

Potential Corporate Tax Avoidance in Zambia's Mining Sector?

Estimating Tax Revenue Gains
from Addressing Profit Shifting or
Revising Profit Allocation Rules:

A Case Study of Glencore and
Mopani Copper Mines

Daniel Mulé and Mukupa Nsenduluka

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Author information and acknowledgments

Daniel Mulé is a policy lead at Oxfam America focused on taxation and transparency in the oil, gas, and mining industries. Mukupa Nsenduluka is a policy officer at Tax Justice Network Africa focused on tax & natural resource governance and a former Oxfam in Zambia extractives program coordinator.

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ACRONYMS AND ABBREVIATIONS

ATAF	African Tax Administration Forum
BEPS	Base erosion and profit shifting
CbC	Country-by-country
CbCR	Country-by-country reporting
CFR	Costs and freight
CIF	Costs, insurance, and freight
CUP	Comparable uncontrolled price
DRC	Democratic Republic of the Congo
EBIT	Earnings before interest and tax
FA	Formulary apportionment
FDI	Foreign direct investment
FOB	Free on board
GDP	Gross domestic product
GIZ	Gesellschaft für Internationale Zusammenarbeit (German aid agency)
Glencore	Glencore Group, comprising Glencore PLC and its subsidiaries
ICIJ	International Consortium of Investigative Journalists
IGF	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
Incoterms	International commercial terms
IMF	International Monetary Fund
LME	London Metal Exchange
MNE	Multinational enterprise
Mopani	Mopani Copper Mines PLC
mt	Metric ton
NRGI	Natural Resource Governance Institute
OECD	Organisation for Economic Co-operation and Development
TIWB	Tax Inspectors Without Borders
TNMM	Transactional net margin method
TP	Transfer pricing
UN	United Nations
US\$	United States dollars
VAT	Value-added tax
ZCCM	Zambia Consolidated Copper Mines
ZCCM-IH	ZCCM Investments Holdings
ZMW	Zambian kwacha
ZRA	Zambia Revenue Authority

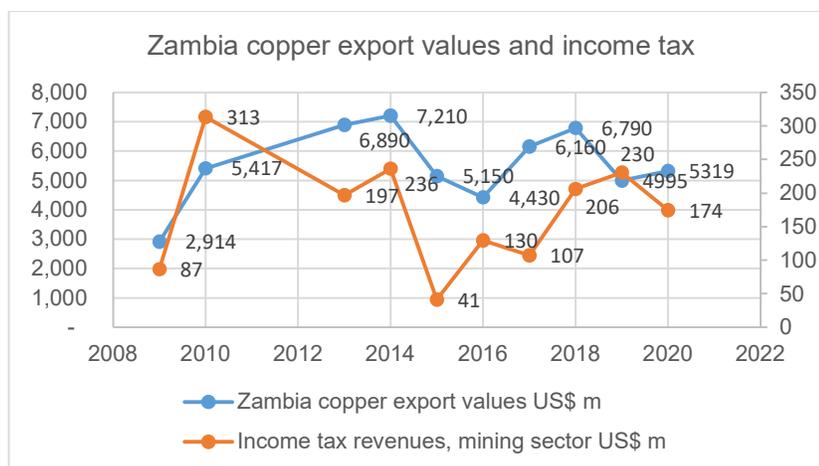
EXECUTIVE SUMMARY

Zambia is currently facing its toughest economic challenges in years. The coronavirus pandemic has put a strain on the country's healthcare system, economic activity, and the public budget, while the country struggles rising inflation and crippling public debt. Zambia's budget is in its thirteenth straight deficit, and public debt has nearly quadrupled from 20.5 percent of gross domestic product (GDP) in 2011 to 78.1 percent of GDP in 2018.¹

The mining industry, dominated by copper, is a key growth engine for the Zambian economy. In 2019 Zambia's mining exports were almost United States dollars (US\$) 7.4 billion, and the sector contributed about 10 percent of GDP, 28 percent of government revenues, and 77 percent of export value.²

Unfortunately, the Zambian government has little to show from the commodity prosperity of the last 20 years. From 2003–2014 Zambian mines benefited from copper's record price surge and historic highs in production levels and export revenues, yet Zambia's tax collections remained modest. In 2013 when copper prices were over US\$7,000/metric ton (mt), Zambia exported over US\$6 billion of copper but only collected US\$197 million of income tax from the mining sector (including other minerals).³ See Exhibit 1 for details.

Exhibit 1. Zambia income tax, mining sector (2009–2020)⁴



¹ World Bank in Zambia, "Overview," <https://www.worldbank.org/en/country/zambia/overview>.

² Zambia Extractive Industries Transparency Initiative (EITI), "Zambia Extractive Industries Transparency Initiative: Zambia EITI Report 2019, December 2020," pp. 14, 100, https://eiti.org/files/documents/zeiti_report_2019.pdf (includes source data from Bank of Zambia and Zambia National Accounts Statistics). 2019 mining contribution to GDP of Zambian kwacha (ZMW) 10.4 billion were converted at end-of-year exchange rate of 14.02 accessed from Bank of Zambia, "Average Exchange Rates," <https://www.boz.zm/average-exchange-rates.htm>. Exports based on Trading Economics export data, Trading Economics, "Zambia Exports by Category," <https://tradingeconomics.com/zambia/exports-by-category>.

³ Zambia Ministry of Finance, "Annual Economic Reports," https://www.mof.gov.zm/?page_id=6197. 2013 mining income tax revenues of Zambian kwacha (ZMW) 1.08 billion were converted at the historical 2013 exchange rate of 5.5 at end-of-year exchange rate of 14.02 accessed from Bank of Zambia, "Average Exchange Rates," <https://www.boz.zm/average-exchange-rates.htm> to approximately US\$197 million.

⁴ Zambia Ministry of Finance, "Annual Economic Reports." Data for 2011 and 2012 were unavailable. Reported amounts in ZMW converted at end-of-year exchange rates accessed from Bank of Zambia, "Average Exchange Rates," <https://www.boz.zm/average-exchange-rates.htm>. Zambia copper export values sourced from Trend Economy, "Annual International Trade Statistics by Country," trendeconomy.com for years preceding 2019.

Poverty levels now stand at 54 percent, and the country has a Gini index of 57.1, indicating high inequality levels, and ranking among the most unequal countries in the world.⁵ These challenges are only going to be exacerbated by the devastating economic and societal impacts of the COVID-19 pandemic.

The Glencore Group (Glencore) has a history of questionable tax practices since its founding days,⁶ and its operations in Zambia have been emblematic of the tax challenges facing Zambian regulators. Until March 31, 2021, Glencore operated a large copper mining project in Zambia via its subsidiary, Mopani Copper Mines PLC (Mopani). Glencore's Mopani project has been one of the top few producers of copper in Zambia for the last two decades. Yet, despite earning nearly US\$6 billion in total revenue, Mopani recorded a total of just US\$28 million of income tax expense over the recent 8-year period from 2011-2018.⁷

Estimating potential profit shifting by Mopani

This report presents a quantitative tax analysis to determine the potential level of Mopani's profit shifting (and foregone Zambian tax revenue). Determining the true level of profits is a complex and imprecise exercise, and the report therefore relies on several methods for estimating Mopani's profits, using profit allocation principles contained in both existing tax rules as well as proposed new tax rules. Accordingly, the report does not assert that there was a specific underpayment of tax. Indeed, it should be noted that the Zambian Revenue Authority (ZRA), completed a comprehensive tax audit of Mopani for the years 2012-17 in March 2021. Some adjustments were made (not uncommon for large enterprises like Mopani), and Glencore has indicated that no additional tax was required to be paid for any of these years,⁸ though this information has not been publicly verified.

This report also does not analyze the pros and cons of the various tax rules but serves an instructive real-life example of potential profit shifting, tax risks, and policy or other weaknesses impacting Zambia's copper sector.

In doing so, this report focuses on the corporate income tax risks that arise in relation to transfer pricing and related international tax issues and does not provide a specific analysis of other taxes such as mineral royalties, value-added tax (VAT), or customs duties. Exhibit 2 outlines a selection of the various government revenues that were collected from Zambia's extractives sector for the period 2008–2018, of which income taxes were only one component.

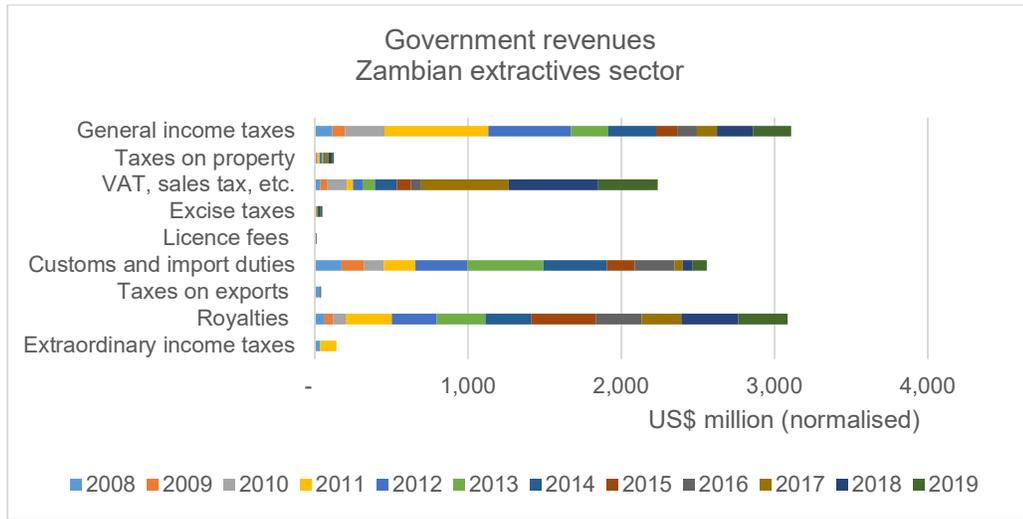
⁵ World Bank, "Gini index (World Bank estimate) – Zambia," <https://data.worldbank.org/indicator/SI.POV.GINI?locations=ZM>; World Bank, "Data Bank: World Development Indicators," <https://databank.worldbank.org/reports.aspx?source=2&Topic=11>.

⁶ For example, in 1983 founder Mark Rich was indicted in the US on several counts including tax evasion, wire fraud, racketeering, and trading with Iran during the oil embargo.

⁷ Refer to Exhibit 18.

⁸ Glencore letter to Oxfam, Response to request for comment, May 28, 2021. Glencore also claims that as of March 2021, the Zambia Revenue Authority "owed Mopani almost \$500 million in legally due VAT refunds, built up over the past decade."

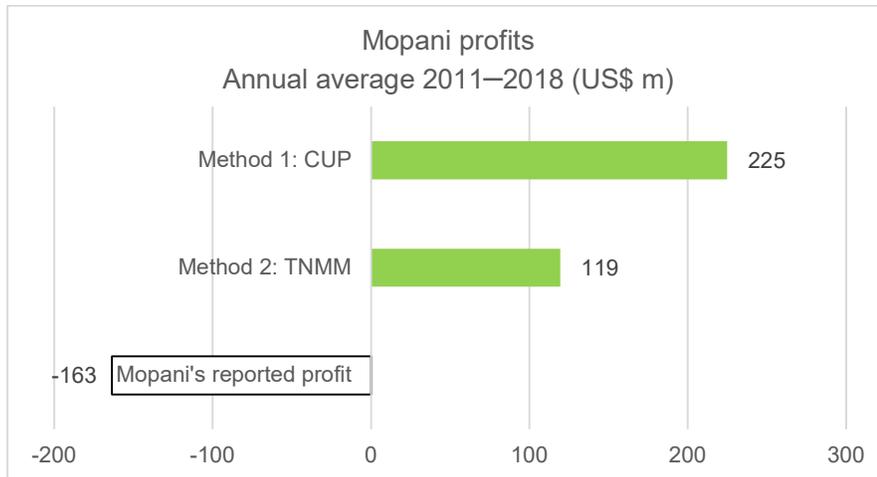
Exhibit 2. Selected government revenues, Zambia's extractives sector 2011–2018⁹



By applying four different methods, this report estimates that Mopani's profits may have been understated by a staggering US\$208 million to US\$388 million per year.

Methods 1 and 2 seek to apply the existing international tax rules to quantify Mopani's true profits via the comparable uncontrolled price (CUP) method and the transactional net margin method (TNMM). In doing so, these two methods estimate Mopani's annual average profits could have been US\$119 million to US\$225 million, compared with the reported annual average loss of \$163 million. See Exhibit 3.

Exhibit 3. Mopani profits 2011–2018, existing tax rules

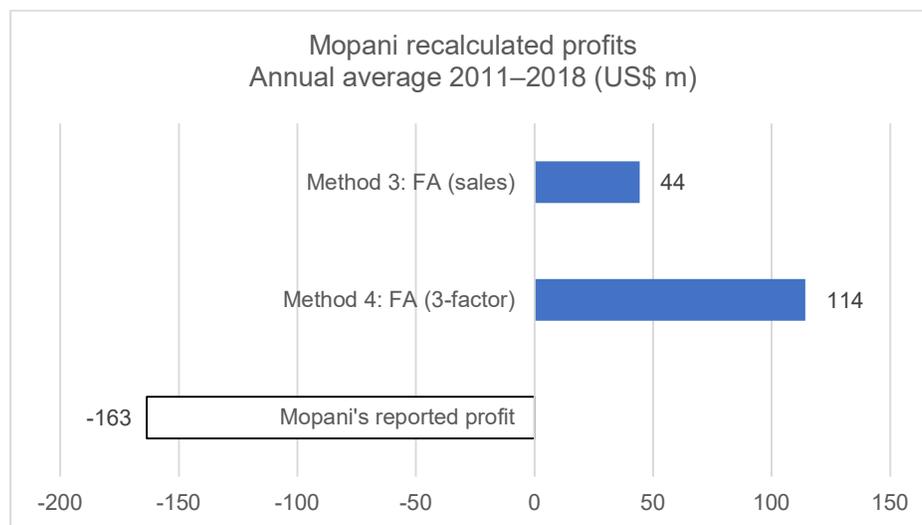


Methods 3 and 4, seek to quantify Mopani's profits under potential changes to the international tax system that might allow for formulary apportionment (FA) of corporate profits. Under these two variations on proposed formulary rules,

⁹ Selection of government revenue sources based on data from EITI, "Zambia," <https://eiti.org/zambia>.

the estimate of Mopani's average annual profits varies significantly, from US\$44 million to US\$114 million, compared with the reported annual average loss of US\$163 million. See Exhibit 4.

Exhibit 4. Mopani profits 2011–2018, proposed (FA) tax rules



Implications for Zambia's income tax base

While it is difficult to draw firm conclusions from one company, this report's analysis does suggest that alternative tax rules with respect to profit allocation (based on formulary apportionment or FA) may not be the silver bullet that many stakeholders are looking for, at least for the extractives industries. Many proponents argue that FA is not necessarily suited to the extractives,¹⁰ and this micro-analysis of Mopani supports that proposition. In light of this, the OECD's decision to exempt the extractive industries from new proposed rules that would re-allocate some profits of multinational corporations to be taxed in the jurisdictions of sales may be the right one if we value a system where tax is paid where extraction takes place.

However, regardless of the method, what is clear from the analysis is that Mopani should have, on average, been profitable throughout the period 2011–2018. This is a stark contrast to the reported average loss of US\$163 million per year. In recent years smelter shutdowns and other operational challenges have provided some legitimacy to Mopani's losses. However, the analysis suggests that from 2011–2014, when copper prices were reaching all-time highs, Mopani should have earned significantly higher profits. From 2015–2018, when operational challenges materialized, Mopani's losses should not have been so large.

If unchallenged, the accumulation of these tax losses—which can offset future taxable profits—could mean Mopani won't pay income tax in Zambia for many years to come. Yet throughout this period Mopani's parent company Glencore

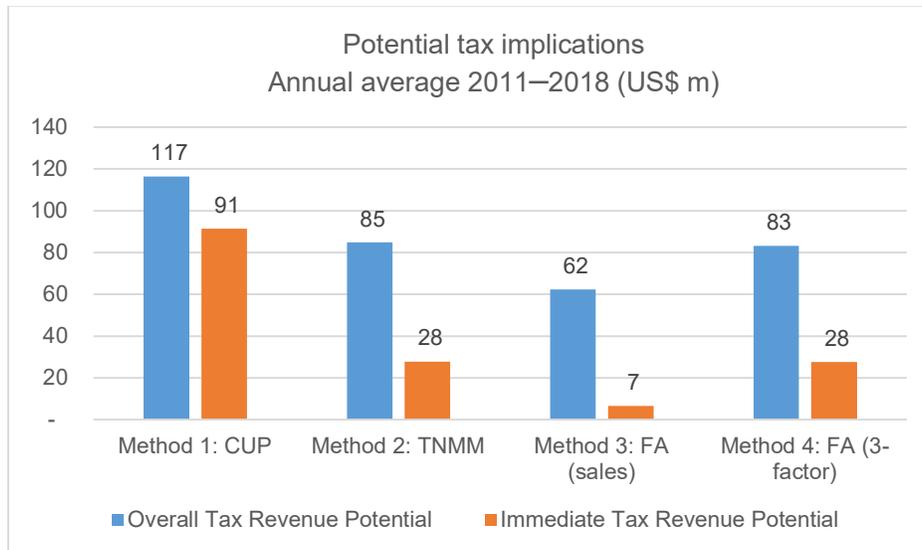
¹⁰ See for example, International Centre for Tax and Development, "Unitary Taxation in the Extractive Industry Sector," <https://www.ictd.ac/publication/unitary-taxation-in-the-extractive-industry-sector/>.

continued to pay out to shareholders, averaging US\$1.7 billion of dividends and stock buybacks per year.¹¹

The estimated profit shifting has potentially significant income tax implications, both for Mopani and for Zambia.¹² Based on our estimates, Zambia should have been collecting up to US\$91 million per year in extra in income taxes from Mopani. That is more than half of Zambia’s national water supply and sanitation budget for 2020.¹³

A summary of the potentially foregone revenue is provided in Exhibit 5 below; however, a distinction is made between tax that could be collected immediately (“immediate tax revenue potential”) and the overall tax revenue potential, some of which may not be immediately collectable but would instead offset losses.

Exhibit 5. Potential tax revenue implications



Mopani represents approximately 18 percent of Zambia’s total copper production.¹⁴ Each mining project is different, and there are significant variances in corporate and transactional structures in the Zambian mining sector. However, if all mining companies in the copper sector were underpaying tax at the rate that Mopani is, Zambia could be suffering a mining tax gap of up to US\$560 million per year. This amount could support more than 80% of Zambia’s national health budget for 2020.¹⁵

¹¹ Glencore, “Annual Reports 2011–2018,” <https://www.glencore.com/investors/reports-results/report-archive>.
¹² In determining the tax implications, we have distinguished between two potential tax consequences. As tax losses do not result in a refund of tax, to the extent these methods reduce an existing tax loss, we have assumed this would not alter the actual tax collectible by Zambia (or payable by Mopani). They would, however, increase Mopani’s tax expense and reduce the amount of tax losses that Mopani could carry forward to apply to future profits. To the extent these methods increase or create a profit for Mopani, we have assumed that this would result in additional tax collections for Zambia (and additional payments for Mopani). Therefore, the tax implications are split into the overall revenue potential (both immediately collectable and non-collectable) and the immediate revenue potential (immediate collectable amounts only).
¹³ Policy Monitoring and Research Centre, 2020 Zambia National Budget Infographic, Oct. 2, 2019, <https://pmrczambia.com/2020-zambia-national-budget-infographic/>.
¹⁴ Based on total production (own sources and other sources) for the period 2013–2018. Total copper production was sourced from Zambia Ministry of Finance Annual Economic Reports. Information for 2011 and 2012 was unavailable.
¹⁵ Policy Monitoring and Research Centre, 2020 Zambia National Budget Infographic, Oct. 2, 2019, <https://pmrczambia.com/2020-zambia-national-budget-infographic/>.

Policy implications

Although many positive steps have been taken by Zambia in recent years,¹⁶ policy and other shortcomings in the international tax framework as well as in Zambia's tax regime, seem to have provided the environment for companies to minimize taxes during the period of commodity prosperity. The effects are being felt even more acutely now. The government faces trade-offs between supporting Zambia through a global pandemic, maintaining public services such as health and education, and managing the fiscal deficit to address underlying problems in the economy.

The international tax rules, which are complex, resource intensive, and difficult to administer, have compromised Zambia's ability to protect its tax base for many years. However, these rules are at a critical juncture. For the first time, elements of formulary apportionment are being considered by the Organisation for Economic Co-operation and Development (OECD). New profit allocation rules (Pillar One) have been formulated, and a global minimum effective tax is being designed (Pillar Two).¹⁷ There are many advantages to formulary apportionment, which would result in rules that are simpler, easier to administer (particularly for under-resourced tax administrations), while better aligning tax payments with where value is created and reducing opportunities for abuse. However, our analysis suggests there may be inherent trade-offs between such rules and the existing rules when it comes to the extractive industries. The current rules may afford greater revenue potential to countries where extraction of resources takes place, which is where value is created and where tax should be paid; however, this revenue may be difficult for many countries, such as Zambia, to successfully capture. Formulary apportionment offers simplicity and easier administrability and it may for many sectors result in a better alignment of where value is created and taxes paid. However, in the specific and somewhat distinct case of extractive industries, it may risk taking revenue away from where the resources are extracted, particularly if the FA method applied relies solely or predominantly on a sales factor, similar to the OECD's Pillar One proposal. Low- and middle-income countries dependent on extraction of natural resources like Zambia may instead be better off prioritizing Pillar Two, which could significantly limit profit shifting out of source countries and mitigate tax competition and the global race to the bottom.

Zambia's government estimates that it has been losing as much as US\$2 billion annually as a result of tax avoidance and profit shifting by

¹⁶ This includes establishing an effective international tax unit in the Zambia Revenue Authority (ZRA), becoming one of the first countries to implement a commodity pricing rule to address underpricing of mineral exports, renegotiating the Switzerland tax treaty, cancelling the Mauritius tax treaty, and putting a stop to development agreements with mining companies.

¹⁷ For a discussion of Oxfam's views on these proposals, including submissions to the Organisation for Economic Co-operation and Development (OECD), see Oxfam, "OECD Corporate Tax Proposals 'Very Disappointing' for Developing Countries," <https://www.oxfam.org/en/press-releases/oecd-corporate-tax-proposals-very-disappointing-developing-countries>; Oxfam, "Oxfam Submission for the OECD Public Consultation on the Unified Approach," https://www.dropbox.com/s/3pb98p1o3qnz3me/oecd-public-comments-secretariat-proposal-unified-approach-november-2019.zip?dl=0&file_subpath=%2FPublished+15+November+2019%2FOxfam.pdf; and Oxfam, "Response to the OECD Public Consultation on the Global Anti-base Erosion Proposal – Pillar Two," https://www.dropbox.com/s/bbykwy39gosgbf/oecd-public-comments-globe-proposal-pillar-two-december-2019.zip?dl=0&file_subpath=%2FPublished+3+December+2019%2FOxfam.pdf.

multinationals.¹⁸ The boom in copper prices that has taken place so far in 2021, raises the risk that Zambia will again lose out on substantial revenues.¹⁹

Immediate action should be taken by Zambia to ensure the mistakes of the past are not repeated. Mining policy and international tax policy should continue to be strengthened, tax administration capacity, including mineral testing capabilities, should be enhanced, and Zambia should continue to reflect on the efficacy of certain tax treaties and tax incentives. While the road ahead for the copper industry is unclear, Zambia needs to ensure that, as the nation's mineral wealth is exploited, it at least has the public funds to show for it.

¹⁸ *Financial Times*, "Zambia's Tax Losses," April 30, 2013, <https://www.ft.com/content/93b47d9a-b196-11e2-b324-00144feabdc0>.

