Chapter 6

TRADING INEQUALITY

Capture of both researcher and value

> I must admit I am a bit surprised. I have not received any request from yourself or any organization to conduct this research at Kansanshi [Mine] nor a request to interview personnel at Kansanshi. Could you please supply me with the remit from the International Project that you are leading. I am going to the [Kansanshi Golf Estate] club for lunch at 1pm if you wanted to drop by.

This email dated 15 August 2017 was signed by the then general manager (GM) of Kansanshi Mine, one of two of Canada-based First Quantum Minerals' (FQM's) Zambian mines. With slightly shaky knees, I went to the club where the general manager often took his lunch. He had ordered his lunch before leaving the mine and found his table already set. Today, he went for a stroll across the golf course to check on the progress of a small dam. I told the waiters that I had an appointment with the GM and was seated at his table where I could watch him approaching. We had not met yet. He seemed nervous and tense to me. I tried to look relaxed and be chatty.

For many weeks now, I had had access to several senior employees and managers of Kansanshi Mine and conducted formal interviews on the mine premises while living in the residential area for the mine's management and expatriate employees, the Golf Estate (see Chapter 4). My access to the mine site had to be authorized by my interviewees on each occasion; the interviews were taped with the interviewees' consent, some of whom requested individual parts of the conversation to be off record. When I finally approached the mine's GM for an interview, he sent me this email, and there we were negotiating my presence. I did not order anything, feeling that he had not invited me for lunch but rather to an interrogation. Other guests looked on curiously as they knew the GM and, by now, they had seen me around, too. Immediately after sitting down, the GM made clear that his fellow managers had violated internal procedures by speaking to me without authorization by the mother company's (FQM) board. They were in breach of an agreement they had to sign annually, in which they vowed to not make public any information about the company without prior consent by him, by the co-founder, president and director at FQM and by the full board of directors. Shareholders, the clearly worried GM repeated multiple times, would otherwise learn things they ought not to know.

I apologized for the inconvenience I caused to him and his team of managers, but I also explained that none of his team of managers had told me about the internal procedure and that I would have expected them to tell me. They should have known better, he agreed. I was quite surprised about the GM sharing with me the extent to which he did not have control over his subordinates. He also seemed to notice this fact himself and quickly found back to what I imagined the GM of the largest copper mine in Africa to be: tough, distanced, and professional. He informed me about the way forward: I should write a letter explaining my interest in conducting research on the mine, which he would forward to the FQM board. It may be that I would have to hand over my notes to the company, he continued. I replied vaguely and cautiously that I could not agree to do that.

That was it. He picked up his fork to dig into his chicken salad. As a marker of my departure, I tried a joke: maybe, pending the board's decision, I was lucky and would be able to interview him at last. He smiled politely and I hastened away, relieved to have survived one of the fraughter situations of my field work. I did not have to go far to reach my temporary home on the Golf Estate. Trying to make sense of it all, I typed my notes, feeling suddenly surveyed and unsure whether I should log into the estate's WLAN. The GM was surprisingly plain in his worry. I had expected him to be over-authoritative, shouting or charming even. He truly was worried, I concluded.

I tried to recall to myself how I ended up in this situation. My research was not an organizational study of the mining company, but on Solwezi town. This means that I treated the mine as one actor among many in the town and I simply tried to see how far I was let in. Early on, in 2013 and more often in 2015 and 2016, I was in contact with the CSR department and accompanied its manager for many days. This is usually where most researchers stop; the CSR department acts as a convincing gatekeeper. In 2015, however, I lived in the mine's housing project for better-off employees, Kabitaka, Solwezi, for several months and in Kalumbila town, run by a subsidiary of FQM, for several weeks. Also in 2015, I became a member of the Kansanshi Golf Estate club, as a researcher, and regularly spent time there. Eventually, in 2017, I moved in with a female mine employee (see Chapter 4). All this needed and implied authorization by company representatives. I consistently made clear that I was there for research, and never tried to do research covertly. Given the smallness of the expatriate community, I am quite sure the GM at least knew about my presence as a researcher. Even when I was able to officially schedule a research interview with FQM's Director of Operations Matt Pascall when he visited the mine two weeks earlier, I was not given to understand that I needed any additional authorization.

When I eventually approached the managers one by one, they all individually granted me access to the mining site where the management's offices are situated, which involves quite a bit of screening. None of the managers told me that there was a formal procedure for research on the mine, but all readily agreed to meet me and allowed me to record the conversations (with breaks when they wanted to go off the record). I took it for granted that members of the mine's higher

management controlled access by researchers in the interest of the mine and followed its internal procedures.

Nevertheless, I felt uneasy about the fact that the GM blamed my interviewees and that I, too, could but point out that they did not inform me about the mine-internal process. Immediately after the conversation with the GM, I therefore wrote emails to all managers individually, informed them about the GM's reaction and apologized for the inconvenience I might have caused. All of them replied without showing any concern, saying that it was no problem at all and that I should not worry about them; they had the authority to talk to me and had not said anything they should not have mentioned.

I am not the first person to suddenly find access to a mining company barred, and I was not overly surprised by the decision.[1] What puzzled me was the abruptness of the decision. Why this sudden shutdown now? What was the GM worried about?

During this phase of my research, I focused more purposefully on the mining company, moving away from the topics of urban development and governance. I increasingly realized that, to understand Solwezi, I had to understand the mine's global connections. By then, I knew quite a lot about what went on at the mine fence and the town council, about labour relations within the company, about CSR projects and infrastructure investments. Yet I knew very little about what happened once copper – and profits – left the region. So, when interviewing managers, I asked questions about the off-takers of Kansanshi's copper, about the trucking firms transporting copper from the mine gate to the harbours, about their freight forwarders and clearing agents and so forth. Their answers, along with other research I was doing, slowly made me realize how important a world-spanning network of services is for mining, a network that links the mine to the markets across the globe and in which a large part of the profit from mineral extraction is made. I learnt that servicification creates new and more flexible opportunities for international companies to capture value in the global production networks (GPN); opportunities which rely on business-friendly regulations and tax regimes in Northern countries.

