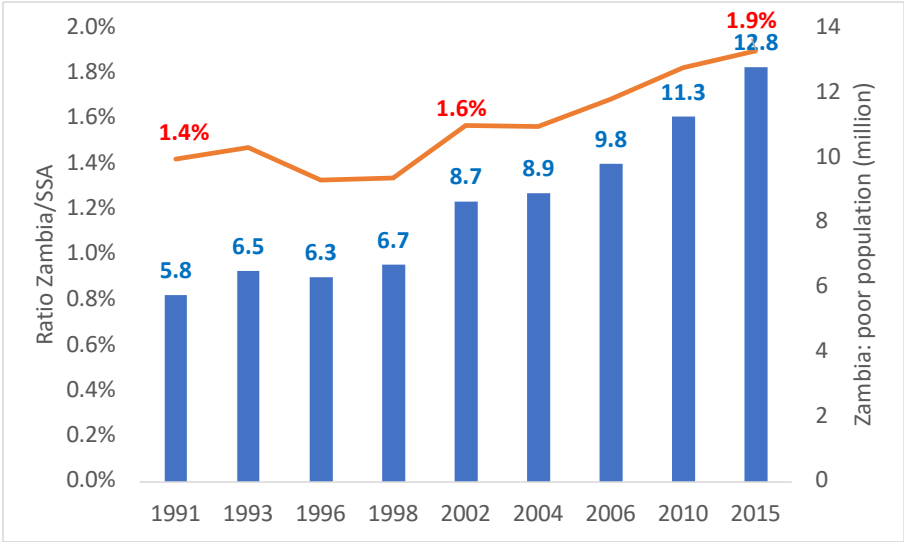
In addition to the complexity of the potential linkages between mining exploitation and poverty, assessing these linkages is complicated by imperfections in the measurement of poverty and wellbeing. Despite the imperfections in the estimates, the data broadly indicated that poverty remains high in Zambia even by sub-Saharan African standards, although it has trended downward since the 1990s.

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<sup>21</sup> See Morris, Kaplinsky, and Kaplan (2012) for a conceptual discussion of policy and structural factors that influence the linkages between extractive sectors and the rest of the economy.

According to data from the World Bank’s Poverty & Inequality Indicators,<sup>22</sup> in 2015, 12.8 million Zambians lived in poverty. That means that in 24 years (since 1991), the number of poor people more than doubled in the country – up from 5.8 million. During this period, the percentage of Zambian poor people relative to sub-Saharan Africa rose from 1.4% to 1.9%, implying that on average the number of poor people increased faster in Zambia than in other African countries (Figure 19).

Figure 19: People living in poverty in Zambia: number (million) and ratio relative to Sub-Saharan Africa, 1991-2015