¹⁹ As of May 2021, copper prices have set an all-time high once again, surpassing the peaks in 2011 during the boom that catalyzed huge investments, including in places like DRC, Zambia, and Peru, with LME prices of over \$10,000/ton. See e.g., Bloomberg News, "Copper Jumps to Record as Growth Bets Supercharge Communities," Bloomberg News, May 7, 2021, <https://www.bnnbloomberg.ca/copper-jumps-to-record-as-growth-bets-supercharge-commodities-1.1600490>.

INTRODUCTION

Extractive industries present significant economic opportunities for many resource-rich, low-income countries. For example, total rents from extractive industries in low-income countries are estimated to be worth around five times the total value of global aid flows.²⁰ However, translating these resources into government revenues has been problematic as tax base erosion and profit shifting²¹ by multinational enterprises (MNEs), amongst other challenges, have undermined such opportunities.

Extractive industries are dominated by large MNEs. The sector accounts for 9 of the top 20 companies in Fortune's Global 500.²² MNEs are often vertically integrated and rely on various actors within the group to complete the operations associated with any particular project. This typically results in a complex web of intra-group transactions amongst the MNE group members. In addition, support services such as technical, engineering, finance, and management services are often provided by centralized service providers or hubs within the group. The scale of intra-group transactions, in combination with complex corporate structures, makes the extractives sector particularly vulnerable to profit shifting or transfer mispricing through, for example, underpricing of mineral exports, overcharging for support services, or excessive interest deductions.

In low-income countries tax administrations often lack the experience and resources to effectively tackle complex tax avoidance techniques. Recent tax scandals such as the Panama papers, Lux leaks, and Swiss leaks demonstrate just how complex and tangled these techniques can be. According to the International Monetary Fund (IMF), low-income countries lose more than US\$200 billion a year because of tax avoidance.²³ Low-income countries seem to be hit hardest because of their greater reliance on corporate income tax as a share of government revenues.

Box 1. Tax havens and human rights²⁴

Taxation is one of the most important policy instruments governments can deploy to generate the resources needed to realize the full range of human rights. However, many countries struggle to collect sufficient revenue to fund public services essential for the realization of basic rights to health, education, housing, access to justice, and an adequate standard of living. The policies of tax havens, which often promulgate tax secrecy and tax avoidance, have spillover effects that exacerbate the fiscal challenges faced by many countries.

The role of Switzerland in Zambia's copper industry is substantial, and not just for the Swiss-headquartered Glencore Group. Over 40 percent of all Zambia's exports

²⁰ Oxfam, "The Weak Link: The Role of Local Institutions in Accountable Natural Resource Management in Peru, Senegal, Ghana and Tanzania," <https://www.oxfamamerica.org/explore/research-publications/the-weak-link/>.

²¹ Referred to as "base erosion and profit shifting" (BEPS), which primarily relates to multinationals shifting profits or otherwise manipulating international tax rules to minimize their tax burden.

²² *Fortune*, "Global 500," <https://fortune.com/global500/2019/search/?sector=Energy>.

²³ International Monetary Fund (IMF), "Base Erosion, Profit Shifting and Developing Countries" (Working Paper, IMF, Washington DC, 2015), <https://www.imf.org/external/pubs/ft/wp/2015/wp15118.pdf>.

²⁴ For a detailed discussion of these issues in the context of women's rights, see Centre for Economic and Social Rights, "Switzerland Factsheet 2016," <https://www.cesr.org/switzerland-factsheet>.

are with Switzerland.²⁵ Financial secrecy and corporate reporting standards in Switzerland hamper the ability of countries like Zambia to detect possible tax abuses by Glencore and its affiliates.²⁶ This has potentially significant impacts for the realization of human rights in Zambia. Corporate profits, which may currently be funneled through Switzerland, could otherwise be taxable in Zambia and contributing to key social expenditures such as healthcare, education, and social support.

Against the backdrop of reports of widespread illicit financial flows in the extractives sector,²⁷ this research undertakes a micro-analysis of one company in Zambia's copper sector: Mopani. This research seeks to shine some light on the potential tax avoidance techniques, and associated lost tax revenue, of one of Zambia's largest mining companies and one of the world's largest MNE groups, Glencore. The results are likely to be emblematic of broader challenges in international taxation in Zambia and elsewhere.

The research will inform Oxfam's efforts to improve fiscal governance in the Zambian mining sector, including efforts to implement a mineral revenue-sharing mechanism in Zambia. One of the Zambian government's arguments against such revenue sharing has been that Zambia cannot afford to share revenues; if increased government revenues can be found by combatting tax avoidance, the argument against mineral revenue sharing may be undermined. The research also compliments other extractives projects, including Oxfam's "Copper for Development" initiative.²⁸

The study comes at a crucial juncture in international taxation. Historically, taxation of MNEs across jurisdictions was based on the arm's length principle. The threshold for taxation ("nexus") was based on physical presence; that is, a MNE needed to be physically present in a country to be taxable. However, the current international tax rules embodied by the arm's length principle and nexus rules have been widely criticized as being too complex, open to manipulation, and administratively impractical, especially for low-capacity tax administrations. Perceived deficiencies in the existing rules were the basis for much of the international momentum that led to the OECD base erosion and profit shifting (BEPS) project, and subsequently the OECD's ongoing work on the tax challenges arising from the digitalization of the economy (BEPS 2.0).

²⁵ United Nations (UN), "Comtrade Database, 2019," <https://tradingeconomics.com/zambia/exports-by-country>.

²⁶ However, in recent years, Switzerland has taken many steps forward on transparency, including automatic exchange of information, country-by-country reporting (CbCR), and other measures. See for example, Irene Musselli and Elisabeth Bürgi Bonanomi, "Curbing Illicit Financial Flows in Commodity Trading: Tax Transparency" (CDE Working Paper 4, Centre for Development and Environment (CDE), Bern, Switzerland, 2018), https://boris.unibe.ch/125884/1/online_04_CDE_Working_Paper_Musselli_Buergi.pdf.

²⁷ See for example, United Nations High Level Panel on Illicit Financial Flows of the Economic Commission for Africa, "Illicit Financial Flows: Why Africa Needs to Track it, Stop it and Get it!" <https://www.uneca.org/file/illicitfinancialflowswhyafricaneedspdf>, Figure 2. The United Nations Economic Commission for Africa estimates that over the period from 2000–2009, 56 percent of illicit financial flows from Africa came from the oil, precious metals, and the minerals, ores, iron, steel, and copper sectors.

²⁸ Oxfam, "Copper for Development Report," April 2021, <https://www.oxfamamerica.org/explore/research-publications/copper-for-development-report/>.

Box 2. The arm's length principle and formulary apportionment

The current international tax framework allocates profits between MNE group members by prescribing that intra-group transactions be consistent with the arm's length principle. Broadly, this means that transactions between members of an MNE group must be at market values, and therefore the location of profits should not be artificially manipulated by under- or overpricing intra-group transactions.

The level of profits reported by each subsidiary can often be significantly impacted by this complex web of intra-group transactions, which may include royalties, interest on loans, management and service fees, commissions, and transactions for the supply of goods. Applying the arm's length principle requires careful consideration of each intra-group transaction.

Formulary apportionment has long been advocated as an alternative to the arm's length principle as a more objective, simpler, and fairer means of allocating profits amongst subsidiaries of MNEs. Formulary apportionment allocates the total group profits amongst group members based on prescribed allocation factors (such as sales and assets). In general, proponents have argued for a formula that correlates to true economic substance and scale and one that represents key factors of value creation, including supply factors (such as labor and assets) and demand factors (such as sales).

Whereas formulary apportionment was largely dismissed by the OECD in previous years, it is now gaining greater traction in international fora. It is actively being considered as an element of the current OECD BEPS 2.0 proposals and has been discussed by other international organizations, including the United Nations (UN) and IMF.²⁹

This research includes an application of formulary apportionment principles to estimate the revenue potential if such rules were in place. It is, however, recognized that some proponents of formulary apportionment suggest that is not suitable to extractives industries. This research tests that proposition, at least at a micro level, by comparing the profits of Mopani under existing principles and formulary apportionment principles.

In 2021, the OECD's Inclusive Framework³⁰ seeks to achieve a consensus solution to the tax challenges arising from the digitalization of the economy. The project has the potential to rewrite the international tax rules, which many believe are no longer fit for purpose given the nature of global commerce today.

While initially described as a response to challenges precipitated by the digitalization of the economy, the proposals have the potential to cover many sectors and business models, irrespective of the level of digitalization. The OECD's "Pillar One" proposal for new profit allocation rules would rely solely on a sales factor which may be suitable for many sectors of the economy. For the extractive industries it is however less clear how re-aligning tax payments

²⁹ See for example, IMF, "Corporate Taxation in the Digital Economy," <https://www.imf.org/~media/Files/Publications/PP/2019/PPEA2019007.ashx>.

³⁰ The OECD Inclusive Framework was established in 2016 so that interested countries and jurisdictions, including developing economies, could participate in the development of standards on BEPS-related issues, while reviewing and monitoring the implementation of the OECD/G20 BEPS Project. There are now 140 members of the Inclusive Framework, compared with 37 OECD members who have historically driven OECD tax policies. However, there are many other countries not included, and a strong push remains to redesign these rules in a forum that is more inclusive, for example the UN. See for example, Oxfam, "OECD Plans to Open Up Tax Reform to Developing Countries Welcome but More is Needed," <https://www.oxfam.org/en/press-releases/oecd-plans-open-tax-reform-developing-countries-welcome-more-needed>.

to where the sale of the resources takes place would create a better alignment of where value is created and where taxes are paid. Fortunately, the current Pillar One proposal would exempt the extractive industries. The OECD negotiations have nonetheless opened up new discussions on alternatives to the current system international rules for allocation of taxing rights, which could potentially impact the extractive industries as well. Accordingly, it is important that resource-rich countries and particularly those whose economies and treasuries are dependent on resource extraction consider the impacts that potential alternative profit allocation methods might have on potential tax revenues from the extractive sectors.

SCOPE AND PURPOSE

The purpose of this research is primarily to inform Oxfam's work to address profit shifting and irresponsible corporate tax practices. Specifically, it will contribute to Oxfam's ongoing work to improve fiscal governance in the mining sector.

This case study will assess the scale of potential tax avoidance by international mining company Glencore in relation to the emblematic mining project Mopani in Zambia. It seeks to understand the potential tax revenue risks in Zambia and provide policy and related recommendations for Zambia, Glencore, and Mopani. In doing so, this study aims to elevate the issues of mining sector tax avoidance in the public debate in Zambia and empower participants in that debate with both an improved understanding of the issue and compelling evidence of the potential scale of mining sector tax avoidance.

This research is conducted in the context of growing global concerns around the risks of corporate tax avoidance via base erosion and profit shifting. This research will contribute to the debate on global formulary apportionment by considering, at a micro level, how such a rule could impact the taxable profits of Mopani.

Finally, this research will illustrate in real terms why public country-by-country financial and tax reporting is so important to both understand corporate tax behavior and craft policy responses fit for purpose.

Specifically, this research considers the following three questions.

1. What possible risks for reduced tax collection by the government of Zambia may exist as a result of Glencore's tax approach and potential profit shifting from the Mopani copper mine?
2. Quantitatively, how much profit may Glencore potentially have shifted out of Zambia over the period in question (2011–2018)?
3. Does the analysis suggest any specific policy measures that should be taken by Zambia to address corporate tax avoidance by Glencore and other mining companies, or by Glencore to improve its tax practices?

The analysis covers the income years 2011–2018. The analysis is based on publicly available information obtained from Glencore (e.g., annual reports, financial statements, production reports, tax and government payments), then minority state-owned shareholder Zambia Consolidated Copper Mines Investments Holding PLC (ZCCM-IH), the Zambian government, the Extractive Industries Transparency Initiative (EITI), and several other sources.

Following the research for this paper but prior to publication, Glencore sold the entirety of its stake in the Mopani project to ZCCM-IH in exchange for

US\$1 and debt of US \$1.5 billion to Glencore held by Mopani.³¹ Glencore announced this transaction in January 2021 and finalized it in March 2021, and it includes specific mechanisms for both repayment of the debt to Glencore and a continued offtake agreement for Glencore during the duration of repayment.³² The new ownership of Mopani and the stipulations of the contracts underlying the transaction will inevitably have an impact on both Mopani's tax practices and on the taxation of the Mopani project, but a full analysis of the potential impacts of this change is beyond the scope of the present research.

Nonetheless, the present case study, including its quantitative estimations of potential tax collection gaps and tax allocation alternatives and the recommendations that follow, shines an important light on potential tax avoidance. This research can thus inform potential improvements to Zambia's approach to tax collection, Glencore's approach to its tax practice, and the international debate around the allocation of taxing rights.

³¹ Glencore, "Signed contract to sell underlying stake of 73% in Mopani in \$1.5b transaction," Jan. 19, 2021, <https://www.glencore.com/media-and-insights/news/signed-contract-to-sell-underlying-stake-of-73-in-mopani-in-1.5b-transaction>.

³² Glencore, "Signed contract to sell underlying stake of 73% in Mopani in \$1.5b transaction," Jan. 19, 2021, <https://www.glencore.com/media-and-insights/news/signed-contract-to-sell-underlying-stake-of-73-in-mopani-in-1.5b-transaction>. Glencore, "Completion of sale of underlying 73% stake in Mopani," Mar. 31, 2021, <https://www.glencore.com/media-and-insights/news/completion-of-sale-of-underlying-73-stake-in-mopani>.

1. THE MINING SECTOR IN ZAMBIA

Mining has been central to the Zambian economy for almost a century. In the early twentieth century, one of the world's largest sources of copper ore was found on the border of Zambia and the Democratic Republic of Congo. This area became known as the Copperbelt. See Exhibit 6.

Exhibit 6. Map of the Copperbelt³³



In 1928 the first commercial mine was opened at Roan Antelope. For 40 years, the mines in this area of Zambia were owned and managed by two private companies: the Roan Selection Trust and the Anglo-American Corporation.

Zambia, having been first colonized by Cecil Rhodes, was under British colonial rule from the early twentieth century up until 1964. During this time, the Copperbelt in Zambia (then Northern Rhodesia) was seen as a source of mineral wealth to support the development and growth of Southern Rhodesia (now Zimbabwe). In 1964 Zambia won its political independence and was governed by the United National Independence Party under the leadership of President Kenneth Kaunda.

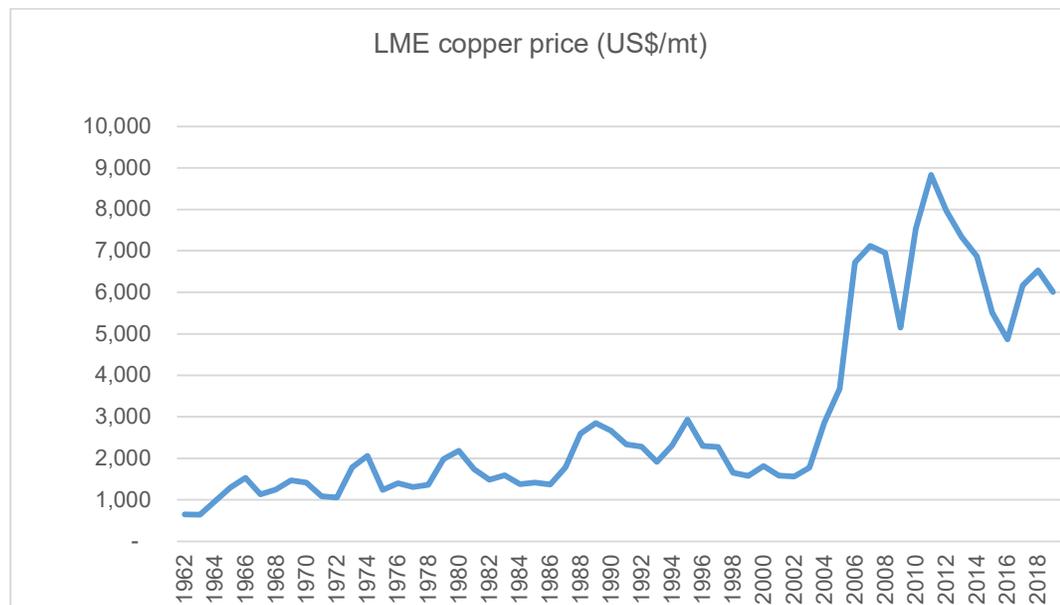
In 1968 President Kaunda raised concerns that the Roan Selection Trust and the Anglo-American Corporation were no longer investing sufficiently in the country. He proposed a new royalty system. The companies claimed that this would only dissuade further investment. President Kaunda reacted by nationalizing the mines, and in 1969 both companies were required to hand over 51 percent of all shares in their existing mines to two nationalized

³³ Constantin J. von der Heyden and Mark G. New, "The Role of a Dambo in the Hydrology of a Catchment and the River Network Downstream," *Hydrology and Earth System Sciences* 7, no. 3 (2003): 339–357.

companies. These companies were later amalgamated to form the state-owned Zambia Consolidated Copper Mines (ZCCM).

Under the nationalized system, copper production was strong in the early years. In 1973 Zambia's copper production reached 750,000 mt.³⁴ However, following the global oil crisis in 1974, the price of copper collapsed. See Exhibit 7. On the back of depleted copper revenue, the government was forced to borrow to continue to deliver public services. A debt crisis followed in 1979 when interest rates spiked following the second oil crisis. From 1974 to 1994 Zambia's GDP collapsed by 50 percent, stifled by low commodity prices and government debt.³⁵ It left Zambia with the 25th-lowest GDP per capita in the world.³⁶ By 1998 copper production had reduced to 255,000 mt, just over a third of the 1974 levels.³⁷

Exhibit 7. Copper prices, US\$ per metric ton, 1962–2019³⁸



Source: World Bank, Commodity Markets: 'Pink Sheet' Data

In the late 1990s, the Zambian government privatized the copper industry. The state-owned holding company Zambia Consolidated Copper Mines Investments Holding PLC (ZCCM-IH) retained a small interest in many of the privatized entities.

As commodity prices rebounded copper production grew steadily and the mining industry began to attract foreign investment. The industry grew at a rate of 8 percent from 2000 to 2008, making copper the second-fastest-growing industry in Zambia.³⁹ Foreign direct investment grew rapidly from

³⁴ See e.g., Alastair Fraser and John Lungu, "The Historical Role of Copper Mining in the Zambian Economy and Society," p. 2, http://www.sarpn.org/documents/d0002403/3-Zambia_copper-mines_Lungu_Fraser.pdf.

³⁵ Alistair Fraser and Miles Larmer, eds., *Zambia Mining and Neoliberalism: Boom and Bust on the Globalized Copperbelt* (New York: Palgrave Macmillan US, 2010).

³⁶ *Ibid.*

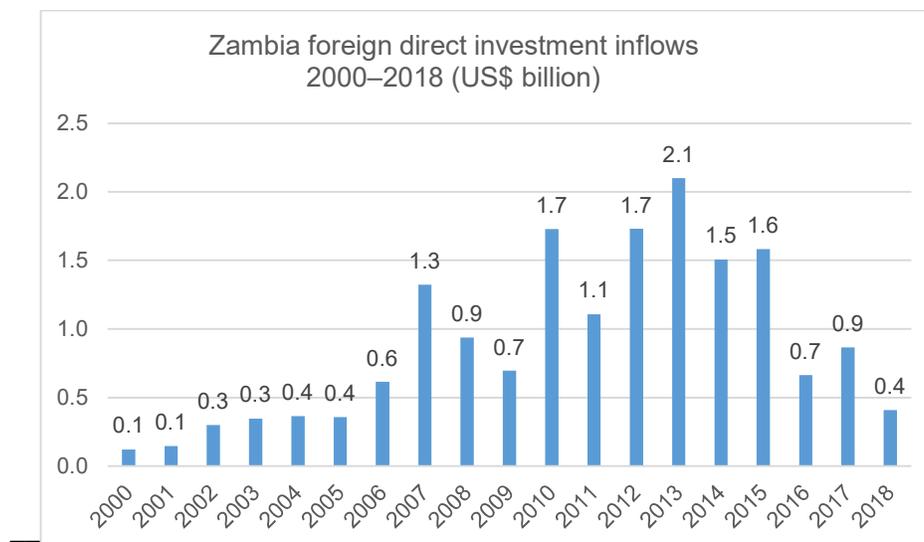
³⁷ UK Aid and World Bank, "What Would It Take for Zambia's Copper Mining to Reach Its Potential?" World Bank Report No. 62378-ZM, <https://openknowledge.worldbank.org/bitstream/handle/10986/2772/623780ESW0Gray0e0only0900BOX361532B.pdf?sequence=1>.

³⁸ World Bank, "Commodity Markets: 'Pink Sheet' Data," <https://www.worldbank.org/en/research/commodity-markets>.

³⁹ UK Aid and World Bank, "What Would It Take."

2000, reaching a peak of over US\$2 billion in 2013. However, falling copper prices saw investment flows reduce from 2013 to 2018, as shown in Exhibit 8.

Exhibit 8. Foreign direct investment in Zambia 2000–2018 (US\$ billion)⁴⁰



Source: World Bank DataBank

By 2013, Zambia’s copper production had grown to approximately 770,000 mt, and copper exports grew to US\$7 billion as global copper prices were just past their peak.⁴¹

The industry today

Today Zambia’s copper production ranks eighth in the world, reaching over 790,000 mt in 2019.⁴² Zambia is the second-largest producer of copper in Africa, behind the Democratic Republic of Congo.

Copper mining remains central to the Zambian economy. In 2018 copper exports totaled US\$6.8 billion,⁴³ more than a quarter of Zambia’s US\$26.7 billion GDP.⁴⁴ Copper represented 75 percent of Zambia’s exports in 2018. Zambia’s top export destinations were Switzerland (US\$3.81 billion), China (US\$1.31 billion), the Democratic Republic of Congo (US\$863 million), Singapore (US\$700 million), and South Africa (US\$438 million).⁴⁵ Today the Zambian mining industry directly employs approximately 50,000 people.⁴⁶

The industry is dominated by a handful of foreign-owned mining companies. Exhibit 9 provides details of the three largest companies, which represent approximately 64 percent of the industry’s copper production.

⁴⁰ World Bank, “Foreign direct investment, net inflows (BoP, current US\$) – Zambia.”

<https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?end=2018&locations=ZM&start=2000&view=chart>.

⁴¹ EITI, “Presentation on Mining Trends in Zambia,” <http://pubdocs.worldbank.org/en/437001479932990800/Siforiano-Banda-MINING-TRENDS-IN-ZAMBIA-2008-2014-final.pdf>.

⁴² US Geological Survey, “Mineral Commodity Summaries 2020,” <https://pubs.usgs.gov/periodicals/mcs2020/mcs2020.pdf>.

⁴³ Trading Economics export data.

⁴⁴ World Bank, “GDP (current US\$) - Zambia,”

<https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2018&locations=ZM&start=1960&view=chart>.

⁴⁵ Trading Economics export data.

⁴⁶ Includes contractors and employees. 2016 data obtained from EITI, “Presentation on Mining Trends in Zambia.”

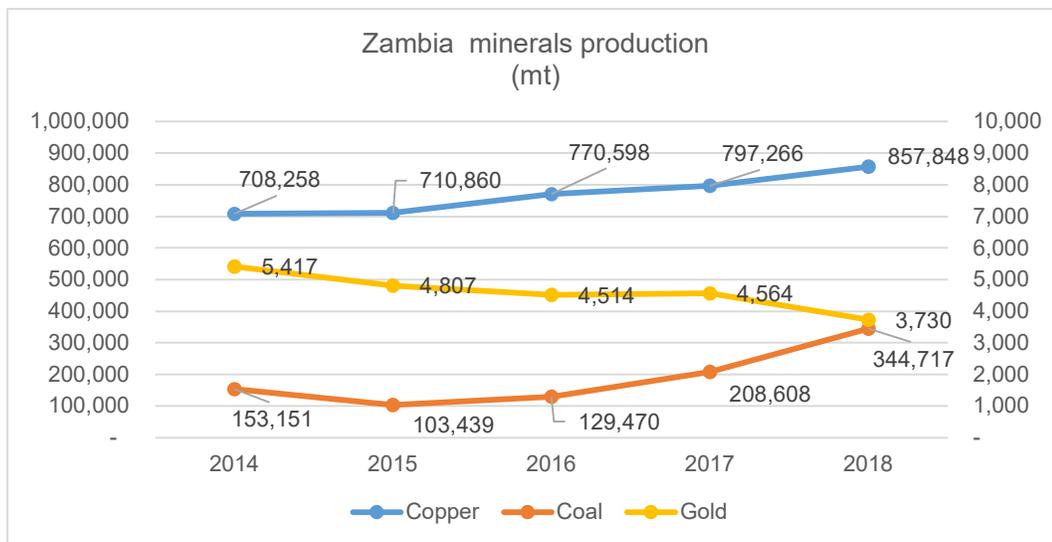
Exhibit 9. Zambia's largest copper mining companies

Entity	2018 production (mt) ⁴⁷	Majority owner	Major mine sites
Kansanshi Mines PLC	251,522	First Quantum Minerals (Canada)	Kansanshi
Konkola Copper Mines PLC	177,035	Vedanta Resources (UK)	Konkola, Nchanga
Mopani Copper Mines PLC	119,490	Glencore (Switzerland)	Nkana, Mufulira

Other mining in Zambia

The Zambia mining industry includes minerals other than copper, though copper has by far the highest production levels. Other minerals include cobalt, gold, coal, iron, manganese, gemstones, and silver. Exhibit 10 shows Zambia's major mineral production for the years 2014–2018.

Exhibit 10. Zambia major minerals production 2014–2018⁴⁸



Source: Zambia Ministry of Finance

⁴⁷ ZCCM-IH, "Annual Report 2019," <https://zccm-ih.financifi.com/download/annual-report-2019/>.

⁴⁸ Zambia Ministry of Finance, "Annual Economic Reports."

2. THE MINING FISCAL REGIME IN ZAMBIA

The mining fiscal regime has been a central political issue in Zambia ever since the industry was privatized in the early 2000s. The regime has undergone significant change on at least nine occasions in the last 20 years.⁴⁹

Since the early 2000s the regime has been largely embodied in the development agreements struck with the mining companies. These development agreements set out special tax rates, royalty rates, and other tax consequences for the new private owners—generally a tax rate of 25 percent and royalty rate of 0.6 percent. However, the enactment of the Mines and Minerals Development Act in 2008 broadly overturned these development agreements and prevented the Minister of Mines and Mineral Development and Minister of Finance from entering new agreements.

In 2008 the income tax rate was raised from 25 percent to 30 percent, royalties were raised from 0.6 percent to 3 percent, and a variable profits tax and windfall tax was introduced. In 2012, the royalty rate was further increased to 6 percent.

In October 2014, facing fiscal pressure from budget deficits and increasing debt, the Minister of Finance announced that mineral royalties on the value of base metals produced would increase from 6 percent to 20 percent on open cast mining and to 8 percent on underground mining. The corporate income tax rate on mining operations was to be abolished, as was the windfall tax and variable profits tax. This decision was made against the backdrop of low tax revenues from the mining sector and suspicions of significant profit shifting by multinational mining companies.⁵⁰ By increasing the royalty rate and abolishing the income taxes, the government effectively sought to change the mining tax regime from a mixed regime (taxing profit and collecting royalties on mineral sales revenues) to a royalty-only regime. The new royalty regime aimed to prevent companies from using tax-planning techniques to avoid the profits-based corporate income tax.

These changes were met with resistance from the mining sector and other stakeholders. The IMF suggested the changes might decrease tax revenues while at the same time discouraging investment.⁵¹ The sector was already hit by falling copper prices and rising energy costs. When the new Mining Act was passed in Parliament in December 2014, the Canadian-owned Barrick Gold Corporation, owner of the Lumwana mine, issued a statement that the

⁴⁹ Natural Resource Governance Institute (NRGI), "Ninth Time Lucky: Is Zambia's Mining Tax the Best Approach to an Uncertain Future?" Briefing October 2017, <https://resourcegovernance.org/sites/default/files/documents/ninth-time-lucky.pdf>.

⁵⁰ See for example, Zambia Daily Mail "ONLY two mining companies pay corporate taxes," Lusaka Voice, October 15, 2014. <http://www.lusakavoice.com/2014/10/15/only-two-mining-companies-pay-corporate-taxes/>.

⁵¹ IMF, "Zambia Selected Issues" (IMF Country Report No. 15, IMF, Washington DC, 2015), p. 153.

company would suspend its operations.⁵² Many others threatened closures and redundancies.

With the weight of the industry against them, the changes were abandoned, and a mixed regime that included corporate income tax and lower royalty rates was reinstated in the wake of the 2015 elections.

Throughout 2015 many more companies threatened to abandon or downsize their operations and did so, citing depressed copper prices. In 2016, under mounting political and fiscal pressure, the government flagged its intentions to re-examine the royalty regime. A more sustainable regime was envisaged that would better adapt to the rise and fall of copper prices. The proposal introduced a variable royalty rate of between 4 percent and 6 percent, based on copper prices. The variable profits tax was to be abolished. The Minister of Information stated that “This review in the taxation regime is deemed necessary to sustain continuous operation of existing mining companies and avert the continuation of suspension of mining operations and job losses.”⁵³ The proposal was enacted in April 2016.

After three years of stability, Zambia’s Finance Minister announced further changes to the regime in the 2019 budget speech. With national debt at unsustainable levels, an increase in the variable royalty rate was proposed, increasing the rate band from 4 percent–6 percent to 5.5 percent–7.5 percent. In addition, a new royalty tier at 10 percent would be introduced when the price of copper exceeds US\$7,500 per mt.⁵⁴ The royalty was also to become non-deductible for the purposes of computing taxable income.⁵⁵ The proposal was enacted, effective January 1, 2019, with some minor changes.⁵⁶

A summary of Zambia’s mining fiscal regimes is shown in Exhibit 11 below.

⁵² GlobeNewswire, “Barrick to Suspend Operations at Lumwana Following Passage of New Mining Royalty,” December 18, 2014, <https://www.globenewswire.com/news-release/2014/12/18/1388414/0/en/Barrick-to-Suspend-Operations-at-Lumwana-Following-Passage-of-New-Mining-Royalty.html>.

⁵³ Bloomberg, “Zambia Plans Price-Based Royalty for Ailing Copper Mines.” February 17, 2016, <http://www.bloomberg.com/news/articles/2016-02-17/zambian-cabinet-approves-lower-variable-copper-royalties>.

⁵⁴ See e.g., Reuters, “UPDATE 3-Zambia Hikes Mining Taxes in 2019 Budget to Rein in Debt,” September 28, 2018, <https://www.reuters.com/article/zambia-budget/update-3-zambia-hikes-mining-taxes-in-2019-budget-to-rein-in-debt-idUSL8N1WE5RK>.

⁵⁵ See e.g., PwC, “What Next? Zambia Budget 2019,” <https://www.pwc.com/zm/en/assets/pdf/zambia-budget-2019.pdf>.

⁵⁶ At a copper price of US\$7,500 per mt, the royalty rate was to be 8.5 percent, and the 10 percent rate was only triggered once the price reached US\$9,000 per mt. The corporate income tax rate for entities that add value to copper cathodes was reduced to 15 percent.

Exhibit 11. Zambian mining tax regime summary 2000–2019⁵⁷

	Pre-2000	2000	2008	2009	2012	2015 (proposed)	2015 (enacted)	2016	2019
Royalty rate (copper)	-	0.6%	3%	3%	6%	20% (open pit); 8% (underground)	9% (open pit), 6% underground	4–6%	5.5–10%
Corporate income tax rate	45%	25%	30%	30%	30%	-	30%	30%	30% ⁵⁸
Windfall tax	-	-	25–75%	-	-	-	-	-	-
Variable profits tax			Yes	Yes	Yes				
Capital deductions	100%	100%	25%	100%	100%	25%	25%	25%	25%
Loss carry forwards	Yes	Yes	Yes	Yes	Yes	Yes	Yes, with limitations	Yes, with limitations	Yes, with limitations
State ownership	100%	10–20%	10–20%	10–20%	10–20%	10–20%	10–20%	10–20%	10–20%

Corporate and income taxes

Zambian resident companies are generally subject to income tax at a rate of 35 percent on all income; however, the rate varies by sector.⁵⁹ Companies operating in the mining industry are subject to Zambia’s separate mining tax provisions. These companies are generally subject to corporate income tax at 30 percent⁶⁰ in addition to a 5.5 percent–10 percent mineral royalty for copper (depending on the London Metal Exchange (LME) copper price). The mineral royalty for other metals ranges from 5–6 percent generally, and 8 percent for cobalt.

Mining companies benefit from many other tax concessions afforded to the industry, particularly on investment activities. These include.⁶¹

- Accelerated depreciation deductions on capital expenditure (over four years) rather than over the life of the asset;
- rebate for duties paid on the import of mining machinery and equipment;
- zero VAT rating for exports;
- zero withholding tax on dividends paid by mining companies.

⁵⁷ Olav Lundstol and Jan Isaksen, “Zambia’s Mining Windfall Tax,” <https://www.wider.unu.edu/sites/default/files/Publications/Working-paper/PDF/wp2018-51.pdf> and author’s calculations.

⁵⁸ The corporate income tax rate for entities that add value to copper cathodes is 15 percent.

⁵⁹ See e.g., PwC, “Zambia Corporate - Taxes on Corporate Income.”

<https://taxsummaries.pwc.com/zambia/corporate/taxes-on-corporate-income>.

⁶⁰ The corporate income tax rate for entities that add value to copper cathodes is 15 percent.

⁶¹ Zambia Revenue Authority, “Tax Incentives,” <https://www.zra.org.zm/wp-content/uploads/2020/01/Tax-Incentives.pdf>.

A comparison of the two tax regimes is provided in Exhibit 12 below.

Exhibit 12. Zambian tax regime summary since 2019

	Mining tax regime	General tax regime
Corporate income tax	30% ⁶²	35%
Royalty	5.5%–10%	n/a
Capital gains tax	0%	0%
Branch tax rate	30%	35%
Loss carry forward	Up to 10 years	Up to 10 years
Dividend withholding tax	0%	20%
Safe harbor thin capitalization	3.1	n/a

When compared with other mineral-rich countries, Zambia’s tax rates are broadly similar. A detailed comparison between Zambia and 11 other mineral rich nations is provided below in Exhibit 13.

⁶² The corporate income tax rate for entities that add value to copper cathodes is 15 percent.

Exhibit 13. Mining tax rate comparisons, selected mineral-rich nations⁶³

	Corporate income tax rate ⁶⁴	Mineral royalty rate (copper where applicable) ⁶⁵	Excess profits tax or equivalent
South Africa ⁶⁶	28%	0.5%–7%	No
Democratic Republic of the Congo (DRC) ⁶⁷	30%	2%–3.5%	Yes
Russia	20%	8%	No
Australia	30%	2.7–5%	No ⁶⁸
Canada ⁶⁹	26%–31% ⁷⁰	0–15%	No
Brazil	34%	2%	No
China	25%	2%–8%	No
Chile	25–27%	0%–14%	No
Peru ⁷¹	29.5%	1%–12%	Yes
Ukraine ⁷²	28%	5%	No
India	25%–40%	10%	No
Zambia	30%	5–10%	No

Source: PwC, Corporate Income Taxes, Mining Royalties and Other Mining Taxes

International tax and transfer pricing

As mining companies in Zambia, such as Mopani, are subject to corporate income tax, the international tax and transfer pricing settings are an important tool in assisting Zambia to collect its fair share of corporate income tax.

Zambia's transfer pricing rules were first introduced in 1999, making it one of the first African countries to enact such provisions. Accompanying transfer pricing regulations were introduced in 2000. The rules are not detailed but do introduce the arm's length principle⁷³ and provide the Zambia Revenue

⁶³ International Comparative Legal Guides (ICLG), "Mining Laws and Regulations," <https://iclg.com/practice-areas/mining-laws-and-regulations> and author's own research.

⁶⁴ Obtained from PwC, "Worldwide Tax Summaries Online," <https://taxsummaries.pwc.com/>.

⁶⁵ Where not otherwise available, royalty rates were obtained from PwC, "Corporate Income Taxes, Mining Royalties and Other Mining Taxes. A Summary of Rates and Rules in Selected Countries," <https://www.pwc.com/gx/en/energy-utilities-mining/publications/pdf/pwc-gx-miining-taxes-and-royalties.pdf>.

⁶⁶ SARS, "Royalty Guide," <https://www.sars.gov.za/TaxTypes/MPRR/Pages/default.aspx>.

⁶⁷ Obtained from DLA Piper, "A New Mining Code for the DRC," <https://www.dlapiper.com/en/morocco/insights/publications/2018/08/democratic-republic-of-congo-mining-code>; JD Supra, "Revision of Democratic Republic of Congo's mining code driven by cobalt price rise," <https://www.jdsupra.com/legalnews/revision-of-democratic-republic-of-77914/>.

⁶⁸ Australia introduced the Mineral Resources Rent Tax in 2010; however, it was repealed in 2014.

⁶⁹ Mining Association of Canada, "Comparative Review of the Rate of Royalty in the Canada Mining Regulation, as Relates to National and International Competitiveness," <https://mining.ca/wp-content/uploads/2019/03/ComparativeReviewoftheRateofRoyalty.pdf>. Mineral rate is based on profits.

⁷⁰ Includes federal, provincial, and territorial corporate income taxes.

⁷¹ NRGI, "Mineral Revenue Sharing in Peru," https://resourcegovernance.org/sites/default/files/documents/mineral-revenue-sharing-in-peru_0.pdf.

⁷² Volodymyr Kolvakh and Anatolii Doludenko, "Mining in Ukraine: Overview," [https://uk.practicallaw.thomsonreuters.com/w-019-9318?transitionType=Default&contextData=\(sc.Default\)&firstPage=true&bhcp=1](https://uk.practicallaw.thomsonreuters.com/w-019-9318?transitionType=Default&contextData=(sc.Default)&firstPage=true&bhcp=1).

⁷³ This is the fundamental principle of transfer pricing under the OECD's Transfer Pricing Guidelines. It prescribes that transactions between related parties should be conducted at a price that is arm's length.

Authority (ZRA) with the power to adjust where transactions are not arm's length. The transfer pricing regulations also recognize the OECD's Transfer Pricing Guidelines, which are a source of interpretation when there is no specific guidance under Zambia's primary or secondary legislation.

Zambia's transfer pricing rules were significantly strengthened in 2018, with updated transfer pricing regulations and the introduction of contemporaneous transfer pricing documentation requirements and penalties. Such documentation is an important tool for tax administrations to assess taxpayer risk and hold taxpayers accountable to the transfer pricing rules.

Since 2018, Zambia also has required certain transfer pricing-related disclosures in the annual income tax return. Other than documentation or disclosure penalties, there are no specific transfer pricing penalties that result from breaching the arm's length principle. Instead the general tax penalties apply.

In 2008, Zambia introduced a commodity reference price transfer pricing rule, the so called "sixth method." This rule, contained in the Income Tax Act, prescribes that all intra-group transactions for the sale of metals must be set according to published reference prices. In the case of copper, the reference price is generally the monthly average LME cash price of copper.⁷⁴ There are, however, various price adjustments that may be needed, including for quality or grade differences.

Box 3. The "sixth method": Transfer pricing and commodities

The sixth method has been identified by many countries as a potential solution to transfer pricing intra-group transactions involving the sale of commodities. The sixth method suggests that the transfer price—that is, the price of the intra-group sale of commodities—should be based on appropriate reference prices, such as the LME. This allows the tax administrations to price transactions involving local mining subsidiaries in a relatively simple manner. There is no need for local benchmarking, a detailed analysis of the value chain, or information from foreign group members.

The method is most common in South America, having first been implemented by Argentina and Brazil. Other countries to have implemented it include Uruguay, Ecuador, Bolivia, and Costa Rica.⁷⁵ Zambia was the first African country to enact such a rule in 2008 and has since been followed by Malawi. The African Tax Administration Forum's (ATAF) suggested approach to drafting transfer pricing legislation now includes a version of the sixth method.⁷⁶

Up until 2017, the sixth method was not endorsed by the OECD's Transfer Pricing Guidelines. However, following the BEPS-related revisions to the Guidelines, a limited form of the sixth method is now included as part of the OECD's comparable uncontrolled price (CUP) method. The Guidelines suggest that relying on reference prices (potentially with some adjustments) can be an appropriate transfer pricing method in some circumstances.

⁷⁴ Finished copper cathodes of 99.98 percent purity.

⁷⁵ Veronica Grondona, "Transfer Pricing: Concepts and Practices of the 'Sixth Method' in Transfer Pricing," South Centre Tax Policy Brief No. 2, https://www.southcentre.int/wp-content/uploads/2018/05/TCPB2_Transfer-Pricing-Concepts-and-Practices-of-the-%E2%80%98Sixth-Method%E2%80%99-in-Transfer-Pricing_EN.pdf.

⁷⁶ African Tax Administration Forum (ATAF), "Suggested Approach to Drafting Transfer Pricing Legislation," https://irp-cdn.multiscreensite.com/a521d626/files/uploaded/ATAF%20Suggested%20Approach_revise_green_HR.pdf.

Outside of transfer pricing, Zambia’s Income Tax Act includes relatively basic permanent establishment rules. Zambia has recently adopted the BEPS Action 4 interest deductibility rules, which supersede traditional thin capitalization rules.⁷⁷ Zambia joined the OECD’s Inclusive Framework in December 2017 but has not yet implemented other BEPS-related measures such as strengthened permanent establishment rules, hybrid mismatches, or country-by-country reporting (CbCR).

Zambia has double tax treaties with approximately 20 countries, including major trading partners such as China, South Africa, and Tanzania, and major foreign direct investment (FDI) sources such as Canada, the UK, Germany, and France. However, it has also signed treaties with several tax havens⁷⁸—Ireland, Switzerland, the Netherlands, and Mauritius—all of which significantly reduce Zambian withholding taxes and other taxing rights. Zambia has taken several positive steps, recently acting to cancel the Mauritius treaty and renegotiate the Switzerland treaty.⁷⁹ These treaties are further analyzed in Section 4.4.

A summary of Zambia’s international tax framework is provided below in Exhibit 14.

Exhibit 14. Zambia international tax summary⁸⁰

Specific transfer pricing rules	Yes
Transfer pricing disclosures	Yes
Transfer pricing documentation requirements	Yes
Controlled foreign company rules	No
Interest deductibility rules (BEPS Action 4)	Yes
CbCR rules	No
Source/permanent establishment rules	Yes
Hybrid mismatch rules (BEPS Action 2)	No
Digital services tax	No

Source: EY Worldwide Tax Guide⁸¹ and author’s research

The ZRA, with help from donors, has significantly expanded its administrative capacity to deal with transfer pricing in the mineral sector in recent years. This includes technical assistance and support from the ATAF, Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF), and Tax Inspectors Without Borders (TIWB), amongst others.

⁷⁷PwC, “Zambia: Corporate - Deductions.” <https://taxsummaries.pwc.com/zambia/corporate/deductions>.PwC.

⁷⁸ Classification of tax havens based on Oxfam, “Blacklist or Whitewash: What a Real EU List of Tax Havens Should Look Like,” Oxfam Briefing Note November 2017,. Esme Berkhout, “Tax Battles: the dangerous global race to the bottom on corporate tax,” Oxfam, December 12, 2016, <https://www.oxfam.org/en/research/tax-battles-dangerous-global-race-bottom-corporate-tax>.

⁷⁹ Will Fitzgibbon, “Zambia Becomes Second Nation to Tear Up Mauritius Tax Deal,” International Consortium of Investigative Journalists, July 6, 2020, <https://www.icij.org/investigations/mauritius-leaks/zambia-becomes-second-nation-to-tear-up-mauritius-tax-deal/> and EY, “Zambia-Switzerland New Tax Treaty Enters into Force,” https://www.ey.com/en_gl/tax-alerts/zambia-switzerland-new-tax-treaty-enters-into-force.

⁸⁰ Zambia Ministry of Finance, “Annual Economic Reports.”

⁸¹ EY, “Worldwide Corporate Tax Guide 2019,” https://www.ey.com/en_gl/tax-guides

Development agreements

As Zambia flagged its intention to privatize the mining industry in the late 1990s, private investors began negotiations for the purchase of the government-owned mining entities and assets. In parallel, these purchasers also signed “development agreements” with the Zambian government. These agreements set out the rights and obligations of the purchaser with respect to operational, tax, environmental, and social issues associated with the mine. Many of these agreements offered generous tax concessions and subsidies under the rationale of attracting private investors. The agreements were ultimately overturned by the Mines and Minerals Development Act in 2008.⁸²

The elements of some of these agreements have now been published; however, many are not publicly available.⁸³ Broadly, these agreements with several of Zambia’s largest copper mines included a reduced corporate tax rate, immediate write-off for capital expenditure, a royalty rate of 0.6–2 percent, reduced excise and other duties, and reduced withholding taxes. Importantly, all of the publicly available agreements had 15- or 20-year stabilization clauses, shielding the companies from reform efforts. This included protection from certain tax changes such as increases in corporate income tax rates, royalty rates, and withholding tax rates, and protection from the imposition of new taxes.

The Mopani development agreement, dated March 31, 2000, included the following provisions:⁸⁴

- Income tax rate of 25 percent (in 2000 the general corporate income tax rate was 35 percent);
- loss carry forward of 10 years;
- stability period of 15 years;
- immediate 100 percent deduction of capital expenditure;
- deduction of price participation payments pursuant to the sale agreement;
- royalty rate of 0.6 percent (in 2000 the royalty rate was generally 3 percent);
- customs and duty rate of 0 percent for the first four years;
- VAT rate of 0 percent for exports; and
- withholding tax of 0 percent on dividends, interest, royalties, and patent payments over the stability period.

Unfortunately, the development agreements have not been published by Zambia, and it is therefore difficult to make comparisons between Mopani’s development agreement and other development agreements in Zambia. However, the terms are broadly similar to four other Zambian copper development agreements summarized in the IGF Tax Incentives Database.⁸⁵

⁸² Government of Zambia, “Mines and Mineral Development Act of 2008, Article 160,” <http://extwprlegs1.fao.org/docs/pdf/zam117531.pdf>.

⁸³ Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF), “Mining Tax Incentives Database,” <https://www.igfmining.org/beps/resources/igf-mining-tax-incentives-database/>.

⁸⁴ Resource Contracts, “Mufulira Mine, Smelter, and Refinery, and Nkana Mines, Concentrator and Cobalt Plant Development Agreement, 2000 at Schedule 8,” <https://www.resourcecontracts.org/contract/ocds-591adf-0639959550>.

⁸⁵ IGF, “Mining Tax Incentives Database.”

3. BACKGROUND OF COMPANIES

3.1 GLENCORE

Glencore is a multinational mining and commodity trading company. Glencore is headquartered in Switzerland, listed in London and Hong Kong, and has its registered office in Jersey. By market capitalization, Glencore is the fourth-largest mining company in the world, behind only BHP Billiton, Rio Tinto, and Vale.⁸⁶

The company was founded in 1974 by billionaire Mark Rich. The company, then known as Mark Rich & Co. AG, engaged in marketing and trading of commodities such as metals, minerals, oil, grain, and agricultural products. In the late 1980s, Mark Rich & Co. AG diversified into mining, smelting, processing, and refining, acquiring a range of industrial assets and mines.

In 1983, Rich was indicted in the US on several counts including tax evasion, wire fraud, racketeering, and trading with Iran during the oil embargo. Rich fled to Switzerland and never returned to face the charges. In the final days of his presidency, Bill Clinton controversially pardoned Rich.