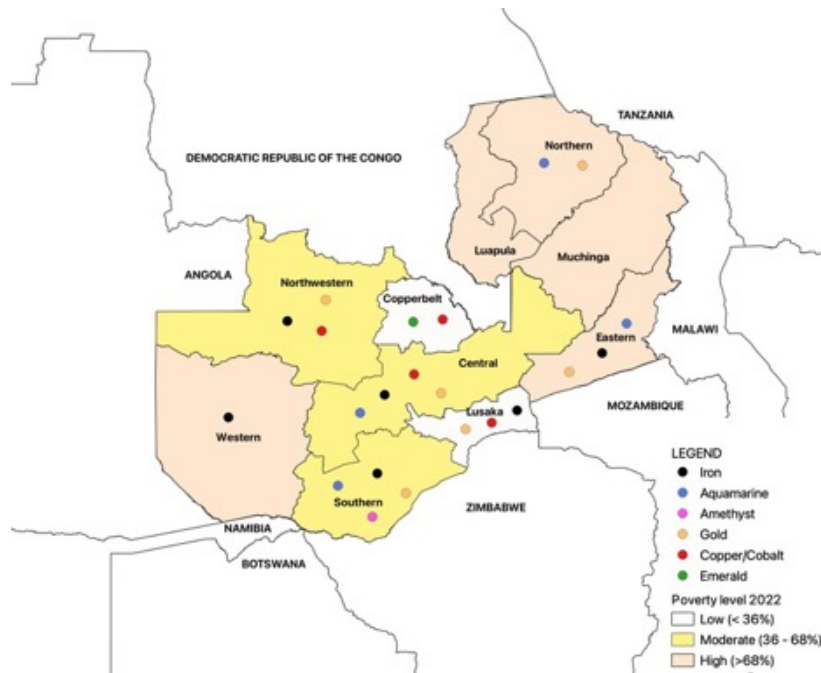


Source: World Bank, Poverty & Inequality Indicators (<https://pip.worldbank.org/poverty-calculator>)

A disaggregated analysis of poverty and wellbeing by province provides an approximate view of the connection between mining and poverty. The question of interest is whether regions that are endowed with mineral resources are better off in terms of poverty reduction and improvement in measures of social development and welfare. Figure 20 presents a map of the country showing the location of minerals with color coding reflecting the level of poverty. The immediate insight from the map is that indeed regions that are most endowed in minerals notably copper have lower levels of poverty as is the case for Copperbelt, Central and North-Western. Considering other mineral products such as gold and gemstones solidifies this insight.

<sup>22</sup> The World Bank’s data on Poverty and Inequality Indicators can be found online here: <https://pip.worldbank.org/poverty-calculator>

Figure 20: Location of minerals and poverty incidence by province (2022 values)



Source: Poverty data is from ZAMSTAT.<sup>23</sup>

Table 11 presents a summary of the trend in poverty between 1996 and 2022 across regions, and Figure 21 provides a visual illustration of the pattern and trend of poverty across regions during that period. The data clearly show that poverty rates are lower in mineral-rich regions such as Copperbelt, Central and North-Western. This suggests that the proximity to mining sites generates economic opportunities that give a comparative advantage to neighboring communities relative to those located in areas with no mining activity. Second, the data indicate that poverty declined much faster in mineral-rich low-poverty regions than in their counterparts that do not have minerals and where initial poverty rates were higher. In other words, there has been ‘poverty divergence’ across regions over time with some association with mining activity.

The data show, however, that poverty incidence at the national level rose from 54% in 2015 to 60% in 2022, a rate that had not been observed since 2010. Across regions, the increase in poverty over 2015-2022 is more pronounced in regions that had lower initial poverty rates which are also endowed in minerals (except Lusaka). The deterioration of living standards was due to the marked decline in GDP growth starting in 2015, declining FDI in the mining sector which reduced job creation in the sector, and the droughts that adversely affected agricultural production. The upward trend of poverty is expected to be reversed gradually with the consolidation of recovery from the COVID-19 pandemic, reversal of the decline in FDI and improvement in fiscal stability following

<sup>23</sup> The map was designed by Dr. Didier Wayoro, which is much appreciated by the authors.



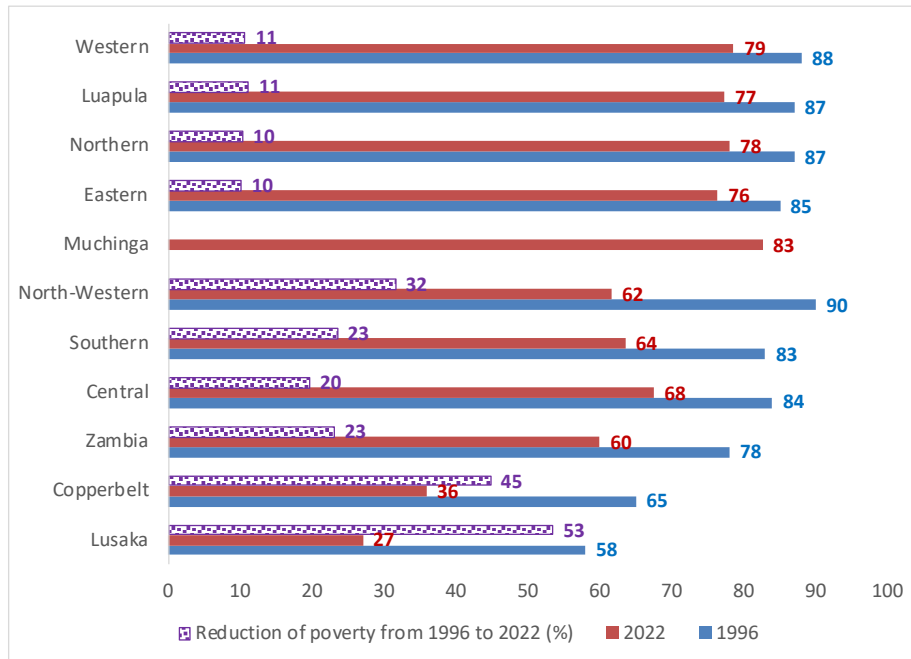
the debt restructuring. Obviously, the timing and strength of this expected recovery remains unknown.