In the early 1990s, a failed attempt to corner the world zinc market led to Rich being forced by colleagues to give up 51 percent of his stake in the company. The company was renamed Glencore International, and in 1994 the company bought the remaining shares held by Rich. At this point, Glencore became an employee-owned company and ended its 20-year affiliation with Rich.

In 2011 Glencore completed a US\$10 billion initial public offering in London and Hong Kong, which took the company's total value to US\$59 billion.⁸⁷ In 2019 Glencore was listed sixteenth in Fortune's Global 500 list of companies, with US\$221 billion of revenue.⁸⁸

Throughout 2019 Glencore operated in over 35 countries and globally had a workforce of over 160,000 employees and contractors.⁸⁹

In Zambia Glencore has recently held interests in two copper mining entities: Mopani Copper Mines PLC and Sable Zinc Kabwe Limited. Sable Zinc Kabwe ceased production in 2015; Mopani was recently sold to ZCCM-IH in March 2021. Glencore also holds interests in two other African copper mining entities, Mutanda Mining and Katanga Mining, in the neighboring Democratic

⁸⁶ PwC, "Mine 2019: Resourcing the Future," p. 22, <https://www.pwc.com/mx/es/publicaciones/archivo/2019/06/20190604-pwc-mx-mine-report-2019.pdf>.

⁸⁷ Riseborough, Jesse and Zijiang Wu, "Glencore Shares Stick to Offer Price after \$10bn IPO," Bloomberg, May 2011, <https://www.bloomberg.com/news/articles/2011-05-18/glencore-ipo-to-raise-10-billion-as-investors-defy-market-rout>.

⁸⁸ Fortune, Global 500, <https://fortune.com/global500/2019/search/>.

⁸⁹ Glencore, "Annual Report 2019," <https://www.glencore.com/media-and-insights/news/2019-Annual-Report-of-Glencore-plc>.

Republic of the Congo, both of which also produce cobalt. Outside of the Copperbelt, Glencore owns interests in various copper mines throughout the world, including two of the largest copper mines in the world in Peru (Antapaccay and Antamina), mines in Argentina (Alumbreira), Chile (Lomas Bayas and Collahuasi), and Australia (Mount Isa, Ernest Henry, Townsville).

Glencore Group's revenue, profit, and tax expenses for the last eight years are detailed in Exhibit 15.⁹⁰

Exhibit 15. Glencore's financial and tax summary

Year	Revenue (US\$ million)	Net profit (US\$ million) ⁹¹	Income tax expense (US\$ million) ⁹²	Effective tax rate	Dividends and buy-backs (US\$ million)
2011	186,152	4,010	264	7%	364
2012	214,436	2,726	-76	-3%	1,066
2013	232,694	2,042	254	12%	2,236
2014	221,073	5,354	1,089	20%	3,039
2015	170,497	-896	98	-11%	2,898
2016	152,948	809	638	79%	0
2017	205,476	7,549	1,759	23%	998
2018	220,524	6,322	2,063	33% ⁹³	3,179
Annual average	200,475	3,490	761	21.8%	1,723

Although Glencore is headquartered in a tax haven,⁹⁴ it has mining and other operations throughout the world and pays corporate income taxes in various jurisdictions.⁹⁵ Based on its net profits and income tax expense, Glencore's 2011–2018 total effective tax rate is 21.8 percent.⁹⁶

⁹⁰ Revenue, profit, and income tax expense are sourced from Glencore's Annual Reports for the periods 2011 to 2019.

⁹¹ Net profit is income before income taxes, adjusted to remove the effect of impairments to non-current assets (including financial assets), as these generally have no tax consequences.

⁹² This would not include mineral royalties, as these are not considered income taxes. Upon review of these figures, Glencore has suggested that "having removed impairments from net profit," the table could "remove the impairment related tax credits within income tax expense," but the table above has not done so given uncertainty about the taxation of specific impairments.

⁹³ By comparison, Glencore's 2018 Payments to Governments Report cites an adjusted effective tax rate of 30.9 percent, after adjustments for significant items (primarily currency translation effects and tax losses not recognized). See Glencore, "Payments to Governments Report 2018," https://www.glencore.com/dam/jcr/c9cea7dd-9fe6-4f9b-bd6a-e82f72672075/Glencore_Payments_to_governments_report_2018--.pdf. Glencore's first Payments to Governments Report was issued in 2015. See Glencore, "Payments to Governments Report 2015," <https://www.glencore.com/dam/jcr:7dd48128-9e11-4df1-8ada-1920561cf813/GLEN-Payments-to-Government-2015.pdf>. The adjusted effective tax rate was not reported in 2015, 2016, or 2017.

⁹⁴ Switzerland is classified as a tax haven per Oxfam, "Blacklist or Whitewash."

⁹⁵ Note the income tax expense does not fully incorporate certain other payments to governments that are common in the extractives sectors. For instance, this income tax expense is unlikely to reflect royalties paid to national governments, which may be included "above the line" as expenses taken into account before arriving at a net profit as well. For more information on these other payments to government by Glencore, see Glencore, "Payments to Governments Reports," <https://www.glencore.com/media-and-insights/insights/2019-payments-to-governments-report>.

⁹⁶ The effective tax rate fluctuates significantly across the eight-year period. This may in part be because, for many years, Glencore was at or around break-even (it never earned a profit of more than 4 percent of sales). This means that relatively small changes in tax items (such as timing differences, restructures, tax rate changes, new provisions, etc.), can have a marked impact on the effective tax rate. By comparison, companies with consistently strong profits are likely to have much more consistent effective tax rates.

Over the same eight-year period, First Quantum and BHP had an annual effective tax rate of 35.1 percent and 31.2 percent respectively.⁹⁷ By comparison, the average headline corporate income tax rate weighted by GDP is 26.3 percent.⁹⁸

3.2 MOPANI

Mopani was originally part of the state-owned Zambia Consolidated Copper Mines (ZCCM) and was state owned until privatization in 2000.⁹⁹

Until March 2021, the state-owned ZCCM-IH retained only a 10 percent interest in the company. Glencore was the operator, with an indirect 73.1 percent, and the Canadian-based First Quantum Minerals Ltd. Indirectly held a 16.9 percent share. These private ownership interests were manifested through the joint venture company Carlisa Investments, which owns a direct 90 percent interest in Mopani. This ownership structure is shown in Exhibit 16 below.

Exhibit 16. Mopani ownership structure¹⁰⁰



In the March 2021 transaction, Carlisa sold its 90% interest to ZCCM-IH, thereby making ZCCM-IH the sole owner of Mopani.¹⁰¹

⁹⁷ Author's calculations based on annual reports of First Quantum and BHP Billiton for the period 2011–2018.

⁹⁸ Tax Foundation, "Corporate Income Tax Rates Around the World 2019," <https://files.taxfoundation.org/20191209111406/Corporate-Tax-Rates-around-the-World-2019.pdf>.

⁹⁹ Glencore describes its history with Mopani from 2000-2021 as follows: "In 2000, Glencore acquired its shareholding in Mopani in a competitive tender as part of a general privatisation, supported by the World Bank. Following years of under-investment, the business was in a parlous financial and physical condition and its 10,000 jobs at risk. For over 20 years, until the sale to ZCCM in March 2021, Glencore made a very substantial contribution to the local, regional and national economic well-being and growth of Zambia: Over USD\$1 billion in taxes and royalties paid; USD\$3 billion employee salaries paid; Over USD\$200 million spent on social investment. Glencore invested almost USD\$4 billion to redevelop and improve the efficiency and environmental footprint of the operations. Until the sale to ZCCM, Glencore received no dividends, while continuing to invest and secure Mopani's long-term future. ZCCM acquired Mopani for USD\$1, leaving USD\$1.5 billion of debt owing to Glencore, representing a significant loss/write-down of Glencore's cumulative, historical investment." Glencore letter to Oxfam, Response to request for comment, May 28, 2021.

¹⁰⁰ Africa Progress Panel, "Equity in Extractives: Stewarding Africa's Natural Resources For All," p. 49, https://static1.squarespace.com/static/5728c7b18259b5e0087689a6/t/57ab29519de4bb90f53f9fff/1470835029000/2013_African+Progress+Panel+APR_Equity_in_Extractives_25062013_ENG_HR.pdf.

¹⁰¹ Glencore, "Signed contract to sell underlying stake of 73% in Mopani in \$1.5b transaction," Jan. 19, 2021, <https://www.glencore.com/media-and-insights/news/signed-contract-to-sell-underlying-stake-of-73-in-mopani-in-1.5b-transaction>. Glencore, "Completion of sale of underlying 73% stake in Mopani," Mar. 31, 2021, <https://www.glencore.com/media-and-insights/news/completion-of-sale-of-underlying-73-stake-in-mopani>.

Mopani's head office is located in Kitwe, Zambia. Mopani's two principal assets are the Nkana mine (located near Kitwe) and the Mufulira mine. These sites are located within Zambia's northern Copperbelt province, as shown in Exhibit 17 below.

Exhibit 17. Map of Mopani's operations



As of June 2020, Mopani has a workforce of approximately 11,000 employees and contractors.¹⁰² The workforce was dramatically reduced in 2015 after large-scale retrenchments. In 2015, Mopani's workforce was as large as 20,000 employees and contractors and was reduced to just 14,000 in 2016.¹⁰³

Mopani's revenue, profit, and tax payments for the period 2011–2018 are detailed in Exhibit 18 below.¹⁰⁴

¹⁰² Zambia Ministry of Mines and Mineral Development, Mopani employment data (on file with authors); Zambia Chamber of Mines, <http://mines.org.zm/>.

¹⁰³ Zambia Ministry of Mines and Mineral Development, Mopani employment data (on file with authors); Zambia Chamber of Mines, <http://mines.org.zm/>. Figures are rounded to the nearest thousand.

¹⁰⁴ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018. See ZCCM-IH, "Annual Reports," <https://zccm-ih.financifi.com/financials/annual-reports/>.

Exhibit 18. Mopani financial and tax summary

Year	Revenue (US\$ million)	Net profit (US\$ million) ¹⁰⁵	Income tax expense (US\$ million)	Royalty payments (US\$ million) ¹⁰⁶	Tax payments (US\$ million)
2011	1,152	111	n/a		
2012	1,053	31	9 ¹⁰⁷		
2013	1,193	36	14 ¹⁰⁸		
2014	828	-8	3 ¹⁰⁹		
2015	291	-285	n/a	42	0.3
2016	255	-180	2 ¹¹⁰	10	2.3
2017	353	-290	0 ¹¹¹	12	0
2018	842	-723	0 ¹¹²	22	0
Annual average	746	-164	3.5	22	0.7

Box 4. Operational challenges at Mopani

Mopani's revenue results paint a complex picture of Mopani's operational challenges throughout the period 2011–2018. In 2011 and 2012, Mopani's revenues were high, coinciding with the peak of copper prices. However, as the copper prices fell from their 2011 high, there were significant operational challenges at Mopani.

In 2015 Glencore decided to dramatically reduce production in order "to support the market in the nearer term, while also enabling uninterrupted focus on their respective transformation and upgrade projects."¹¹³ At Mopani, Glencore planned an 18-month partial shutdown, with an investment of US\$500 million slated to develop three new shafts. The upgrade would raise the mine's output from 110,000 to about 140,000 mt per year while reducing production costs.¹¹⁴ During these years, the copper price was consistently below US\$6,000 per mt. The project was completed in late 2017/early 2018.¹¹⁵

Glencore's production levels are shown below.¹¹⁶

¹⁰⁵ Net profit has been adjusted to remove impairments, as these generally have no tax consequences.

¹⁰⁶ Resource Projects, "Project Payments," <https://resourceprojects.org/projects?tab=0&query=Mopani>. Data only available for 2015–2018.

¹⁰⁷ EITI, "Zambia 2012 Reconciliation Report," https://eiti.org/files/documents/2012_zambia_eiti_report.pdf. ZMW49.45 million converted to US\$ at January 1, 2013 exchange rate of 0.19093 per www.oanda.com/. The Zambian currency was rebased at the end of 2012, and the figure was reported in the newly rebased currency.

¹⁰⁸ EITI, "Zambia 2013 Reconciliation Report," https://eiti.org/files/documents/2013_zambia_eiti_report.pdf. ZMW75.283 million converted to US\$ at average 2013 rate of 0.18540 per www.oanda.com/.

¹⁰⁹ EITI, "Zambia 2014 Reconciliation Report," https://eiti.org/files/documents/2014_zambia_eiti_report.pdf. ZMW19.468 million converted to US\$ at average 2014 rate of 0.16276 per www.oanda.com/.

¹¹⁰ Glencore, "Payments to Governments Reports." (note these were only available for the years 2016–2018).

¹¹¹ *Ibid.*

¹¹² *Ibid.*

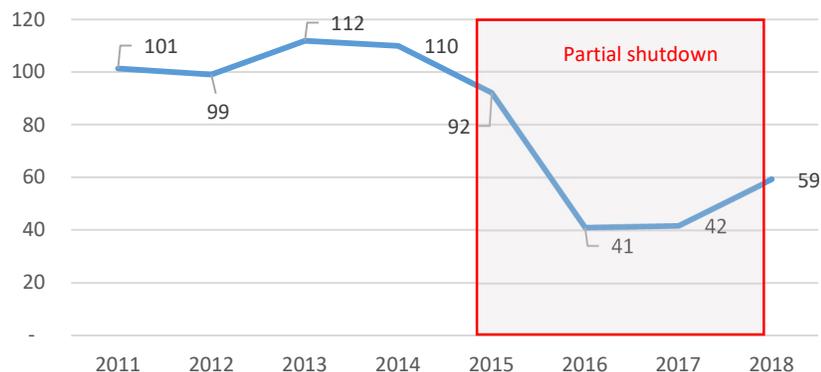
¹¹³ Glencore, "Annual Report 2015," p. 49.

¹¹⁴ See e.g., *Financial Times*, "Glencore Deals Mining Blow to African Copper Producers," September 8, 2015, <https://www.ft.com/content/3f1d9664-562f-11e5-a28b-50226830d644>.

¹¹⁵ Glencore, "Annual Report 2017."

¹¹⁶ Glencore's smelter also processes ore from third-party feeds. The above shows its production from its own sources only. Timing of partial shutdown is an estimate, based on disclosures in Glencore's annual reports.

Mopani copper production (mt thousands) from own sources



These operational limitations are reflected in Mopani's results. 2015, 2016, and 2017 saw a marked drop in production from the highs of 2012 and 2013. Mopani's production began to increase again in 2018, with 59,000 mt of production.

However, good news has been scarce since the shutdown. In 2018 Glencore recorded an impairment of approximately US\$800 million in relation to Mopani as a result of "changes in Zambian tax legislation and delays on ramp-up of development projects."¹¹⁷ In 2019 Mopani had to shut down one of its smelters due to environmental concerns.¹¹⁸ It also closed two shafts after the deaths of five workers.¹¹⁹ This resulted in copper production of just 21,600 mt from its own sources in 2019.¹²⁰

In April 2020 Glencore announced it would suspend operations for a period of three months due to the decline in the copper price and critical disruptions to international mobility, transportation, and supply chains arising from COVID-19.¹²¹ This was met with resistance from the government, who threatened to revoke mining licenses due to a failure to provide a reasonable notice period. Subsequently, the company announced it would resume operations for 90 days while remaining in talks with the Zambian government over its operational challenges.¹²²

Amongst many of these operational challenges have been consistent and explicit threats to downsize, suspend, or abandon operations should the government implement certain fiscal or related measures.¹²³

¹¹⁷ Glencore, "Annual Report 2018," p. 127.

¹¹⁸ See e.g., Glencore, "Annual Report 2019," p. 70 and *Economist*, "Mopani Shuts Smelter until End of the Year," June 24, 2019,

http://country.eiu.com/article.aspx?articleid=148153798&Country=Zambia&topic=Economy&subtopic=For_4.

¹¹⁹ See e.g., J. P. Casey, "Mopani Resumes Operations Following Investigation into Worker Deaths," *Mining Technology*, April 10, 2019, <https://www.mining-technology.com/mining-safety/mopani-resumes-operations-following-investigation-into-worker-deaths>.

¹²⁰ Glencore, "Annual Report 2018," p. 236.

¹²¹ See e.g., Chris Mfula, "Glencore's Mopani Copper Mines Shuttters Zambia Mines Due to Coronavirus," Reuters, April 7, 2020,

<https://www.reuters.com/article/us-health-coronavirus-zambia-mining/glencores-mopani-copper-mines-shuttters-zambia-mines-due-to-coronavirus-idUSKBN21P2AJ>.

¹²² See e.g., Jack Grimshaw, "Glencore's Mopani Copper to Temporarily Resume Operations," May 4, 2020, *Mining*, <https://www.miningglobal.com/mining-sites/glencores-mopani-copper-temporarily-resume-operations>.

¹²³ See for example, *African Mining Market*, "Zambia Threatens to Expel Foreign Workers over Mine Job Cuts," December 17, 2018, <https://africanminingmarket.com/zambia-threatens-to-expel-foreign-workers-over-mine-job-cuts/3253/>; and Alexandra Wexler, "Zambia to Roll Back Copper Mining Taxes," *Wall Street Journal*, June 24, 2015, <https://www.wsj.com/articles/zambia-to-roll-back-copper-mining-taxes-1435147737>.

4. TAX REVENUE RISKS

In this section, the research considers the types of risks for reduced tax collection by the government of Zambia that may have been the result of potential profit shifting by Glencore from the Mopani copper mine. It also considers how the company's structure, tax approach, and operations contribute to these risks.

There may be various direct (corporate income tax, royalties) and indirect (VAT, customs, excises, payroll tax, withholding taxes, etc.) tax risks that could materialize. However, this report focuses on the corporate income tax risks that arise in relation to transfer pricing and related international tax issues.

In 2014, the ZRA answered a UN questionnaire regarding country experiences with base erosion and profit shifting issues. Although broad in nature rather than just considering issues in the copper or extractives sector, the most common BEPS practices or structures were identified by the ZRA as:

- Tax treaty abuse and treaty shopping;
- profit shifting through interest, management, and consulting fees;
- the avoidance, by non-residents, of creating a taxable presence (permanent establishment) in Zambia;
- tax incentives.

The list is instructive, and several of these risks overlap with risks identified in relation to Mopani and the extractives sector more broadly.

Box 5. Mopani's tax affairs: Insights from a 2011 audit report

In 2009, a Mopani pilot tax audit was commissioned by the ZRA. A team of international auditors from Grant Thornton LLP (a global accounting firm) and ECON Pöyry (a global consulting and engineering firm) were engaged to conduct a pilot audit of Mopani's tax affairs. These firms were essentially hired to act as quasi-tax auditors on behalf of the ZRA. The scope of the report included the 2005, 2006, and 2007 fiscal years. In 2011 a draft of the report was leaked to journalists.¹²⁴

The below summarizes some of the key findings of the draft report with respect to profit shifting and tax avoidance.

1. The operational costs across a three-year period were segmented (such as labor, electricity, fuel). The increase in costs across the period were compared against costs indices for those sectors and any increases in production. The results suggest that the actual costs in 2007 were US\$381 million greater than what could

¹²⁴ Grant Thornton and ECON Pöyry, Pilot Audit Report – Mopani Copper Mines Plc, <https://www.scribd.com/doc/48560813/Mopani-Pilot-Audit-Report>. See also Alex Cobham, "Swiss-Ploitation. The Swiss Role in Commodity Trade" (Christian Aid Occasional Paper Number 10, Christian Aid, London, May 2013), <https://www.yumpu.com/en/document/read/29298207/swiss-ploitation-the-swiss-role-in-commodity-trade-christian-aid>.

be reasonably expected. This suggests that Mopani may have been overcharged amounts for services from related parties.

2. Glencore Group companies were charging Mopani for freight based on a fixed fee of shipments to Rotterdam despite the fact that most shipments were made to other ports much closer to Zambia. This is in line with previous reports that found more than half of the copper Zambia exported in 2008 was destined for Switzerland, but according to Swiss import data almost none of it arrived. This finding adds credence to the notion that Mopani's copper was sold through a marketing hub located in Switzerland.

3. The auditors compared the price of copper sales against the LME quoted prices for the period from 2000 to 2007. In the initial years the price achieved by Mopani was in line with the LME. From 2004 onwards a gap began to emerge. This gap increased right through to 2007, when Mopani's sales prices were approximately 20 percent below the LME price. The report also suggests that Mopani entered complex hedges and forward contracts with the intention of artificially lowering the price at which copper was sold to related parties.

4. Mopani entered a "Copper Marketing and Off-take Agreement" with Glencore UK Ltd. in 2000. Under the agreement, copper is sold at the LME price, less a premium/discount and less freight. The actual discount is not disclosed. The report suggests that there are many unusual terms in the agreement, which suggest the behavior is not arm's length, as follows:

- Prices can be adjusted for as long as six months after the transaction;
- adjustments do not appear to be consistent;
- some copper is sold under an old agreement under which the prices are as low as 25 percent of the LME price; and
- the price seems to be determined by the related entity purchasing rather than by negotiation or mutual agreement.

5. Under the agreement referred to in (4) above, Glencore was entitled to a 2 percent commission on the gross value of sales. After discussions between the ZRA and Mopani, the ZRA asserted that these commissions were not tax deductible to Mopani. As a result, the commission would not have resulted in reducing the tax liability in Zambia and in fact may have increased Glencore's tax in the other jurisdiction. Since then, the commission has never been charged despite the contractual terms stipulating it. This could be an example of Glencore ignoring the contractual terms of a transaction to avoid a detrimental Zambian tax outcome and potential conflict with Zambian authorities.

Grant Thornton and ECON Pöyry concluded that Mopani's results, at least in relation to intra-group revenues, were not in accordance with the arm's length principle.

In general, the report also notes the uncooperative nature of Glencore-Mopani throughout the process. There is a concerning lack of evidence with respect to many issues, either because it did not exist or was withheld by Glencore-Mopani. Issues include:

- Inconsistencies in copper production figures with those reported to the Zambian Chamber of Mines;
- lack of documentary evidence of Glencore's sales of Mopani copper to third-party customers;
- inconsistencies between the general ledger data and trial balance data;
- lack of original invoices or substantiating evidence for transactions; and
- inconsistencies between the operational mining system and the financial accounting system.

In response, Glencore maintained that the report was misleading and flawed and that the auditors did not fundamentally understand Mopani's business.¹²⁵ Glencore has since reiterated this position in 2021.¹²⁶

The leaked audit report, discussed above, is instructive and raises several tax revenue risks in relation to Mopani's operations. Glencore nonetheless refutes the audit's findings.¹²⁷

In May 2020 the Supreme Court of Zambia issued its judgement in relation to a long-running tax dispute between Mopani and the ZRA. The dispute related to tax assessments raised by the ZRA for the income years that ended in 2007, 2008, and 2010. The case covered several issues, but the central question was whether these assessments, based on the assertion that Mopani was underpricing copper to a related party in Switzerland, could be sustained. To support their position, the ZRA had pointed to higher sales prices in other transactions involving the sale by Mopani of copper to third parties in Zambia. In response, Mopani had argued that these sales were different in nature and, in particular, did not include the price hedging that was present in the agreements with Glencore International AG. The case turned largely on procedural and administrative aspects; however, the Court ultimately affirmed the original assessments and left Mopani with a US\$13 million tax bill.¹²⁸

The case is one of the first transfer pricing cases to have been litigated in Africa and represents a significant victory for the ZRA, and an important legal precedent. However, it also demonstrates that disputes over transfer pricing can be lengthy, complex, and costly affairs for tax administrations (and taxpayers). It stresses the importance of multinationals paying their fair share of taxes, rather than soaking up limited tax administration resources on compliance and enforcement activities. Simplified rules (such as the formulary apportionment rules described in Methods 3, 4, and 5) would reduce the likelihood of such complex disputes.