Table 11: Trend of poverty in Zambia, 1996-2022

	Poverty rate (%)			Change in poverty rate (%)		Extreme poverty (%)		change in extreme poverty (%)
	1996	2015	2022	1996 to 2015	2015 to 2022	2015	2022	2015 to 2022
Lusaka	58	20	27.0	-53.4	33.7	11	16.5	50.0
Copperbelt	65	31	35.9	-44.8	16.6	18.2	23.4	28.6
Central	84	56	67.5	-19.6	20.1	39.8	55.4	39.2
Southern	83	58	63.5	-23.5	10.2	38.1	50.9	33.6
North-Western	90	66	61.6	-31.6	-7.2	48.4	50.6	4.5
Muchinga		69	82.6		19.2	54.4	73.1	34.4
Eastern	85	70	76.4	-10.1	9.1	55.9	62.7	12.2
Northern	87	80	78.0	-10.3	-2.1	67.6	65.3	-3.4
Luapula	87	81	77.3	-11.1	-4.7	67.7	69.8	3.1
Western	88	82	78.6	-10.7	-4.4	73	61.6	-15.6
Zambia	78	54	60.0	-23.1	10.3	40.8	48.0	17.6

Sources: ZAMSTAT: <https://zambia.opendataforafrica.org/olwrs1b/poverty-statistics-1991-2015?regionId=ZM-06#>; Key Poverty Highlights of the 2022 Living Conditions Monitoring Survey Results, 22 September 2023.

Figure 21: Poverty incidence by province: level and change from 1996 to 2022



Sources: ZAMSTAT: <https://zambia.opendataforafrica.org/olwrs1b/poverty-statistics-1991-2015?regionId=ZM-06#>; Key Poverty Highlights of the 2022 Living Conditions Monitoring Survey Results, 22 September 2023.

Before closing the discussion on the connections between poverty and mining, it is important to note that other indicators of wellbeing and social development tell a similar story of disparity across regions in favor of those endowed with mineral resources. According to survey data from ZMSTAT in 2015, mining regions exhibit higher degrees of education, access to formal finance as indicated by ownership of an account in a bank or financial institution, household wealth, and infant mortality (Table 11). This suggests that indeed mining generates various avenues for improvement in wellbeing over time. The flip side of the coin is that proximity to mining exposes the household's welfare to adverse effects of shocks to production, demand, and prices of minerals given the low diversification of income sources. This is further justification for the need to leverage mineral resource endowment to promote economic diversification, notably by investing mining revenue into infrastructure that is needed to stimulate activities in non-mining sectors. Economic diversification remains indeed the best gauge for the country's performance in development-oriented management of mineral resources.