Another useful reference in this context is the African transfer pricing mining risk assessment toolkit developed by Gesellschaft für Internationale Zusammenarbeit (GIZ) and ATAF.¹²⁹ The toolkit is designed to assist African tax administrations in dealing with tax revenue risks arising from mining. It notes that there are a handful of key transactional transfer pricing risks in the mining sector:

- Use of marketing hubs to underprice commodity exports;
- use of intra-group debt, giving rise to interest deductions;

¹²⁵ See for example, Reuters, "Mopani Says Zambian Tax Audit Was Flawed," June 16, 2011, <https://www.reuters.com/article/zambia-mopani-audit-idAFLDE75F1U920110616>.

¹²⁶ Glencore letter to Oxfam, Response to request for comment, May 28, 2021.

¹²⁷ Glencore letter to Oxfam, Response to request for comment, May 28, 2021. Glencore stated that "[t]he draft provisional report contained fundamental factual errors (including in relation to a proper understanding of toll treated material...)...and both Mopani and Glencore have publicly refuted its 'conclusions' on numerous occasions."

¹²⁸ David Hansen, "Zambian Court Affirms Copper Company's \$13M Tax Bill," *Law 360 Tax Authority*, June 2, 2020, <https://www.law360.com/tax-authority/articles/1278686/zambian-court-affirms-copper-company-s-13m-tax-bill>.

¹²⁹ Alexandra Readhead, "Toolkit for Transfer Pricing Risk Assessment in the African Mining Industry," GIZ and ATAF, https://www.bmz.de/rue/includes/downloads/2017_GIZ_Transfer_Pricing_Risk_Tool_EN.pdf.

- procurement services and management services.

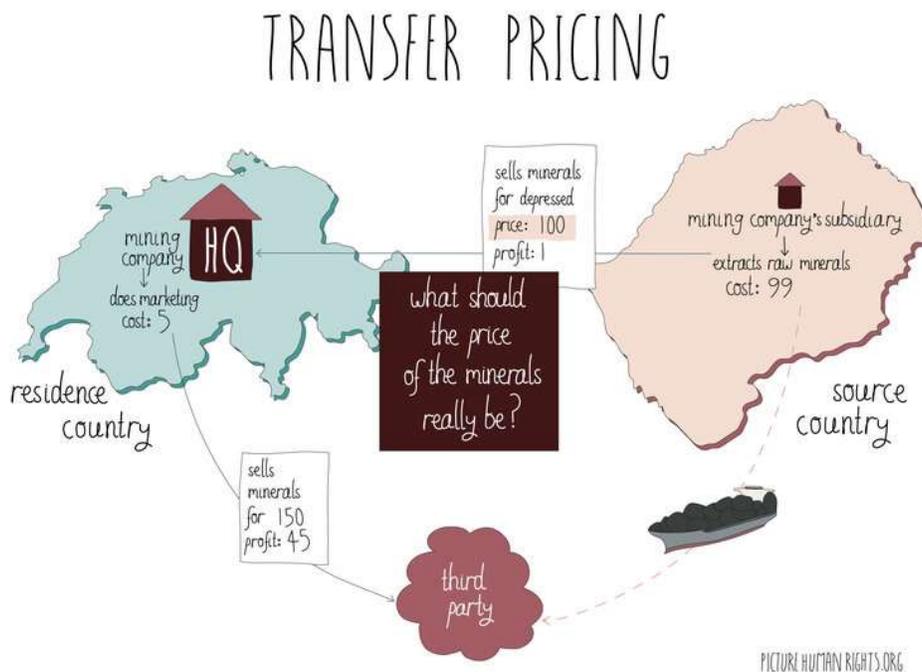
These risk factors are also replicated in the World Bank’s manual on transfer pricing in mining in Africa.¹³⁰ We consider each of these risks, as well as other factors, in the context of Glencore and Mopani below.

4.1 UNDERPRICING COPPER EXPORTS: USE OF MARKETING HUBS

A common structure in many commodity businesses (both mining and agriculture) is to produce or source commodities in a local country and then rely on a group marketing hub to sell the products to offshore customers. In many cases, the physical flow of goods is directly to the third-party customer.

A diagram of a typical marketing hub transactional flow in the mining sector is provided below in Exhibit 19.

Exhibit 19. Typical marketing hub structure¹³¹



Source: Picture Human Rights

While this transaction structure is not in itself problematic, it can present opportunities for multinationals to exploit weaknesses in the international tax

¹³⁰ World Bank Group, "Transfer Pricing in Mining with a Focus on Africa: A Reference Guide for Practitioners," <http://documents.worldbank.org/curated/en/801171485941579048/pdf/112346-REVISED-Dated-Transfer-pricing-in-mining-with-a-focus-on-Africa-a-reference-guide-for-practitioners-Web.pdf>. World Bank also discusses some other risks such as insurance and R&D (research and development) hubs.

¹³¹ Picture Human Rights, "Transfer Pricing," <https://www.picturehumanrights.org/series#/tax/>.

framework. Most commonly, the tax risk is on the price of the sale of copper from the mining company to the marketing company, as shown in the exhibit above.¹³² As this is an intra-group transaction, the price can be manipulated to shift profits (and the tax burden) out of the source country.¹³³ Adding to this, the world's largest commodity trading hubs are in the cities of Geneva, Amsterdam, London, Singapore, Hong Kong, New York, Chicago, and Shanghai, many of which are low tax jurisdictions.¹³⁴ It is estimated that as much as 25 percent of global commodity trade is through the tax haven of Switzerland, the home of Glencore.¹³⁵

In many source countries, the intra-group sale from the mining company to the marketing company is difficult to test for tax administrations for the following reasons:

- The complexity of the mining company makes it an unsuitable tested party for the purposes of benchmarking.
- If benchmarking of the mining company is pursued, there is often a lack of local comparable data, particularly for countries in Africa and South America.
- It is difficult for the tax administration to obtain relevant information on the functional profile of the marketing company to understand what value it adds (if any). The marketing company may be a suitable party to test. However, it is difficult for the tax administration to obtain its financial information, particularly if it is located in a tax haven or secretive jurisdiction.

There are various tax controversies that reveal that such structures are commonplace for mining multinationals, including BHP Billiton's long-running dispute with the Australian Taxation Office (ATO) involving a Singapore marketing hub and Cameco's dispute with the Canadian Revenue Authority involving a Swiss marketing hub.¹³⁶ In fact, Glencore has used the practice in other jurisdictions. In late 2019 the Federal Court of Australia ruled in favor of Glencore in relation to a transfer pricing dispute regarding the sale price of copper concentrate from its subsidiary in Australia to Glencore in Switzerland.¹³⁷ The decision was appealed by the ATO,¹³⁸ though ultimately the High Court of Australia declined to review the appeal.¹³⁹ All of these cases

¹³² In some situations, the marketing company may act as agent and therefore be compensated through a commission (as a percentage of the third-party sales price achieved). In these circumstances, the tax risk is on the size of the commission paid to the group marketing company. Based on the information available, this does not appear to be the structure adopted by Mopani.

¹³³ An example of the effect of underpricing copper exports is included on page 158 in IMF, OECD, UN, and World Bank Group, "The Platform for Collaboration on Tax: A Toolkit for Addressing Difficulties in Accessing Comparables Data for Transfer Pricing Analyses," <https://www.oecd.org/tax/toolkit-on-comparability-and-mineral-pricing.pdf>.

¹³⁴ Berne Declaration, "Commodities: Switzerland's Most Dangerous Business," p. 38, https://www.publiceye.ch/fileadmin/doc/Rohstoffe/2012_PublicEye_Commodities_EN_Book.pdf.

¹³⁵ *Ibid.*, p. 42.

¹³⁶ See for example, PwC, "Commissioner of Taxation v BHP Billiton Limited: An Influential Consideration of Sufficient Influence," <https://www.pwc.com.au/tax/taxtalk/assets/alerts/commissioner-of-taxation-v-bhp-billiton-limited-13022019.pdf>; and Deloitte, "Transfer Pricing Alert: Cameco Wins Landmark Transfer Pricing Case," https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/tax/ca-en-tax-TP-Cameco_AODA.pdf.

¹³⁷ See for example, Jock McCormack and Jun Au, "Australia: Glencore Triumphs over ATO in Landmark Australian Transfer Pricing Case," *International Tax Review*, October 15, 2019, <https://www.internationaltaxreview.com/article/b1hlmcx7bnx418/australia-glencore-triumphs-over-ato-in-landmark-australian-transfer-pricing-case>.

¹³⁸ See for example, Tom McIlroy, "ATO Appeals \$92m Glencore Transfer Price Ruling," *Financial Review*, October 7, 2019, <https://www.afr.com/wealth/tax/ato-appeals-92m-glencore-transfer-price-ruling-20191002-p52wyu>.

¹³⁹ See for example, Derek Barry, "Australian High Court rules against ATO in Glencore tax case," *Northwest Star*, May 28, 2021, <https://www.northweststar.com.au/story/7273476/australian-high-court-rules-against-ato-in-glencore-tax-case/>;

have a common feature: a significant amount of the profits from the mining enterprise were directed to the marketing hub responsible for the commodity sales. While in some cases this may be appropriate, in other cases the marketing hub may add little or no value in the value chain.

There is also evidence that other taxpayers in Zambia's copper sector have similar structures in place. In 2014 an arbitration hearing in the London High Court of Justice revealed that Vedanta Resources, owner of Konkola Copper Mines, had used a Dubai-based subsidiary to buy copper from Konkola's Zambian operations.¹⁴⁰

Mopani's leaked 2011 audit report reveals that more than half of Mopani's copper was sold to Glencore Switzerland, though Glencore has disputed the audit's findings.¹⁴¹ The report also finds evidence that these sales were underpriced, either through complex hedges and forward contracts or by making significant adjustments to the reference price. This is reinforced by the recent litigation that resulted in an additional US\$13 million tax liability for Mopani because of underpricing copper sales to Switzerland. Although the report, and recent litigation, relate to earlier income years, they do shed some light on the practices of Mopani and Glencore.

Zambian policy settings

In the context of suspected transfer mispricing in the copper industry, Zambia introduced the commodity reference price rule in 2008 (discussed in Box 3 above).¹⁴² This rule seeks to prevent underpricing of copper exports by prescribing that, for tax purposes, copper is priced according to the LME reference prices. The rule applies to all intra-group mineral sales of base and precious metals, including copper.

In theory, this rule should ensure that copper exports are priced at their market value. However, there can be challenges in the application of these rules.

Zambia's reference price rule allows for quality adjustments. The LME reference price is based on high-quality copper cathode (grade of 99.98 percent copper), and the price is reduced if the export is of inferior quality. However, according to a Natural Resource Governance Institute (NRGI) study, the ZRA lacks the mineral laboratory facilities to test the quality and grade of mineral exports, making it difficult to verify quality adjustments that companies make.¹⁴³ Without ZRA or government testing capabilities, it is possible that copper companies are grossly understating the quality of the copper and thus continuing to underprice export sales. It appears that

Joseph Boris, "Australia High Court Won't Review Glencore's Transfer Pricing Win," *Law360 Tax Authority*, May 25, 2021, <https://www.law360.com/tax-authority/articles/1388200/australia-high-court-won-t-review-glencore-s-transfer-pricing-win>.

¹⁴⁰ Foil Vedanta, "KCM Hides Profits in Zambia by Transfer Mispricing," <http://www.foilvedanta.org/articles/kcm-hides-profits-in-zambia-by-transfer-mispricing/>.

¹⁴¹ Glencore letter to Oxfam, Response to request for comment, May 28, 2021. Glencore stated that "[t]he draft provisional report contained fundamental factual errors (including in relation to a proper understanding of toll treated material...)...and both Mopani and Glencore have publicly refuted its 'conclusions' on numerous occasions."

¹⁴² The rules were also amended in the 2020 Tax Amendments Act. See EY, "Zambian Government Issues 2020 Tax Amendment Acts," <https://taxnews.ey.com/news/2020-0145-zambian-government-issues-2020-tax-amendment-acts>; and IGF, ATAF, OECD, and ZRA, "BEPS in Mining Case Study: Boosting Zambia's Revenues from the Sale of Manganese and Copper," <https://www.igfmining.org/beeps/wp-content/uploads/2020/07/beeps-mining-zambia.pdf>.

¹⁴³ See for example, Alexandra Readhead, "Special Rules for Commodity Sales. Zambia's Use of the 'Sixth Method,'" NRGI, <https://resourcegovernance.org/sites/default/files/documents/special-rules-for-commodity-sales-zambia-sixth-method.pdf>.

changes may be afoot. In recent months reports suggest that the Zambian Ministry of Mines and Mineral Development will begin sample tests of copper production to protect against undervaluation of copper exports.¹⁴⁴ However, even if testing capabilities are strengthened, it can be a challenge to work out whether quality discounts are arm's length, given there is very little public or subscription-based information on discounts.

Second, as the rule only applies to intra-group sales of copper, it cannot be applied in the situation where a Zambian taxpayer is selling to an independent company. Again, this seems reasonable in principle, as the incentive for price manipulation is negated in independent, commercial transactions. However, many African tax administrations have difficulty in determining whether offshore buyers are independent.¹⁴⁵ Many MNE groups have complex and opaque group structures. Such complexity is only exacerbated when the foreign purchaser is in a non-transparent jurisdiction, as is common in tax havens. In addition, Zambia has a limited network of tax treaties, meaning exchange of tax information mechanisms is also limited.

4.2 INTRA-GROUP DEBT

A common tax planning tool in MNE groups is the use of intra-group debt to maximize interest deductions. The fluidity and fungibility of money mean that MNE groups can easily adjust the mix of debt and equity in a subsidiary. While the group consequences of the subsidiary's mix of debt and equity may be negligible, it can have significant tax consequences for that subsidiary.

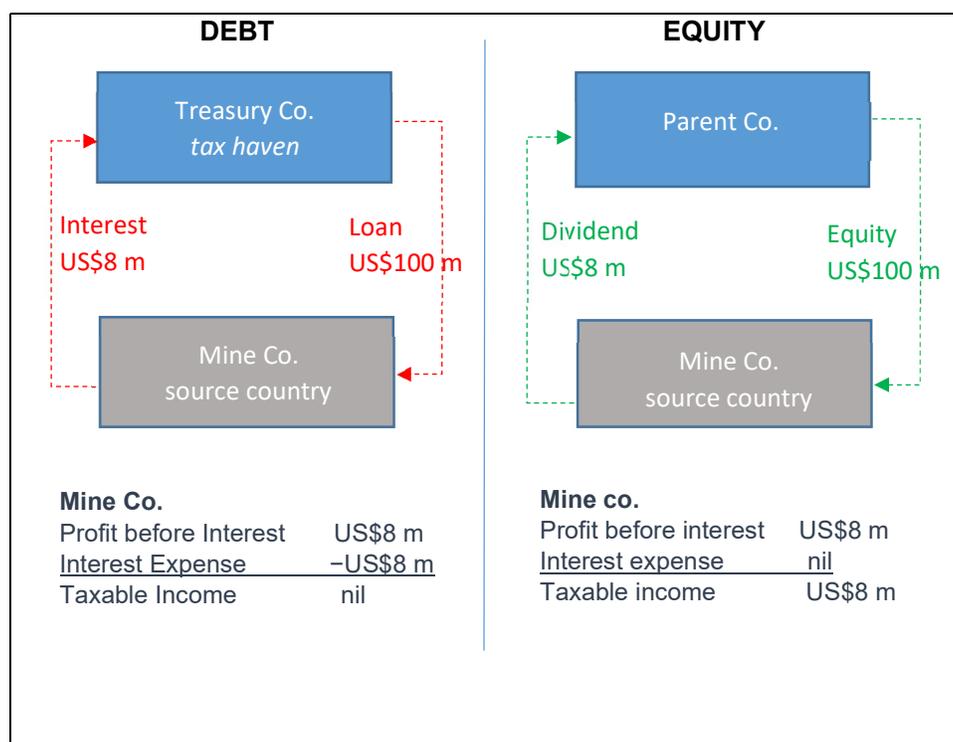
In general, interest on debt is tax deductible, while dividends paid to shareholders are non-deductible. This can create a tax bias towards capitalizing subsidiaries with debt, particularly if the subsidiary is in a high tax jurisdiction such as Zambia. The distortion is also exacerbated if the payee is in a tax haven or is otherwise able to reduce or eliminate tax on the interest income it receives.

An example of excessive interest deductions (through intra-group debt) is provided below in Exhibit 20. In this example, the intra-group debt results in an otherwise profitable subsidiary, Mine Co., reporting no taxable income and paying no tax. By comparison, if the capital were provided in the form of equity, Mine Co. would be taxable. The incentive for groups to capitalize subsidiaries with tax-deductible debt rather than interest is demonstrated in this example.

¹⁴⁴ Reuters, "Zambia Tackles 'Deliberate' Undervaluation of Mineral Exports," June 10, 2020, <https://www.reuters.com/article/us-zambia-mining/zambia-tackles-deliberate-undervaluation-of-mineral-exports-idUSKBN23H1TQ>.

¹⁴⁵ Readhead, "Special Rules for Commodity Sales."

Exhibit 20. Intra-group debt example vs. equity example



It is not clear from the information available whether Glencore has used this approach to reduce the tax burden of Mopani. However, research shows that thin capitalization (through intra-group debt) is prevalent in Zambia's mining sector and results in less-than-optimal tax revenues.¹⁴⁶

Further, in other jurisdictions, there is evidence to support that Glencore has capitalized subsidiaries with a significant level of intra-group debt. Glencore's majority-owned Canadian subsidiary, Katanga Mining Ltd., whose principal asset is the Kamoto Copper Company mine in DRC, had over US\$6.8 billion in intra-group debt on December 31, 2018 compared to just US\$6.1 billion in total assets.¹⁴⁷ This is despite Katanga Mining Ltd. reporting gross losses for several years, and debt accruing at the Kamoto Copper Company level in DRC as well, indicating that equity may have been a more appropriate form of capitalization given there was no ability for Katanga to service the debt with earnings.¹⁴⁸

¹⁴⁶ Christian Chileshe and Henry Chata, "Thin Capitalisation and Illicit Financial Flows in Africa – A Case of Zambia's Mining Sector," <http://iffoadatabase.trustafrica.org/iff/Zambia%20TrustAfrica.pdf>.

¹⁴⁷ 2018 Financial Statements, previously available at <http://www.katangamining.com/investor-relations/financial-results/2018.aspx> (on file with authors).

¹⁴⁸ Losses were reported for all years from 2015–2019. In November 2019 Glencore announced that it would swap approximately US\$5.8 billion of debt for new equity in Katanga. See for example, *Mining Technology*, "Glencore and Katanga Reach Deal on \$5.8bn Rights Issue," November 8, 2019, <https://www.mining-technology.com/news/glencore-katanga-reach-deal/>.

Zambian policy settings

The potential for tax avoidance through excessive interest deductions has long been recognized in international fora. Broadly, policy measures could address two elements of limiting excessive interest deductions:

- Limiting the quantum of debt (for example by limiting the amount of intra-group debt a taxpayer can obtain);
- limiting the cost of debt (for example by limiting the interest rate that is applied to the debt).

Broad transfer pricing rules, such as those contained in Zambia's Income Tax Act, have the potential to deal with both issues by ensuring the quantum and cost of debt is arm's length. However, there are significant challenges in applying transfer pricing rules to intra-group transactions, particularly for less-experienced tax administrations. Audits of intra-group debt are often factually detailed and time consuming. International guidance on the issue is limited.

Recognizing these challenges, many countries have implemented thin capitalization rules in the last 30 years. These rules prescribe a fixed ratio of debt to equity that limits the quantum of the taxpayer's debt, thereby addressing the first element above. Zambia's Income Tax Act includes thin capitalization rules for taxpayers in the mining sector, prescribing a debt-to-equity fixed ratio of 3.1.

In recent years, many countries have recognized that thin capitalization rules can be ineffective in limiting excessive interest deductions.¹⁴⁹ The rules are easy to manipulate (by injecting more equity), do not address the cost of the debt, and do not reflect independent commercial lending criteria.¹⁵⁰ A Zambian study, for example, revealed that most copper companies deliberately included lists of reserves and property revaluations as part of efforts to create a higher equity value and therefore create additional capacity for debt under thin capitalization rules.¹⁵¹

As part of the OECD's BEPS project, Action 4 recommended countries replace thin capitalization rules with interest deductibility rules based on a fixed ratio of interest to profit.¹⁵² These rules better reflect that a company's interest deductions must be at commercial levels when compared to profit and prevent taxpayers from eroding most or all of their pre-interest profits through excessive interest deductions. ATAF has endorsed these rules and published a suggested approach to drafting interest deductibility rules,¹⁵³ while the IGF has released its own report on excessive interest deductions in the mining sector.¹⁵⁴ As discussed above, it is pleasing to see that Zambia has recently introduced interest deductibility rules in line with the BEPS Action 4 approach.

¹⁴⁹ See for example, OECD, "BEPS Action 4: Limitation on Interest Deductions," <https://www.oecd.org/tax/beps/beps-actions/action4/>.

¹⁵⁰ See for example, ATAF, "Suggested Approach to Drafting Interest Deductibility Legislation."

¹⁵¹ Chileshe and Chata, "Thin Capitalisation," p. 34.

¹⁵² Profit was generally recommended to be earnings before interest, tax, depreciation, and amortization.

¹⁵³ See ATAF, "Suggested Approach to Drafting Interest Deductibility Legislation."

¹⁵⁴ See IGF and OECD, "Limiting the Impact of Excessive Interest Deductions on Mining Revenue," <https://www.oecd.org/tax/beps/limiting-the-impact-of-excessive-interest-deductions-on-mining-revenue-oecd-igf.pdf>.

4.3 MANAGEMENT, TECHNICAL, AND PROCUREMENT SERVICES

Another common transfer pricing issue in the mining sector is excessive fees for intra-group services such as management, technical, and procurement services. The value and extent of these services can easily be overstated by MNEs, resulting in the erosion of profits for the local taxpayer. Further, they can be challenging to audit from a transfer pricing perspective, as it can be difficult to establish the benefit conferred by services from a management or procurement hub.

The risk relating to procurement activities in the mining sector is particularly acute, given the need for specialized, high-value offshore equipment and machinery. It is common for MNE groups to use procurement hubs to source such equipment. The equipment is either sold on to mining subsidiaries or, where the procurement hub acts as an agent, a fee for the procurement service is charged to the taxpayer. In some cases, the procurement hub adds little or no value—providing a purely administrative function—yet may still charge a significant markup based on the value of the equipment.¹⁵⁵ Low or zero import duties on imported goods may exacerbate the incentive to overstate costs.¹⁵⁶

Though Glencore has disputed some of the findings,¹⁵⁷ the 2011 leaked audit report reveals that many of Mopani's costs may have been overstated. A comparison of actual costs and cost indices for the three-year period suggested that actual costs in 2007 were US\$381 million greater than what could be reasonably expected. One explanation could be the use of intra-group fees (such as management and procurement fees) to artificially increase costs. This use of fees is consistent with broader financial transaction trends analyzed by the Zambian government, which show that large or unusual remittance of funds to offshore companies, particularly companies in tax havens, is becoming more common and of increasing concern.¹⁵⁸

Zambian policy settings

Broad transfer pricing rules, such as those contained in Zambia's Income Tax Act, can be used to challenge the price of management or procurement services. However, as discussed above, they can be difficult to administer, and it can be difficult to determine the arm's length price.

¹⁵⁵ See for example, A. Readhead, "Toolkit for Transfer Pricing," Transaction Type 3, p. 35.

¹⁵⁶ See for example, IGF and OECD, "Tax Incentives in Mining: Minimising Risks to Revenue," <http://www.oecd.org/tax/beps/tax-incentives-in-mining-minimising-risks-to-revenue-oecd-igf.pdf>.

¹⁵⁷ Glencore letter to Oxfam, Response to request for comment, May 28, 2021. For instance, Glencore stated that "[t]he draft provisional report contained fundamental factual errors (including in relation to a proper understanding of toll treated material...)... and both Mopani and Glencore have publicly refuted its 'conclusions' on numerous occasions."

¹⁵⁸ Zambia Financial Intelligence Centre, "Trends Report 2016," <https://www.fic.gov.zm/79-fic-news/98-trends-report-2016>.

In their suggested approach to drafting transfer pricing rules, ATAF includes a discussion of two potential approaches to deal with excessive management fees.

The first is to implement a management fee cap based on a percentage of turnover (such as 3 percent of revenue). This approach would act as a relatively arbitrary anti-avoidance rule. It is not commonly used in other countries, nor is it specifically endorsed by the OECD or the UN.

In relation to procurement activities, another approach is to insist that the local taxpayer must furnish the original third-party invoice of substantial equipment in order to claim depreciation deductions. This approach is designed to target the situation where equipment bought by the group is sold to the African subsidiary at an inflated price, thereby increasing the depreciation deduction. Generally, it would otherwise be difficult for a tax administration to test whether the intra-group sale was at arm's length, particularly if the equipment is bespoke. By having the third-party purchase price, the tax administration is in a better position to determine whether the price has in fact been unnecessarily inflated.

As at the time of writing this report, Zambia has not adopted either of these rules.

4.4 TREATY SHOPPING AND RELATED TREATY BENEFITS

In general, tax treaties are intended to prevent double taxation, which occurs when the same income is taxed by two or more nations. However, as noted by the OECD, in recent decades such treaties have also given rise to treaty abuse and treaty shopping.¹⁵⁹

Treaty shopping describes attempts by taxpayers (particularly MNEs) to route income or transactions through intermediary jurisdictions to obtain treaty benefits. This practice occurs when the taxpayer is not actually resident in or otherwise connected to the intermediary jurisdiction. Such strategies undermine tax sovereignty by claiming treaty benefits in situations where these benefits were not intended to be granted, thereby depriving jurisdictions of tax revenues.

The potential for treaty abuse and treaty shopping is only exacerbated by treaties with tax havens. Such treaties often include favorable rates and concessions and allow taxpayers to park cash, income, and profits in those tax havens. Rather than preventing double taxation as intended, many of these treaties actually result in double non-taxation.

¹⁵⁹ OECD, "BEPS Action 6: Prevention of Tax Treaty Abuse," <https://www.oecd.org/tax/beps/beps-actions/action6/>.

At the time of research, Zambia had signed 20 double tax agreements. Zambia has four treaties with tax havens: Switzerland, Ireland, the Netherlands, and Mauritius. However, the Mauritius treaty was recently cancelled.¹⁶⁰ These treaties afford generous concessions such as reduced withholding tax rates and more favorable source rules for the MNE. Up until the treaty was renegotiated with effect from 2019, the treaty with Switzerland had nil withholding rates on dividends, interest, royalties, and management fees, meaning Zambia had no right to source taxation over these amounts. Importantly, the revised tax treaty with Switzerland does include exchange of information for the tax administrations, which should assist Zambia in accessing information from people and companies resident in Switzerland.¹⁶¹ A summary of the withholding tax provisions in each treaty is included below in Exhibit 21.

Exhibit 21. Treaty withholding tax rates¹⁶²

Item	Switzerland treaty (2019)	Switzerland treaty (1954)	Netherlands treaty	Mauritius treaty (cancelled)	Ireland treaty	Zambian domestic law
Dividends	5%–15%	Nil	5%	5%	7.5%	20%
Interest	5%	Nil	10%	10%	10%	20%
Royalties	Nil	Nil	10%	5%	8% or 10%	20%
Management fees	Nil	Nil	Nil	Nil	Nil	20%

For example, it may have been possible for Glencore to route intra-group debt through Switzerland. Glencore would have benefitted from 5 percent (previously nil) withholding taxes on the interest payments, while at the same time eroding the profits and tax payable by Mopani in Zambia. This may not have been necessary during the term of the development agreement, as withholding tax rates were reduced to nil anyway.

Another example is that several of the treaties do not include a source rule for services performed in Zambia, meaning that a Dutch subsidiary could potentially perform significant mining/engineering services on the Mopani mine in Zambia and not be taxable in Zambia on the income earned from those activities.¹⁶³

A 2018 World Bank study found that treaties signed by sub-Saharan African countries with investment hubs, such as Mauritius, lead to significant revenue losses for those countries, with no associated investment benefits.¹⁶⁴ Along with favorable tax rules such as no capital gains tax and no withholding taxes,

¹⁶⁰ Will Fitzgibbon, "Zambia Becomes Second Nation."

¹⁶¹ Glencore notes that it "discloses its transfer pricing affairs and country-country reports to tax administrations, according to domestic and international law." Glencore letter to Oxfam, Response to request for comment, May 28, 2021.

¹⁶² EY, "Worldwide Corporate Tax Guide 2019," p. 1872, https://www.ey.com/en_gl/tax-guides. Rates are lowest possible rates. Ireland rates per Orbitax, "New Tax Treaty between Ireland and Zambia has Entered into Force," <https://www.orbitax.com/news/archive.php/New-Tax-Treaty-between-Ireland-15954> following renegotiation in 2015.

¹⁶³ So long as they don't have a physical presence (i.e., permanent establishment).

¹⁶⁴ Sebastian Beer and Jan Loeprick, "The Cost and Benefits of Tax Treaties with Investment Hubs Findings from Sub-Saharan Africa" (Policy Research Working Paper 8623, World Bank, Washington DC, 2018), <http://documents.worldbank.org/curated/en/325021540479671671/pdf/WPS8623.pdf>.

Mauritius has negotiated tax treaties with 18 African countries, most of which significantly reduce withholding taxes and source taxation rights.¹⁶⁵ The study also noted that the routing of foreign investment through these hubs became more common once tax treaties were in place. However, the study suggests that treaties with these hubs do not actually encourage more foreign investors but are just another tax planning tool that existing and prospective foreign investors can take advantage of. The Mauritius Leaks report, published by the International Consortium of Investigative Journalists (ICIJ) in 2019, reveals the extent to which large multinationals funnel African investment through Mauritius to take advantage of tax treaties and other favorable tax rules. The leaks were a catalyst for Senegal to rip up its treaty with Mauritius in 2020. The agreement, signed in 2004, was estimated to have cost Senegal US\$257 million in lost tax revenue in the 16 years since it was signed.¹⁶⁶ In recent months, Zambia has also followed suit, cancelling its treaty with Mauritius.

¹⁶⁵ See Mauritius Revenue Authority, "Double Taxation Agreements," <https://www.mra.mu/index.php/taxes-duties/international-taxation/double-taxation-agreements>.

¹⁶⁶ See Will Fitzgibbon, "Senegal Nixes 'Unbalanced' Tax Treaty with Mauritius," ICIJ, May 26, 2020, https://www.icij.org/investigations/mauritius-leaks/senegal-nixes-unbalanced-tax-treaty-with-mauritius/?utm_campaign=Sprout&utm_content=https://www.icij.org/inve&utm_medium=social&utm_source=facebook&fbclid=IwAR11E0s_crml5mAdtFkHSIBs7IZXfwhE1ooppwfQIZUOyhZTeoTjwl8kUUM.

5. QUANTIFICATION OF POTENTIAL TAX REVENUE LOSS UNDER EXISTING INTERNATIONAL TAX PRINCIPLES

In this section the research considers how much profit Glencore may potentially have shifted out of Zambia over the period in question (2011–2018) under current rules for international taxation rights. In doing so, the research considers the potential tax loss to the Zambian state that results.

To be clear, these are estimations of potential tax losses; the report does not assert that there was a specific underpayment of tax. Indeed, it should be noted that the Zambian Revenue Authority (ZRA), completed a comprehensive tax audit of Mopani for the years 2012-17 in March 2021. Some adjustments were made (not uncommon for large enterprises like Mopani), and Glencore has indicated that no additional tax was required to be paid for any of these years,¹⁶⁷ though this information has not been publicly verified.

The approach contained in this section applies the transfer pricing rules as they currently stand. That is, profits of an MNE group are allocated in accordance with the arm's length principle. In other words, all intra-group transactions should be arm's length, ensuring the underlying commercial profits in Zambia are not manipulated by intra-group transactions.

An important first step in the transfer pricing analysis is to prepare a functional analysis. The purpose of a functional analysis is to properly understand and describe the nature of the business and the transactions in question.

5.1 METHOD 1: COMPARABLE UNCONTROLLED PRICE METHOD

This method focuses on the potential for Mopani to underprice the sales of copper to other Glencore Group members.¹⁶⁸ Suppressing the copper

¹⁶⁷ Glencore letter to Oxfam, Response to request for comment, May 28, 2021. Glencore also claims that as of March 2021, the Zambia Revenue Authority "owed Mopani almost \$500 million in legally due VAT refunds, built up over the past decade."

¹⁶⁸ By applying the transfer pricing comparable uncontrolled price (CUP) method, which focuses on whether a specific transaction or set of transactions is arm's length. This is achieved by comparing the price of the intra-group transaction (in this case, copper exports) with the price of independent transactions or market reference prices for the same product. While details of every transaction undertaken by Mopani are not available, we can apply this method at the whole-of-entity level, based on Mopani's annual production and sales data.

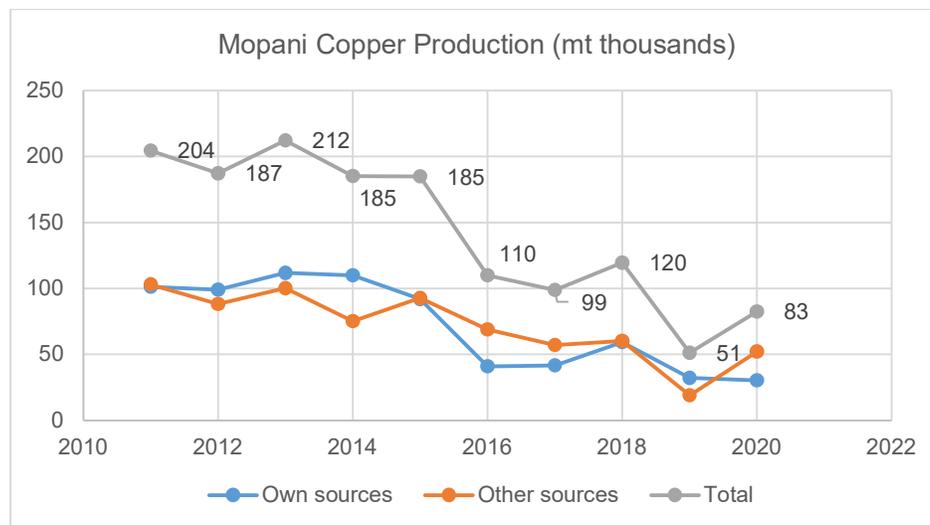
revenue of Mopani would reduce the profits (and tax) in Zambia and increase the profits of other group members.

Under this method, Mopani’s copper sales are tested by comparing them to an independent (or “uncontrolled”) reference price. The reference price may be the price of an independent sale from Mopani to a third party, the price of a sale between two third parties who are independent of each other, or quoted market prices.

There are several examples of mining companies using group marketing companies in low-tax jurisdictions such as Singapore, Switzerland, and Dubai to funnel sales of minerals to third parties and minimize tax in source countries.¹⁶⁹ In fact, the leaked 2011 audit report suggests that all of Mopani’s copper was sold to another Glencore Group member located in the tax haven of Switzerland,¹⁷⁰ and the recent Zambian litigation affirmed tax assessments raised by ZRA that were based on Mopani underpricing copper exports.

The method involves estimating the value of Mopani’s production each year (using the average annual copper price) and comparing the result with the actual gross revenue reported by Mopani. The first step in the application of this method was to obtain Mopani’s production volumes for the years 2011–2018. See Exhibit 22.

Exhibit 22. Mopani copper production¹⁷¹



The second step is obtaining an appropriate reference price for copper. The average high-grade copper price was obtained from the LME. The LME is the leading market for industrial metals trading.

¹⁶⁹ See for example, PwC, “Commissioner of Taxation v BHP Billiton Limited.”

¹⁷⁰ Cobham, “Swiss-Plotation.” Glencore notes that “both Mopani and Glencore have publicly refuted” the findings of the leaked audit report “on numerous occasions.” Glencore letter to Oxfam, Response to request for comment, May 28, 2021.

¹⁷¹ Sourced from Glencore, “Production Reports,” <https://www.glencore.com/investors/reports-results>.

Box 6. Adjustments for freight costs

There is no publicly available information on whether Mopani sells copper to other group members on CFR/CIF¹⁷² international commercial terms (Incoterms) or FOB¹⁷³ Incoterms (or some other basis). CFR and CIF Incoterms indicate that the seller (Mopani) would generally be responsible for freight costs to the destination port or customer. FOB Incoterms dictate that the seller is only responsible for freight costs to the port of origin, and the buyer is responsible for freight costs thereafter.

The LME price is based on physical settlement terms which, broadly, reflect the supplier covering freight costs in the same way as dictated by CFR and CIF Incoterms. If Mopani's sales are on CFR or CIF Incoterms, then it is reasonable to conclude that the LME is an appropriate reference price, with no adjustment for freight costs.

However, if Mopani sells on FOB basis, then an adjustment may be necessary to deduct the costs of freight from the LME price. The freight costs would be borne by the related party or customer and not the supplier, which is Mopani.

Based on our understanding of the Zambian copper industry, a reasonable assumption for freight costs would likely be in the range of US\$200–\$300 per ton. Therefore, we have conservatively included a deduction from the LME price of US\$300 per ton. See Exhibit 23.

Exhibit 23. Copper prices (annual averages)¹⁷⁴

Year	LME price ¹⁷⁵ (US\$/mt)	LME price less US\$300 freight adjustment (\$/mt)
2011	8,871	8,571
2012	8,015	7,715
2013	7,322	7,022
2014	6,862	6,562
2015	5,494	5,194
2016	4,863	4,563
2017	6,166	5,866
2018	6,523	6,223

The adjusted LME metal price was applied to Mopani's annual copper production to determine a counterfactual revenue for each year. In doing so, this method assumes that Mopani earned the adjusted LME reference price

¹⁷² Costs and freight (CFR) and costs, insurance, and freight (CIF).

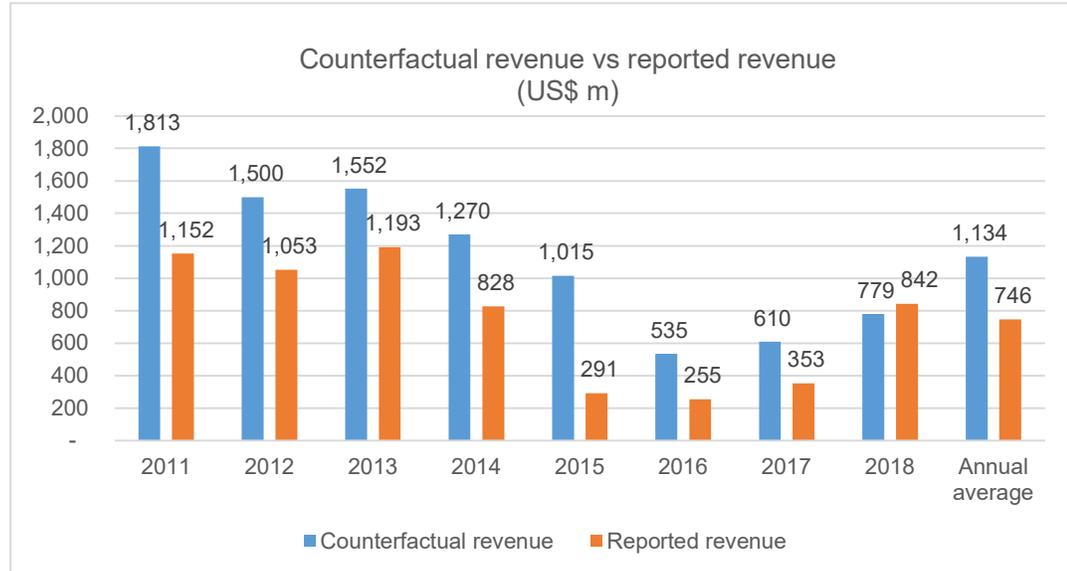
¹⁷³ Free on board (FOB).

¹⁷⁴ This is therefore not necessarily reflective of the average spot price achieved. As a sense-check, Glencore publishes the average annual price sales price (third party) achieved for each metal and mineral, including copper, in its production reports. For completeness, the two prices were compared. In every year except 2018, the average annual LME price was within 1 percent of Glencore's reported third-party sales prices, indicating it is a reliable measure of Glencore's overall copper production values.

¹⁷⁵ Per Statista, "Average Annual Market Price of Copper from 2009 to 2019," <https://www.statista.com/statistics/533292/average-price-of-copper/>.

for its sales of copper (whether sold to independent customers or to other group members). See Exhibit 24.

Exhibit 24. Counterfactual revenue¹⁷⁶



As shown above, the counterfactual revenue is higher than Mopani’s reported revenue in every year except for 2018. This finding suggests that the price achieved by Mopani for its copper may be significantly suppressed, likely because the copper has been sold to another Glencore Group member at lower-than-market prices. On average, this method estimates that the revenue is understated by US\$388 million per year.

The amount by which our estimate suggests revenue is understated is then used to determine the counterfactual profit, which is the reported profit plus the amount by which we estimate the revenue was understated. The tax impact is calculated as the difference between the counterfactual profit and the actual profit, multiplied by the mining income tax rate in Zambia.¹⁷⁷ See Exhibit 25.

¹⁷⁶ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018; ZCCM-IH, “Annual Reports.”

¹⁷⁷ The income tax rate was 30 percent for the period 2011–2018. We have ignored the possible impact of the development agreement, which may have resulted in a lower income tax rate (25 percent) for some of these years. It is unclear how long, or to which years, this concessional tax rate actually applied to Mopani.

Exhibit 25. Method 1 results

Year	Reported profit ¹⁷⁸ (US\$ m)	Counterfactual profit (US\$ m)	Difference (US\$ m)	Tax impact (US\$ m)	Immediate tax impact (US\$ m)
2011	111	772	661	198	198
2012	31	478	447	134	134
2013	36	395	359	108	108
2014	-8	434	442	133	130
2015	-285	439	724	217	132
2016	-180	100	280	84	30
2017	-290	-33	257	77	-
2018	-723	-785	-63	-19	-
<i>Annual average</i>	-163	225	388	117	91

As shown above, our estimate suggests that Mopani's profits are understated by US\$388 million per year. This amount has an annual average tax impact of US\$117 million per year. In several of the years, Mopani had significant losses. As taxes are only payable on profits, a distinction has been made between the impact of reducing losses to nil (which would have no immediate tax impact) and the impact of Mopani earning a profit and paying tax.¹⁷⁹ When focusing only on the net additional taxes that would be payable (rather than a reduction of carried losses that would no longer offset future profits), the "immediate tax impact" would be US\$91 million per year.

5.2 METHOD 2: TRANSACTIONAL NET MARGIN METHOD

This method benchmarks the profits of Mopani by comparing them to the profits of other copper miners.¹⁸⁰ The underlying rationale of this method is that Mopani should be earning profits that are, broadly, comparable to other copper miners with a similar operational profile.

Because Mopani is a member of a multinational group, there is the potential that it uses intra-group transactions to shift profits out of Zambia and into other jurisdictions. Using an independent benchmark of profits allows us to

¹⁷⁸ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018; ZCCM-IH, "Annual Reports."

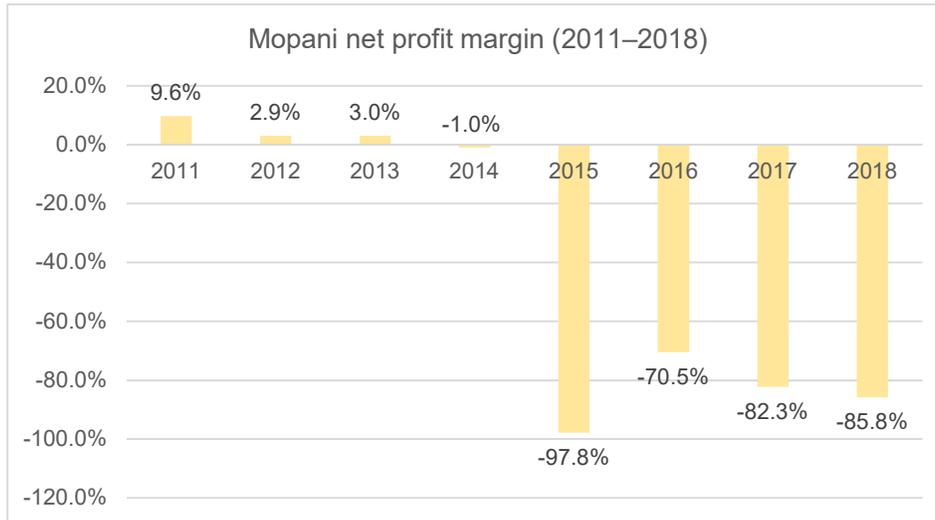
¹⁷⁹ For the purposes of this analysis, we have assumed there were no pre-2011 carried-forward tax losses that could have been applied in 2011 or later years.

¹⁸⁰ The transactional net margin method (TNMM) method compares the profit margin of the tested party (i.e., Mopani) with the profit margins of comparable independent entities with similar operations. In doing so, it benchmarks the profits of Mopani with independent comparable companies. This method, therefore, is focused on determining the appropriate profitability for an entity with Mopani's operational profile.

determine whether Mopani's profit levels are consistent with other independent companies that are unaffected by the potential for profit shifting.

As shown below in Exhibit 26, Mopani's profit margins drastically deteriorated from 2011 through to 2018.

Exhibit 26. Mopani profit margin¹⁸¹



As outlined in the research methodology in Appendix 2, a set of ten companies were identified as benchmarks. Each company's financial statements were reviewed, and their profit margins were collated. (It should be noted that Glencore has written that it disagrees that Mopani is indeed comparable with the entities selected on account of multiple factors. These factors and the company's position are discussed further in Appendix 2,)

As we only have information on Mopani's net profit margin (net profit as a percentage of sales), the same profit-level indicator was obtained from the ten companies.¹⁸² A statistical analysis was applied, and the results are shown below in Exhibit 27.

¹⁸¹ Calculated as net profit divided by sales revenue.

¹⁸² Usually a transfer pricing analysis would benchmark the operating profit margin (such as earnings before interest and tax (EBIT)). This reflects that the interest expense and tax expense can, rightly, vary between entities for reasons unrelated to the overall functional profile of the entities. However, because the operating margin for Mopani was not available, it was considered most appropriate to only use the same profit level indicator that we had for Mopani.

Exhibit 27. Comparable financial results, net profit margin

	2018	2017	2016	2015	2014	2013	2012	2011
Number of companies	10	10	10	10	9	9	9	9
Minimum (%)	1.3	-7.2	-32.6	-76.1	-5.6	1.5	-5.9	11.2
First quartile (%)	10.1	7.5	-18.1	-28.0	7.6	11.5	8.8	25.3
Median (%)	14.2	11.8	4.7	-24.8	13.6	14.9	23.5	27.5
Third quartile (%)	17.9	14.7	9.2	-8.7	23.0	20.8	29.0	35.1
Maximum (%)	34.4	25.2	14.4	21.7	28.0	27.8	63.4	56.4
Mopani profit margin (%)	-85.8	-82.3	-70.5	-97.8	-1.0	-3.0	2.9	9.6

The OECD guidelines and UN practical manual recognize that it is usually difficult to identify a precise arm's length price. Hence, these guidelines, and many countries, consider the use of statistical analysis appropriate to determine an arm's length range. In general, this range is from the first quartile to the third quartile of the observed comparable results. For example, the arm's length range in 2018 would have been a profit margin between 11.7 percent and 20.2 percent. As Mopani's profit margin was -85%, it fell outside the arm's length range and would be adjusted to a point within the range. In general, adjustments are made to the median of the range unless there are reasons to select a different point in the range.