Table 11: Wellbeing indicators in Zambia by province in 2015

Region	Years of education	Owns a bank account (%)	Wealth index (min 1-max 5)	Infant mortality (per 1,000 live births)
Central	7.8	16	3.2	67.7
Copperbelt	8.7	27	3.8	60.9
Eastern	6	10	2.6	94.9
Luapula	7	10	2.6	95.6
Lusaka	8.8	33	4.1	64.3
Muchinga	6.9	9	2.4	90.6
Northern	6.9	8	2.4	85.1
North-Western	7.9	19	2.8	55.8
Southern	7.8	14	3.2	62.6
Western	6.7	9	2.3	77.9
Zambia	7.5	16	3	74.2

Sources: ZAMSTAT: <https://zambia.opendataforafrica.org/olwrs1b/poverty-statistics-1991-2015?regionId=ZM-06#>; DHS Zambia 2018: <https://dhsprogram.com/data/available-datasets.cfm>

## 10. Conclusion

Mining has always been an integral part of economic activity in Zambia, long before the Europeans arrived in the area and snatched it from the indigenous people. The colonial regime cemented the control of the sector by foreign corporations, engineering a structure of the sector geared to serving the interest of the capitalists and the British empire. The attempt by the Kauda regime to reverse the colonial legacy through the nationalization of mines was unsuccessful, and the government of Frederick Chiluba restored private ownership of the mines in 1991, with state minority shareholding. The analysis in this paper concurs with the dominant evidence in the literature suggesting that the regulatory model and the fiscal regime governing the mining sector have yielded sub-optimal outcomes in terms of the benefits of mining exploitation for the state and the people of Zambia.

Zambia remains a strategically important player as a mining producer globally, and its importance is further amplified by the global agenda to foster a transition to clean energy fueled in major part by what's referred to as 'strategic minerals'. The critical importance of minerals gives Zambia an opportunity to leverage its mineral endowment to drive the national development agenda and transition to a higher growth path and reach higher levels of living standards in the near term. For that to happen, however, the country needs to undertake substantial reconfiguration in the mode of management of the mining sector and its strategic position in the global economy along the mineral

value chain. Here we highlight some of the critical changes that are required for fostering a new era of gainful exploitation of minerals in Zambia.

The ultimate measure of the success of Zambia will be its capacity to leverage its mining endowment to drive a robust agenda of economic transformation. This entails success by relative attrition for the mining sector. This requires a paradigm shift in the management of the sector, specifically a reorientation of the management of the sector with the primary goals of increasing real national stakes in mining, optimizing fiscal revenue and foreign exchange earnings from mining, reinvesting revenue from mining in the expansion of the production base of the country, and fostering dynamic spillover effects from mining exploitation. To the extent that such transformational changes take place, a gradual decline in the relative share of mining in the economy would be the testimony of success in terms of graduation from resource dependence.

To increase revenue generation and overall gains from mining, a business-as-usual approach will not work. Instead, there is a need for a paradigmatic shift in the management of the mining sector towards increased equity holding by the government and Zambian private investors in new and existing mines. The standard concession-based system whereby the government counts primarily on royalties has proven to generate an unbalanced distribution of the gains in favor of foreign corporations. In this respect, Zambia could take a cue from its neighbor Botswana which has shifted to equity holding in the diamonds-exploitation company DeBeers, while also promoting domestic processing of diamonds to move up the value chain, thus increasing government revenue, foreign exchange earnings, employment and overall spillovers in the economy. The increase in government shareholdings in mines can be paid by future revenue shares, which removes the barrier of liquidity as a constraint to transition to this mode of management.

The country must do better in leveraging its mining resources in terms of net foreign exchange earnings both from mineral exports and foreign direct investment. This is critically important for overcoming the current debt burden and preventing future debt distress. Two things are clear from the analysis in this study: mineral export booms have not generated commensurate foreign exchange earnings, and the high debt content of foreign direct investment has exacerbated the country's precarious net external position. Clearly, there is a need for clear rules on reporting of the use of foreign exchange earned from mineral exports, as well as provisions determining the mechanisms and extent of repatriation of export earnings into the country.

Another important tool for leveraging mineral endowment is the design of an effective saving and investment strategy, enabling the country to accumulate savings during commodity booms which will be used for productive investment and to cushion the effects of adverse shocks. The government should seriously consider setting up a sovereign wealth fund, learning from the experience of other resource-rich countries that have established such vehicles. It is never too late to get started.

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