Based on these results, the profits of Mopani have been recomputed to ensure it earns a net profit margin equal to the median of the benchmark set. The results are shown below in Exhibit 28.

Exhibit 28. Method 2 results

Year	Reported profit (US\$ m) ¹⁸³	Counterfactual profit (US\$ m)	Difference (US\$ m)	Tax impact (US\$ m)	Immediate tax impact (US\$ m)
2011	111	317	206	62	62
2012	31	247	216	65	65
2013	36	178	142	43	43
2014	-8	113	121	36	34
2015	-285	-72	213	64	-
2016	-180	12	192	58	-
2017	-290	42	332	100	-
2018	-723	119	842	253	20
<i>Annual average</i>	-163	119	283	85	28

As shown above, our estimate suggests that Mopani's profits are understated by an average of US\$283 million per year. This understatement has an annual tax impact of US\$85 million per year or an immediate tax impact of US\$28 million per year.

This method has the advantage that if global industry issues materialize, these should be reflected in the results of the comparable entities. For example, the arm's length range in 2015 was -28.0 percent to -8.7 percent, with a median of -24.8 percent. This range indicates that it is reasonable for a copper mining company to have made a loss in 2015 because of global industry issues such as the fall in copper prices. Hence, while Mopani's profit was recomputed to the median, it has still resulted in a loss in 2015.

Compared with the CUP approach, this approach results in much more consistent profits across the eight-year period. This method assumes that Mopani should be earning profits consistent with industry peers, and there is therefore much less volatility in profits. The CUP method, which resulted in no profits in 2017 and 2018, is more specific to the individual circumstances of Mopani.

¹⁸³ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018; ZCCM-IH, "Annual Reports."

6. QUANTIFICATION OF POTENTIAL TAX REVENUE LOSS UNDER FORMULARY APPORTIONMENT PRINCIPLES

In this section we consider, quantitatively, how much of Glencore's profit would be attributed to Zambia for tax purposes over the period in question (2011–2018) under two alternative allocations of profit using formulary apportionment (FA) methods. These methods are beyond the scope of current international tax rules. However, they have been discussed in the context of potential reforms to the international tax and transfer pricing rules.

Formulary apportionment is a method for allocating the profits earned by MNE groups across the various tax jurisdictions in which the group has a taxable presence. It ignores the longstanding separate entity approach embodied in the arm's length principle, which would usually mean that each MNE subsidiary is taxed as separate and independent entity. Formulary apportionment simply takes the total profit of the worldwide group (or business line) and allocates it across jurisdictions based on a pre-prescribed formula. It is a simple alternative to the complexities and nuances of the existing principles contained in transfer pricing rules.

These methods have been applied to consider the potential lost tax revenue for the Zambian state, should the rules be formulated in such a way.

6.1 METHOD 3: FORMULARY APPORTIONMENT (ONE FACTOR)

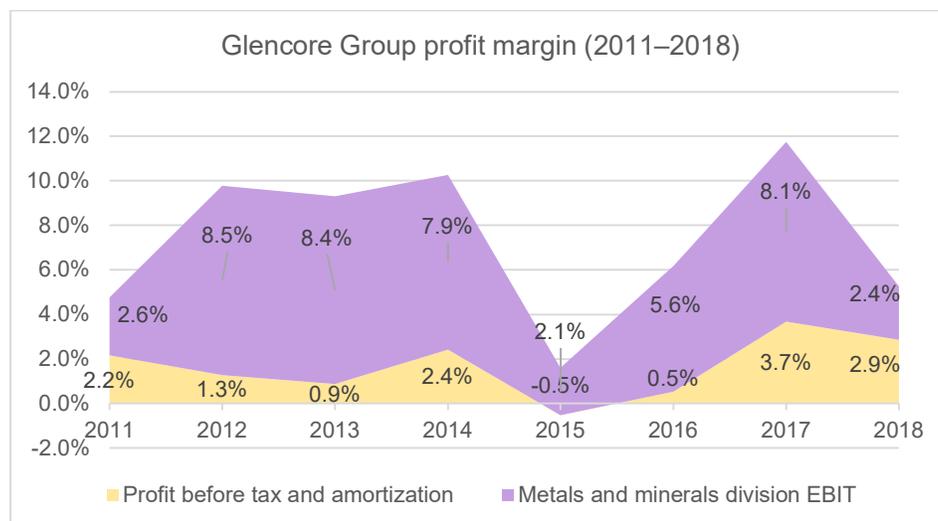
Method 3 was applied to estimate the counterfactual profits of Mopani by applying formulary apportionment using the single factor of sales. The total profits of the Glencore Group are allocated across its subsidiaries in proportion to their share of sales revenue.¹⁸⁴ In other words, it assumes that Mopani would have earned the same profit margin (calculated as profit divided by revenue) as the Glencore global group.

A more accurate application of this approach is to apply it to the profits generated by Glencore's metals and minerals division. As Glencore is a diversified global business, this application isolates the Glencore business line that comprises activities most similar to the business activities of Mopani.

¹⁸⁴ See for example, Kimberly A. Clausing and Reuven S. Avi-Yonah, "Reforming Corporate Taxation in a Global Economy: A Proposal to Adopt Formulary Apportionment" (Brookings Institute, Washington, DC, 2007).

The global profit margin of the Glencore Group and of the metals and minerals division is shown below in Exhibit 29.

Exhibit 29. Global profit margins¹⁸⁵



This graph shows that Glencore’s metals and minerals division has earned higher profit margins than the consolidated Glencore Group. Based on this data, the profits of Mopani have been recomputed to ensure it earned a net profit margin equal to Glencore’s metals and minerals division.¹⁸⁶ The results are shown below in Exhibit 30.

Exhibit 30. Method 3 results

Year	Reported profit ¹⁸⁷ (US\$ m)	Counterfactual profit (US\$ m)	Difference (US\$ m)	Tax impact (US\$ m)	Immediate tax impact (US\$ m)
2011	111	30	-81	-24	-24
2012	31	89	58	18	18
2013	36	100	64	19	19
2014	-8	65	73	22	20
2015	-285	6	291	87	2
2016	-180	14	194	58	4
2017	-290	28	319	96	9
2018	-723	20	743	223	6
<i>Annual average</i>	-163	44	208	62	7

¹⁸⁵ Group profit margin calculated as profit before tax and impairments as a percentage of revenue. Divisional profit margin calculated as EBIT as a percentage of revenue.

¹⁸⁶ Based on multiplying Mopani’s revenue by the profit margin of Glencore’s mineral and metals division for the year in question.

¹⁸⁷ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018; ZCCM-IH, “Annual Reports.”

As shown above, our estimate suggests that Mopani's profits could be understated by US\$208 million per year under formulary apportionment rules. This understatement of profits would have an annual tax expense impact of US\$62 million per year or an immediate tax impact of US\$7 million per year.

The functional analysis contained in Appendix 1 suggests that Mopani's activities were integral in the context of Glencore's business of copper mining, processing, and marketing (sales) during the period. Mopani appears to own key assets, which are the mining rights, and the plant and equipment, and undertakes many of the key functions. Therefore, in the context of the copper value chain, it seems reasonable that Mopani should be earning profit margins that are equal to or greater than other group entities participating in the same or similar value chains. This method achieves that outcome.

6.2 METHOD 4: FORMULARY APPORTIONMENT (THREE FACTOR)

Method 4 was applied to estimate the counterfactual profits of Mopani by applying formulary apportionment using three equally weighted factors: sales, net assets, and the number of employees and contractors. The total profits of the Glencore Group are allocated across its subsidiaries in proportion to each subsidiary's share of sales, net assets, and employees/contractors.

There are various views with respect to the most appropriate formulary apportionment factors, particularly in extractives industries. The IMF¹⁸⁸ recognizes that many apportionment factors are designed as proxies for economic activity, often distinguishable into two groups: supply or production factors, and demand or sales factors. The selection of factors should therefore reflect both elements of supply and demand. Assets and employees (amongst others) are recognized as production factors, while sales is recognized as a demand factor. Others have discussed more specific production factors¹⁸⁹ in the context of mining. For the purposes of interstate allocation of corporate income taxes, Alaska uses an "extraction factor" (i.e., total production) for domestic tax allocations. However, it may be problematic to apply direct production factors in a diversified mining and commodities group (such as Glencore) where the value of production varies significantly

¹⁸⁸ Ruud A. de Mooij, Li Liu, and Dinar Prihardini, "An Assessment of Global Formula Apportionment" (IMF Working Paper No. 19/213, IMF, Washington DC, 2019).

¹⁸⁹ See for example, Alexandra Readhead, "The Application of Global Tax Reforms to the Extractive Industries," <https://www.alexandreadhead.com/blog/2019/6/20/the-application-of-global-tax-reforms-to-the-extractive-industries>nsbp. For the purposes of US state taxation of corporate profits, several states generally use property and payroll factors in addition to a sales factor to calculate the portion of corporate income taxable by that state, and some states also incorporate specific factors for the extractive industries, like Alaska's extraction factor which measures production. Federation of Tax Administrations, "State Apportionment of Corporate Income," January 2021, <https://www.taxadmin.org/assets/docs/Research/Rates/apport.pdf>. Erika Dayle Siu, Sol Picciotto, Jack Mintz and Akilagpa Sawyerr, "Unitary Taxation in the Extractive Industry Sector (International Centre for Tax and Development Working Paper 35, Institute of Development Studies, May 2015), <https://assets.publishing.service.gov.uk/media/57a08998ed915d622c0002cd/ICTD-WP35.pdf>.

across minerals. For example, metric ton production of gold could not be equated to metric ton production of copper.

Mopani's respective share in relation to each of the selected factors is shown below in Exhibit 31.

Exhibit 31. Formulary apportionment factors

Year	Mopani reported revenue (US\$ m) ¹⁹⁰	Proportion of Glencore	Mopani net assets (US\$ m) ¹⁹¹	Proportion of Glencore	Mopani employees and contractors ¹⁹²	Proportion of Glencore	Three-factor proportion
2011	1,152	0.6%	327	1.0%	17,412	9.2%	3.6%
2012	1,053	0.5%	420	1.2%	17,908	9.5%	3.7%
2013	1,193	0.5%	382	0.7%	18,155	8.9%	3.4%
2014	828	0.4%	368	0.7%	21,152	11.7%	4.3%
2015	291	0.2%	476	1.2%	20,096	12.8%	4.7%
2016	255	0.2%	224	0.5%	14,312	9.2%	3.3%
2017	353	0.2%	-	0.0%	17,205	11.8%	4.0%
2018	842	0.4%	-	0.0%	16,835	10.7%	3.7%
Annual average	746	0.4%	275	0.7%	17,884	10.5%	3.8%

The three-factor proportion, which weights sales, assets, and employees equally, is intended to be a proxy for Mopani's economic activity as a proportion of Glencore's overall activity. The rationale is that Mopani should earn a share of profit that is consistent with its contribution to Glencore's overall economic activity.

For each year the three-factor proportion was multiplied by Glencore's global profits¹⁹³ to determine Mopani's allocation of those profits. The results are shown below in Exhibit 32.

¹⁹⁰ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018; ZCCM-IH, "Annual Reports."

¹⁹¹ Mopani net assets were calculated by reference to ZCCM-IH's fair value of the 10 percent interest they hold in Mopani, sourced from ZCCMIH, "Annual Reports."

¹⁹² Zambia Ministry of Mines and Mineral Development, Mopani employment data (on file with authors); Zambia Chamber of Mines, <http://mines.org.zm/>.

¹⁹³ Glencore's profits before taxes and impairments was used. The impairments are considered extraordinary to routine operations and generally have no impact for tax (they are non-deductible).

Exhibit 32. Method 4 results

Year	Actual profit ¹⁹⁴ (US\$ m)	Counterfactual profit (US\$ m)	Difference (US\$ m)	Tax impact (US\$ m)	Immediate tax impact (US\$ m)
2011	111	99	-12	-4	-
2012	31	76	45	14	10
2013	36	181	145	44	44
2014	-8	-38	-30	-9	-
2015	-285	38	323	97	-
2016	-180	250	430	129	75
2017	-290	252	542	163	76
2018	-723	56	779	234	17
<i>Annual average</i>	-163	114	278	83	28

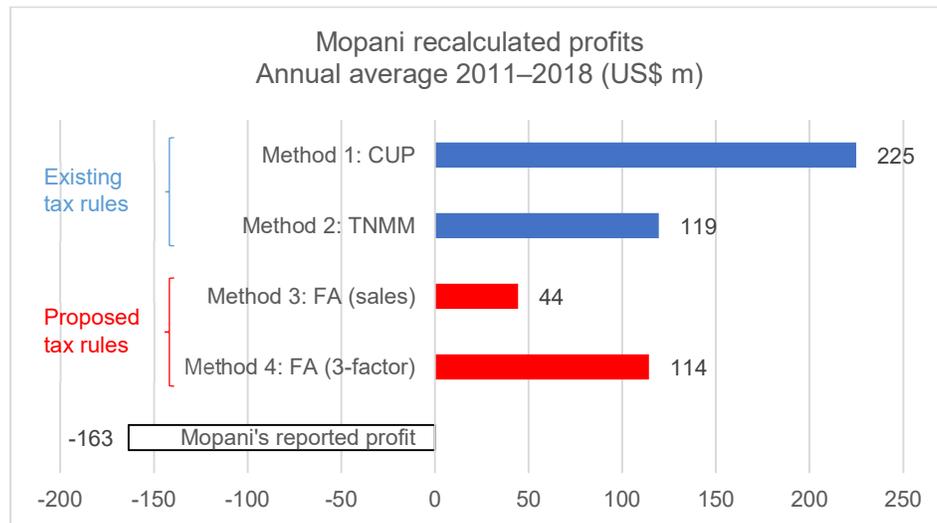
As shown above, our estimate suggests that Mopani's profits could be understated by US\$278 million per year under formulary apportionment rules. This understatement would have an annual tax expense impact of US\$83 million per year or an immediate tax impact of US\$28 million per year.

¹⁹⁴ Revenue and profit figures are sourced from Mopani information published in ZCCM-IH annual reports for period 2011 to 2018; ZCCM-IH, "Annual Reports."

7. CONCLUSION AND RECOMMENDATIONS

By applying four different methods, this report estimates that Mopani's profits may have been understated by a staggering US\$208 million–US\$388 million per year during the period 2011-2018. See Exhibit 37.

Exhibit 37. Mopani profits 2011–2018: Existing and potential tax rules



Methods 1 and 2 seek to apply the existing international tax rules to quantify Mopani's true profits. In doing so, they estimate Mopani's annual average profits could have been US\$119 million–US\$225 million.

Methods 3 and 4 seek to quantify Mopani's profits under potential changes to the international tax system. Under the proposed rules, the estimate of Mopani's average annual profit varies from US\$44 million–US\$114 million.

Our estimates suggest that a genuine application of the current international tax principles may in fact provide the best outcome in terms of Zambian revenue collection from Mopani, although as this report also shows, these rules may currently be proving difficult to enforce and they have not deliver revenue to Zambia on the scale that our analysis would suggest should be paid.

The results also indicate that, at least in some instances, formulary apportionment may not always provide the best result in terms of tax revenue for countries dependent on the export of natural resources. This seems to be particularly the case for formulary apportionment that relies solely on a sales factor (method 3). This makes sense intuitively, as value generation and hence taxing rights very clearly belong at the point of extraction when it comes to natural resources.

The current OECD Pillar One proposal has elements of formulary apportionment that rely only on a sales factor, and the analysis provided here suggests that it may be beneficial to countries such as Zambia that the extractive industries is currently outside the scope of the OECD's Pillar One proposal.

However, a broad extrapolation of these results should be cautioned against. Mopani is a unique case. In particular, the specific circumstances of Mopani and Glencore—such as Mopani's wildly fluctuating financial results and Glencore's relatively low profit margin—all contribute to this outcome. These circumstances are unlikely to be replicated in many other MNEs, either within or outside of the extractives or other sectors.

What is clear is that, by any measure, Mopani's profits appear to be understated and could be costing the Zambian government millions of dollars in tax revenues. Our estimates suggest that the foregone Zambian tax revenue could be as high as US\$91 million per year.¹⁹⁵ While Mopani's shutdowns and other operational challenges in recent years may explain and mitigate some of these results, the broader trend is still compelling.

Whether this trend will continue for Mopani now that it is under new ownership is an outstanding question, but policy improvements are necessary to ensure that the Zambian government can realize the benefits of the mineral resources in the country.

The following subsections consider the specific policy and related measures Zambia could take to address potential corporate tax avoidance by mining companies as well as measures Glencore could take to improve its tax practices.

7.1 ZAMBIA'S MINING FISCAL REGIME

1. Zambia should act very cautiously if it is to enter tax agreements with foreign multinationals, such as the development agreements associated with the copper sector in the late 1990s and early 2000s.¹⁹⁶ These agreements provided significant and irreversible long-term tax concessions. In doing so, these agreements undermined the Zambian fiscal regime and curtailed Zambia's ability to respond to changing economic circumstances and priorities. Many surveys suggest that tax incentives generally rank low in investment climate surveys in low-income countries, and there are many examples in which they are reported to be redundant; that is, investment would have been undertaken even without them.¹⁹⁷ For the same reasons, the costs and benefits of general tax incentives or concessions provided to mining companies in the income tax

¹⁹⁵ Based on the immediate tax impact (Exhibit 5).

¹⁹⁶ From 2008, the Mines and Minerals Development Act (2008), Article 159 effectively prevented these agreements from being entered into by the Minister. See Government of Zambia, "Mines and Mineral Development Act of 2008, Article 160."

¹⁹⁷ See for example, Platform for Collaboration on Tax (IMF, OECD, UN, and World Bank), "Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment," <https://www.tax-platform.org/sites/pct/files/publications/100757-Tax-Incentives-Background-paper-PUBLIC.pdf>.

rules or other rules should be carefully considered. In the wake of the COVID-19 pandemic, there is the potential that MNEs will engage in a renewed push for tax incentives.

2. Zambia should publish all of the development agreements negotiated with mining companies in the late 1990s and early 2000s. Doing so would improve transparency, allow civil society and other stakeholders to analyze such arrangements, and ensure that appropriate lessons (if any) are learned from these processes. Zambia should also publish any other tax or investment agreements entered into with mining companies.
3. Zambia should continue to focus on strengthening its administrative capacity with respect to taxation of mining companies. Having the requisite skills and experience within the ZRA (or other agencies) will be crucial to ensuring mining companies comply with tax and other obligations and pay their fair share of tax in Zambia.

7.2 ZAMBIA'S TRANSFER PRICING AND INTERNATIONAL TAX POLICY

Zambia has taken some important steps in strengthening its international tax and transfer pricing policy. These steps include updating transfer pricing regulations, documentation rules, and interest deductibility rules, and reviewing several tax treaties. However, more can be done to ensure mining MNEs are paying their fair share of tax in Zambia.

1. Zambia's commodity reference price rule is a good defense against the underpricing of copper exports. However, Zambia should ensure the rule is administered and enforced effectively. The ZRA (or another government agency) should have access to specialized equipment to conduct sample testing of the grade and quality of mineral exports. If testing facilities are explored, Zambia should ensure there is ongoing budget to support ongoing maintenance, qualified and experienced personnel, and robust and transparent testing procedures.¹⁹⁸ Given the concentration of copper deposits in the Zambia/DRC border area, collaboration with the DRC could be explored to create, for example, a shared testing facility. A shared facility would have cost and efficiency benefits for both tax administrations, though issues such as taxpayer confidentiality would have to be managed carefully. Without testing capabilities, MNEs could underprice sales by exaggerating quality adjustments downward.¹⁹⁹

¹⁹⁸ Alexandra Readhead, "Monitoring the Value of Mineral Exports. Policy Options for Governments," IGF-OECD Program to Address BEPS in Mining, <http://www.oecd.org/tax/beps/monitoring-the-value-of-mineral-exports-oecd-igf.pdf>.

¹⁹⁹ See for example, Readhead, "Special Rules for Commodity Sales."

2. Zambia should introduce ATAF's specific equipment pricing rule that requires the third-party invoicing of equipment. This rule will prevent mining companies from overstating the price of expensive mining equipment, thereby inflating depreciation deductions in Zambia. It would address many of the concerns that intra-group procurement services present in the context of the mining sector.
3. Zambia should implement CbCR rules in order to ensure it has access, through the automatic exchange protocols, to country-by country (CbC) reports filed in other jurisdictions by MNE groups with Zambian subsidiaries.²⁰⁰ These rules, which are a minimum standard of the BEPS Inclusive Framework, would help the ZRA to audit mining companies such as Mopani. It would give the ZRA a global roadmap of each MNE's financial and tax profile and enable the ZRA to better identify high-risk transactions.
4. Zambia should reconsider signing tax treaties with tax havens and consider renegotiating existing treaties with Ireland and the Netherlands. Tax treaties can significantly curtail Zambia's taxing rights through reduced withholding rates on outbound payments of interest, dividends, royalties, and management fees. They can also prevent Zambia from taxing activities of foreign enterprises that would otherwise be taxable in Zambia, such as short-term mining/construction projects or technical services in Zambia (amongst others). A 2018 World Bank study, for example, finds that treaties signed by sub-Saharan African countries with investment hubs lead to significant revenue losses for those countries, with no associated investment benefits.²⁰¹ Zambia has recently cancelled its treaty with Mauritius and renegotiated its treaty with Switzerland to achieve more favorable terms. These are very important steps forward in protecting Zambia's tax base.
5. Zambia should sign and ratify the Multilateral Convention on Mutual Administrative Assistance in Tax Matters. The convention has over 137 signatories, including many low-tax financial and commodity hubs, such as Switzerland, Ireland, United Arab Emirates, and Singapore. Doing so would greatly expand Zambia's exchange-of-information capability without it having to forego taxing rights through bilateral tax treaties. Exchange of information under the convention could help Zambia understand the often-opaque MNE group structures, functional profiles, and transactions that are relevant in applying transfer pricing rules to Zambian taxpayers. For example, it may assist, at the very least, Zambia to collect information on the ultimate third-party sale price for Zambian copper.
6. Zambia should actively engage in the current international debate regarding the tax challenges arising from the digitalization of the economy (BEPS 2.0). Every country has unique economic, tax, and regulatory conditions and priorities, and it is important for Zambia to contribute its conditions and priorities to the policy-setting agenda. The current program

²⁰⁰ Implementing local CbCR rules is one of the requirements to have access to automatic exchange of country-by-country (CbC) reports filed in other jurisdictions.

²⁰¹ Beer and Loeprick, "The Cost and Benefits of Tax Treaties."

of work has the potential to reset the international tax framework. It is critical that Zambia and other developing economies seek to achieve the best-possible outcome in the design of the new rules. In particular, Zambia could support the Inclusive Framework's "Pillar Two," which Oxfam sees as a positive step forward in limiting profit shifting out of source countries and in setting a floor to the "race to the bottom" of damaging tax competition between countries that has pushed tax rates lower and encouraged a proliferation of tax incentives.²⁰² In particular, the ordering of Pillar Two rules is important for source countries like Zambia. Support could be given to the undertaxed payments rule, which broadly allocates taxing rights to the source countries, having priority over the income inclusion rule, which broadly allocates taxing rights to the headquarter countries. Lastly, Zambia could help push for a more ambitious minimum rate than the 15% currently discussed, in line with ATAF and others that have called for a significantly higher rate.

7.3 GLENCORE AND MOPANI

Zambia's natural resources should benefit all Zambians and not just the large multinational miners and their shareholders. It is therefore incumbent on MNEs to provide greater accountability on the fiscal and other impacts of their extractive projects in Zambia. Comprehensive and transparent tax reporting is becoming increasingly important for all stakeholders, including investors, customers, suppliers, governments, and civil society.

This report makes the following recommendations for Glencore and Mopani, which will promote the open and accountable management of mineral resources and strengthen decision making by all stakeholders.

1. Glencore should pay its fair share of tax in the countries it operates in, by taking measures such as:
 - Cease any practices of shifting profits to low-tax jurisdictions;
 - pay tax at the statutory corporate income tax rate;
 - desist from seeking tax incentives and/or development agreements with stability clauses;
 - for transparency purposes, publish all contractual documents linked to their access to and exploitation of natural resources. In Zambia, this would require them to publish their development agreement in Zambia (even though it has lapsed and despite the onward sale) as well as their recent contract for the sale of shares and the ongoing offtake agreement.
2. Glencore should make its CbC report publicly available or otherwise publish basic tax information for Zambia and other jurisdictions. Many other companies, including those in extractive industries, have voluntarily

²⁰² For further discussion, see Oxfam's response to the OECD's public consultation on the Pillar Two proposal: Oxfam, "OECD Plans to Open Up Tax Reform to Developing Countries."

published CbC reports and other key tax information such as Royal Dutch Shell, BP, Eni, Repsol, Anglo American, and Rio Tinto. Information that Glencore should publish includes:

- List of all subsidiaries, including a brief description of the nature of their business and commercial activities;
 - number of employees working on a full-time basis;
 - tangible and intangible assets (used in business operations);
 - profit before income tax;
 - income tax accrued and paid;
 - a reconciliation of the effective tax rate and the tax cash paid, including a description of differences;
 - other relevant tax information, including a description and quantification of tax incentives (or related preferential tax rulings or subsidies).
3. Glencore should comply with the Global Reporting Initiative's new standard on tax reporting ("GRI 2017. TAX 2019"). This standard encourages MNEs to report on tax practices as part of their sustainability reporting. As well as the information in their CbC report, it includes disclosures on tax strategy, governance, risk management, and several other matters.
 4. Glencore should endorse responsible tax principles and practices and take steps to:
 - Adopt a transparent and responsible tax strategy;
 - align tax payments in the jurisdictions with economic substance;
 - renounce the use of tax havens;
 - ensure board of directors' endorsement and accountability for corporate tax policy;
 - make tax payments to governments transparent and publicly available;
 - disclose and explain contract-specific and project-specific tax incentives.
 5. Glencore should join the group of companies endorsing The B team's set of responsible tax principles.²⁰³ The principles articulate best practice in seven key areas from corporate governance to relationships with authorities to transparency. Several companies, including Unilever, Rio Tinto, Maersk, BHP, Total, and Anglo-American, have already publicly endorsed the principles and have committed to driving fairer, more sustainable tax systems and growing global standards of responsible tax practice.
 6. Mopani, now under the control of ZCCM-IH, should prioritize addressing any potential tax avoidance risks that persist after the completion of the transaction with Glencore. Further, as a Zambian state-owned company, Mopani and ZCCM-IH should implement best practices for transparency and responsible tax practices for the project, setting a high standard for public accountability to the Zambian people. This would include, but not be limited to, publicly disclosing its contracts with Glencore.

²⁰³ See B Team, "Responsible Tax," <https://bteam.org/our-thinking/news/responsible-tax>.

APPENDIX 1. FUNCTIONAL ANALYSIS

A functional analysis seeks to understand the relevant functions, assets, and risks of the parties to an intra-group transaction. Broadly, transfer pricing outcomes follow an analysis of the respective functions, assets, and risks of the parties to each intra-group transaction.²⁰⁴

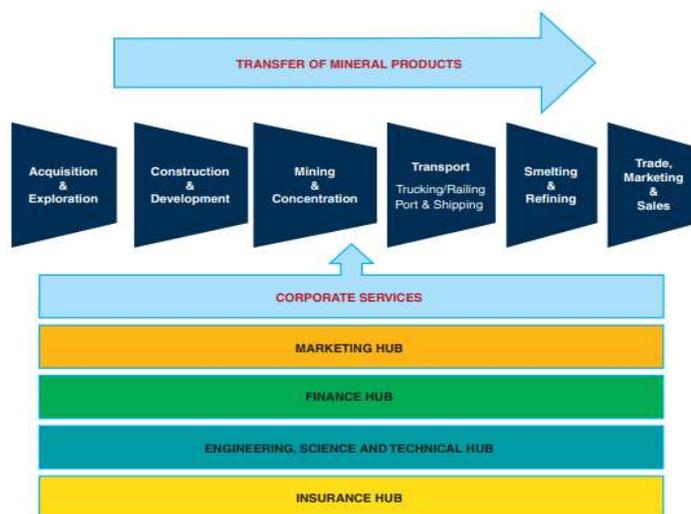
For example, compare two manufacturers of shoes in a country, say A Co. and B Co. Without undertaking a functional analysis, it would be easy to characterize A Co. as comparable to B Co. and conclude that their profits should be equivalent. However, it is revealed through the functional analysis that A Co. is performing a contract manufacturing function of producing generic shoes. It has limited assets, know-how, or risk. By comparison, B Co. is undertaking complex manufacturing processes because of the highly specialized nature of its shoes. B Co. relies on significant know-how and technical intellectual property (IP) to produce the shoes. It owns and markets the valuable brands associated with the shoes. It would follow that, commercially, A Co. would be expected to earn significantly lower profits than B Co. by virtue of its limited functions, assets, and risks.

This functional analysis guides the application of Methods 1 and 2, which seek to apply existing transfer pricing norms to estimate the level of profit shifting by Mopani. The functional analysis has been prepared using publicly available information from Glencore, the Zambian government, ZCCM-IH, and various reports, articles, and research that relate to Mopani's operations. Detailed information is, unfortunately, limited. Where information was not available or was limited, best estimates were made based on an understanding of the industry and the nature of Mopani's business.

A typical value chain within the mining industry is illustrated in Exhibit 38 below.

²⁰⁴ See OECD, "OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations 2017," Chapter 1, <https://www.oecd.org/tax/transfer-pricing/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-20769717.htm>; or UN, "Practical Manual on Transfer Pricing for Developing Countries (2017)," Part B.2, <https://www.un.org/esa/ffd/wp-content/uploads/2017/04/Manual-TP-2017.pdf>.

Exhibit 38. Typical value chain in mining sector²⁰⁵



Source: World Bank, *Transfer Pricing in Mining with a Focus on Africa*, 2017

Functions

It is not clear whether Mopani conducts any exploration and prospecting activities in Zambia. The mines at Nkana and Mufulira were well established and in the production phase when they were acquired from ZCCM in 2000. The mining licenses on these sites are granted by the Zambian government and are held by Mopani.

Mopani conducts the actual mining activities associated with the mine sites at Nkana and Mufulira. The minerals are extracted using a variety of methods, including drilling and leaching. Once extracted, Mopani also performs the processing functions until the copper is of sufficient export grade. As of June 2020, Mopani employs approximately 11,000 employees.²⁰⁶

The extent to which Mopani conducts sales and marketing functions is unclear. As discussed in Section 4, it appears that all of Mopani's copper production is sold to Glencore Group companies. These sales would not require marketing or sales activities.

It is also unclear whether secondary and support services are carried out by Mopani itself. There are several functions such as financing, human resources (HR), treasury, logistics, procurement, and information technology (IT) that may be performed internally or may be provided by other Glencore Group members.

²⁰⁵ World Bank Group, "Transfer Pricing in Mining," *With a Focus on Africa: A Briefing Note* 2017, p. 9, <http://documents.worldbank.org/curated/en/213881485941701316/pdf/112344-REVISED-Transfer-pricing-in-mining-with-a-focus-on-Africa-a-briefing-note-Web.pdf>.

²⁰⁶ Zambia Ministry of Mines and Mineral Development, Mopani employment data (on file with authors); Zambia Chamber of Mines, <http://mines.org.zm/>.

Assets

Mopani holds the mining licenses over the sites at Nkana and Mufulira. This asset is an important and potentially highly valuable intangible one.

At these sites, Mopani has facilities to perform extraction, concentration, smelting, and refining processes. These functions require significant plants and machinery, which appear to be owned by Mopani (rather than by other members of the Mopani group). Mopani has invested over US\$4 billion in capital expenditure since privatization.²⁰⁷

The extent to which Mopani holds intellectual property (IP) assets other than mining rights is unclear. IP that is utilized by or benefits Mopani could include process know-how, supplier lists, and patents. These assets are generally not recognized for accounting purposes due to the difficulty of identifying and valuing these assets.

Risks

There are several potential risks associated with Mopani's operations in Zambia.

Operational risk: Risk of breakdowns or failures in operations, systems, or internal procedures. This risk would typically be borne by Mopani.

Regulatory risk: Risk of changes in the regulatory environment in Zambia or specific regulations affecting Mopani. This risk is likely quite significant in the context of a rapidly changing regulatory environment in Zambia. This risk would typically be borne by Mopani.

Credit risk: Risk that customers will default on their payments. This risk is not borne by Mopani as all sales are intra-group to other Glencore member entities. The Glencore marketing hub would bear the risk of third-party customers being unable to pay accounts.

Market price risk: Risk related to fluctuations in the price of copper. This risk is significant given the volatility of commodity prices and the time taken between operational decisions and when the copper is actually produced. Based on the leaked audit report,²⁰⁸ it appears the intra-group sale price is referenced to LME prices, meaning it is not necessarily set at the LME price but by reference to it, for example at a 5 percent discount. If this were the case, it would mean that Mopani, while not receiving the LME price, could still be assuming the risk of fluctuations in market prices because it always receives, for example, 95 percent of the LME price.

²⁰⁷ Mining Weekly, "Billions in Investment to Propel Zambia's Mopani Mine into Costs 'Premier League,'" <https://m.miningweekly.com/article/4bn-investment-by-glencore-to-push-mopani-mine-into-mining-premier-league-2017-08-18>.

²⁰⁸ Glencore disputes the findings of this report. Glencore letter to Oxfam, Response to request for comment, May 28, 2021.

Foreign exchange risk: Risk that there will be adverse movements in foreign exchange between the time transactions are settled and when the economic benefits of the transaction are realized. It is unclear whether Mopani bears any foreign exchange risk, as this risk would primarily depend on the denominated currency of its operational costs and the denominated currency of its sales of copper.

Inventory risk: Risk of theft, damage, or other adverse effects to inventory, including while in transport. It is likely that Mopani bears some or all inventory risk. It is not clear when ownership of copper transfers to the Glencore marketing hub (if still used). It may be that the marketing hub only takes “flash title” of the inventory. In other words, it only takes instantaneous title to the copper in the window between the sale from Mopani to the hub and the sale from the hub to the third-party customer.

An indicative functional analysis profile is given below in Exhibit 39. This profile also considers the likely profile of the Glencore subsidiary responsible for selling the copper, mined by Mopani, to third parties (“Glencore marketing hub”). As discussed in Section 4.1, the use of a commodity trading or marketing hub is a common transactional structure in mining MNEs and, according to the leaked audit report,²⁰⁹ appears to have been implemented by Glencore.

²⁰⁹ Glencore disputes the findings of this report. Glencore letter to Oxfam, Response to request for comment, May 28, 2021.

Exhibit 39. Mopani indicative functional analysis²¹⁰

	Mopani	Glencore marketing hub
Functions		
Exploration and acquisition	✓ (likely limited)	
Mineral extraction	✓	
Processing	✓	
Sales and marketing		✓
Administrative and support services	✓	✓
Assets		
Mining license	✓	
Plant and equipment	✓	
Intellectual property	✓ (likely limited)	✓ (likely limited)
Inventory	✓	✓ (likely limited)
Risks		
Operational	✓	
Regulatory	✓	
Credit		✓
Market price	✓ (potentially either party)	✓ (potentially either party)
Foreign exchange	✓ (potentially either party)	✓ (potentially either party)
Inventory	✓	✓ (likely limited)

The functional analysis indicates that, although Mopani is unlikely to have responsibility for all aspects of the mining operations from exploration to external sales, it is responsible for a significant share of the functions, assets, and risks. It appears to own significant assets (mining license, plant and equipment) and appears to assume significant risks²¹¹ (operational, regulatory, and market price risks). Therefore, it is reasonable to conclude Mopani could be characterized as a fully-fledged copper mining entity.

²¹⁰ The functional analysis is indicative only. A comprehensive functional analysis would require a detailed understanding of Mopani and Glencore's operations in the context of the sale of copper mined by Mopani.

²¹¹ However, this would depend on the contract allocation of risk between Mopani and the Glencore marketing hub, as well as the conduct of the parties with respect to these risks.

APPENDIX 2. RESEARCH METHODOLOGY

Broadly, the research methodology involves the application of five methods to estimate the extent to which Mopani's profits in Zambia may be suppressed. Based on these calculations, the Zambian tax impact is estimated.

Methods 1 and 2 apply two transfer pricing methods to estimate the "arm's length" quantum of Mopani's profits. These two methods apply the international tax rules as they currently stand. Methods 3 and 4 apply alternative rules not currently in place to estimate the appropriate level of Mopani's profits, by allocating Mopani with a portion of Glencore's global profits.

It is important to note that all four methods are independent and separate estimates of the appropriate level of Mopani profits. Therefore, the results and potential tax outcomes should not be aggregated.

The starting point for the research was to obtain the financial statements of Glencore for the years 2011–2018. These financial statements include globally consolidated data on revenue, profits, assets, and employees. It also includes some specific data on Mopani's operations in Zambia, such as copper and cobalt production.

Standalone financial statements in relation to Mopani are, unfortunately, not publicly available. However, the Zambia state-owned mining company, Zambia Consolidated Copper Mines Investment Holdings Plc (ZCCM-IH) holds a 10 percent equity interest in Mopani. ZCCM-IH's annual reports include various details on the Zambian copper mining entities in which it holds an equity interest. Relevant information on Mopani's revenue, profit, and equity values were obtained from these reports.

Where data were not reported in US dollars, it was converted from local currency into US dollars using the spot rate on the last day of the relevant income year.²¹² The statutory corporate tax rates for Zambia were also determined for the years 2011 through to 2018.

Method 1. Transfer pricing: Comparable uncontrolled price (CUP) method

The CUP method focuses on whether a specific transaction or set of transactions is arm's length, as opposed to whether the overall profits are arm's length. This is achieved by comparing the price of the intra-group transaction (in this case, copper exports) with the price of independent transactions or market reference prices for the same product.

In order to approximate the amount of copper sold by Mopani in each year, production data were obtained from Glencore's annual production reports.

²¹² Spot rates obtained from XE, "XE Currency Converter."

The annual average copper price (per the LME) was obtained and used as a proxy for the arm's length price. A conservative adjustment of US\$300 was made to account for estimated freight costs. By multiplying Mopani's annual production by the annual adjusted LME copper price, we can estimate the arm's length revenue that could have been achieved.

Limitations of this method

This method assumes that the amount of copper produced by Mopani in a year equates to the amount of copper sold by Mopani. There are several reasons why this assumption may not be the case in reality. There may be significant lags between production and sale, and there may be a need to stockpile at various times. However, over the course of an eight-year period, the variability should be less pronounced, as it can be expected that natural fluctuations would offset such that production could reasonably approximate sales.

As the annual average LME price is used, this average does not consider natural fluctuations in the price or the timing of copper sales. It also does not reflect that the copper produced may be of varying grades and effectively assumes that all copper sold by Mopani is consistent with the LME high-grade specifications, or at least that any differences even out over the course of the eight-year period. Glencore publishes the average annual (third-party) price achieved for the sale of copper (amongst other minerals). This price was used to sense check the average LME price, and it was found that the two prices were consistent.

This method also does not consider the contribution of other Glencore subsidiaries in marketing and selling the copper or in assuming risks with respect to the copper. It therefore assumes that Mopani could achieve the LME market prices without incurring additional costs.

As this method is a transactional one, it considers only one transaction: the price of sales of copper and the resultant impact on profitability. It does not consider other transactions that may also impact profitability, such as costs incurred from related parties for interest, management fees, royalties, or support services.

Method 2. Transfer pricing: Transactional net margin method (TNMM)

The TNMM compares the profits of the tested party (i.e., Mopani) with the profits of comparable independent entities with similar operations.

A functional profile of Mopani was determined, and a search for comparable entities was undertaken. Typically, it is preferable that the search for comparable entities is within the same operating country or region as the tested party (Mopani). However, this search process relies on large amounts of publicly available corporate information. Depending on the jurisdiction, this information is not always available. For example, comparable data tend to be strong in Western Europe, North America, Australia, New Zealand, and parts of Asia. By contrast, there is limited public financial data available in South America, Africa, and Eastern Europe.

For the purposes of this analysis, it is noted that we were unable to identify publicly available information on comparable copper mining entities operating in Zambia or Africa. In addition, Mopani's main competitors in Zambia are also all foreign owned and subject to potential profit manipulation through related party transactions. For these reasons, under the OECD guidelines and UN practical manual, subsidiaries of MNE groups are not appropriate for comparability. Therefore, we have not limited our search to any country or region but instead conducted a global search.

As a result of the search, a list of ten comparable entities has been selected. Details of the selected comparable companies are provided in Exhibit 40 below. Although many of the companies have diverse mining ventures beyond copper, they have been considered comparable so long as their other operations are functionally similar (i.e., mining of metals and minerals, including copper).

Exhibit 40. Selected comparable entities

Company	Headquarters	Description
Vedanta	UK	The UK group is a diversified global metals and mining company, with major mining operations in India, Australia, and Zambia. It is the majority shareholder of Konkola Copper Mines in Zambia.
First Quantum	Canada	The Canadian exploration, mining, and development company earns 80 percent of its revenue from copper. Its major copper mines are situated in Zambia and the DRC. It is the majority shareholder of Kansanshi Copper Mines in Zambia.
China Nonferrous Metal Company	China	The Hong Kong-listed company covers a range of nonferrous metals and has significant operations in Zambia, DRC, Mongolia, Thailand, and Myanmar. It is the majority shareholder of NFC Africa Mining PLC in Zambia.
Codelco	Chile	The state-owned Chilean group is the world's single biggest copper producer, controlling about 20 percent of total global reserves.
Freeport McMoRan	USA	The Arizona-based company is the world's largest publicly traded copper producer.
Anglo-American	UK	The London group has six copper operations in Chile. It also has controlling interests in Chile's Michiquillay project and a 50 percent stake in Alaska's Pebble project.
Rio Tinto	UK/Australia	The London-based company supplies about 18 percent of annual US refined copper requirements from its Bingham Canyon mine in Utah.
Southern Copper Corporation	US/Mexico	The company, which is 80 percent owned by Grupo Mexico, is listed independently on the New York Stock Exchange as well as the Lima Stock Exchange. Its operations focus on southern Peru at its Cuajones and Toquepala mines, as well as its Cananea mine in Mexico.
Antofagasta	UK/Chile	Antofagasta is a UK- and Chile-based copper miner. It is listed on the London Stock Exchange, and its operations are focused on four mines in Chile: Pelambres, Tesoro, Michilla, and Esperanza.
KGHM Polska Miedz	Poland	Poland's KGHM has operations in Europe, North America, and South America, and says that it holds over 37.5 million tons of copper ore resources worldwide.

Financial information on revenue and profit were obtained from these companies' financial statements. The financial results were aggregated and statistically analyzed. An arm's length profit margin was established based on the first quartile of the observable set and the third quartile of the observable set. Mopani's profits were reconstructed by hypothesizing that it earned a profit margin equal to the median in the comparable set (for each income year).

Limitations of this method

In written comments, Glencore disputes the assessment of the entities has stressed that it is not comparable with the entities selected in Exhibit 40 for three reasons.²¹³ First, Glencore notes that "Mopani's total production derives approximately 50/50 from its own sources (mining) and from treating other mines' material (smelting). The economics and margin structure are completely different between mining and smelting." Second, Glencore explains that "Mopani's cost structure has progressively increased with its deep underground mining advancing ever further away from its surface infrastructure. Against this backdrop, Glencore approved an investment program more than USD\$1 billion to extend the life of Mopani via sinking new shafts and building a new concentrator, without which, Mopani was heading towards the end of its economic life." The company notes that "Mopani's operating and financial parameters (high costs, low volumes) in recent years is not remotely comparable" with the list of entities selected in Exhibit 22. Third, Glencore notes that "most of the companies in Exhibit 22 produce by-products, in addition to copper, such as gold, silver, molybdenum etc." and that "[t]hese by-products can significantly enhance their margins / financial returns," whereas Mopani does not benefit from any by-products."

Because of the lack of available data in Zambia and Africa, it is difficult to find entities that closely reflect Mopani's operational environment. This difficulty is exacerbated by the fact that the function analysis of Mopani could only be undertaken based on publicly available information. We do not fully understand some of the important aspects of Mopani's business, such as assumption of risks and ownership of certain assets. There may be differences in functional profiles, or there may be factors in the local Zambian market that cause variations in profits. In addition, the TNMM is generally only considered to provide an approximate indicator of the arm's length price of intra-group transactions. These issues, proper functional profiling and access to local comparable data, are significant issues facing tax administrations in many countries, including low-income countries such as Zambia.

Method 3: Formulary apportionment (FA) (one factor)

This method involves the application of a formulary apportionment based on one allocation factor: sales revenue. By selecting sales revenue as the allocation key, the method effectively hypothesizes that Mopani should earn the same profit margin as the Glencore Group (or business line).

²¹³ Glencore letter to Oxfam, Response to request for comment, May 28, 2021. Glencore also claims that as of March 2021, the Zambia Revenue Authority "owed Mopani almost \$500 million in legally due VAT refunds, built up over the past decade."

Mopani's profit margin was calculated for each year by dividing its profits by its revenues. Mopani's profit margin was compared with Glencore's global profit margin, specifically the earnings before interest and tax (EBIT) margin.

Many proponents of formulary apportionment consider segment-level allocation appropriate and indeed a more accurate approach. Segment-level allocation is discussed in the OECD's Pillar One proposal. As Glencore prepares segment-level reporting, the profit of Glencore's metals and minerals division was used, rather than Glencore's overall profit. This division is defined as the production and marketing of copper, zinc, nickel, ferroalloys, alumina, and iron ore. Although the division is not limited to copper, it is the biggest contributor to the division. In addition, the other minerals in the division are of similar nature, and the operating models are likely to be similar.

For each year, a counterfactual profit was determined by multiplying Mopani's revenues by Glencore's metals and minerals profit margin. This profit was compared to Mopani's actual profit. Zambia's statutory tax rate was then applied to the difference in profit to estimate the additional tax owed.

Method 4. Formulary apportionment (FA) (three factors)

This method involves the application of a formulary apportionment based on three allocation factors, weighted equally:

- Revenue
- Net assets
- Number of employees and contractors

Data in relation to Glencore's global revenues, tangible assets, employees, and profits were obtained from the relevant annual reports. See Exhibit 41 for details.

Exhibit 41. Global formulary apportionment data²¹⁴

Year	Revenue (US\$ m)	Net assets (US\$ m)	Employees and contractors
2011	186,152	32,335	188,555
2012	214,436	34,173	188,555
2013	232,694	53,149	203,637
2014	221,073	51,480	181,349
2015	170,497	41,343	156,468
2016	152,948	43,781	154,832
2017	205,476	49,455	146,000
2018	220,524	45,383	158,000

For each year, the three factors were applied with equal weighting to determine Mopani's share of global profits. For example, if Mopani earned 10

²¹⁴ Sourced from Glencore Annual Reports, <https://www.glencore.com/investors/reports-results/report-archive>.

percent of global revenue, had 20 percent of the group's employees, and 30 percent of the group's net assets, it would be allocated with 20 percent of the group's consolidated profits. In this case, the allocation proportion of 20 percent is calculated as the average of the three splitting factors (10 percent, 20 percent, and 30 percent).

A counterfactual profit was determined based on the methodology above, and this profit was compared to Mopani's actual profit. Zambia's statutory tax rate was then applied to the difference in profit to estimate the additional tax owed.

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