It was even more surprising to me how close these themes brought me to where I had set out to do research on Zambia: to Switzerland, my native country. I had of course been aware of the role Switzerland plays as a global commodity trading hub (see introduction). Switzerland generated 4.8 per cent of its GDP in 2018 from commodity trading (and 8.9 per cent in 2023) – a higher share than banking or tourism. In 2020, the five largest Swiss companies by turnover are commodity traders: Vitol, Glencore, Trafigura, Mercuria Energy Trading and Cargill. Given their growth, large Swiss-based trading firms like Glencore and Trafigura had generated increasing scholarly and public interest (Erklärung von Bern 2011; Interdepartemental Plattform on Commodities 2013; Public Eye and Missbach 2017). In 2023, Trafigura was charged by Swiss prosecutors over allegedly bribing public officials in Angola, and in 2024, it pleaded guilty to bribing Brazilian oil officials and agreed to settle allegations of manipulating a fuel oil benchmark as alleged by the US Commodity Futures Trading Commission. Yet

the activities of trading giants remain opaque in general, and I had had little idea about the real scope of the Swiss involvement in the commodity chain of Zambian copper. Swiss companies indeed control key segments of the chain: buying and selling – according to official trade statistics, half of Zambia's copper is exported to Switzerland – finance, insurance, storage, transport, cleaning, weighing, blending, tracking, certification. I will lay out these connections in detail below.[2]

When Kansanshi's GM stopped my access to the mine, I not only had almost set up an interview with a representative of FQM's trading arm in Switzerland (see below) butI also had begun to understand the business model of a global mining company and had started to get access to the inside perspectives of senior mine managers on it. I had also begun to understand that doing research on Solwezi taught me just as much about my native country than about Zambia. This is exactly when my access to inside information was suddenly shut down. The GM followed up on our meeting the day after, writing that 'as indicated yesterday, please refrain from speaking to any KMP employee on this subject matter other than [FQM's country liaison person in the capital Lusaka] John Gladstone. That includes [the person] where you are currently staying.' My follow-ups several weeks later asking for an answer to my formal application to conduct research on the mine site and my letters to the Corporate Community Relations Manager at FQM in Vancouver, Canada, were all politely but firmly declined.

In comparison to other scholars, my access to the mine's management had clearly been extraordinary and, in fact, the fruit of many years of hanging around in the area (see introduction). Large, integrated mining and trading companies rarely allow researchers in (for notable exceptions, see Lee 2017; Rajak 2014; Welker 2014). My access was denied when I moved from the local impacts of the mine, its CSR measures and its role in urban development to where the real bottom line came in: the company's business models and its global profits. Although I cannot be sure, I do not consider it a coincidence that my access was cut off at that very moment. Mining companies draw much scrutiny, and the sites of extraction are difficult to miss. The actual mine sites are the key targets of critiques; they are under general suspicion from transnationally organized civil society. Companies have learnt to live with this publicity and often respond to it on the offense. Sustainability reports, local CSR measures that generate illustrations for these reports and the co-optation of civil society groups are important strategies to counter or even prevent criticism, and so is maintaining good relations to researchers. My being welcomed to conduct research on the company's CSR programmes, partake in tours of the mining area and, most importantly, live on the Golf Estate for several months, must all be seen as part of the critical engagement a company strategically enters to legitimize its operations.

Critical mining scholars' hobbyhorse, CSR research, often inadvertently helps to co-constitute a narrow, contained perspective of what extraction is: the mine and the adjacent communities, discursively reducing extractivism to the narrow confines of the physical mining enclave.[3] The sites of mineral extraction are indeed massive and very visible, and have huge ecological, economic and social impacts. However, as Gavin Bridge (2015) expresses it, 'The hole is an essential feature of

the extractive landscape, but the hole is just the start.' In other words, the 'hole's' prominence tends to hide the infrastructure that enables mining companies to work, which are less spectacular, but no less profitable (see also Arboleda 2020, 110; Tsing 2005).

The relative and selective openness serves two aims at once. It concentrates researchers' interest on that to which they can gain access, hiding the fact that information which really matters remains closely guarded; and it builds up a public image of openness and engagement that can be used to portray critical reports as one-sided. This fact came home to us at the final roundtable of a research project I was leading at the time in Geneva, the city where Trafigura is headquartered, and the Swiss Trading and Shipping Association (STSA) has its offices. As a panellist responding to our findings, Trafigura's Head of Corporate Responsibility James Nicholson 'challenged' us to 'engage more actively with the trading sector', saying that he 'would challenge [us] how much voice traders had in this conversation' (UNRISD 2018, 26:45 min). Mining companies' openness and willingness to engage with their critiques must therefore be seen as part of a gatekeeping strategy to hide what really is important: the extent to which a small number of globally operating firms control entire value and production chains, thereby prohibiting local content and a real integration of resource-rich economies into global markets. When he realized that I and my colleagues were about to penetrate this world too deeply, the GM pulled the plug.

What was there to hide? My colleague researcher for this chapter, Gregor Dobler, with whom I partnered for the material contributing to this chapter, and I did not discover any dirty secrets around Kansanshi Mine. What we discovered was much less and much more: the makings of a system that allows one part of the world to profit from the wealth of another part (Appadurai 1986). That system assigns specific value to specific jobs in the making of a commodity; it brings all segments of a commodity chain in which profits can be made under the control of external actors; it shifts profits between countries in a way to minimize taxes paid; and it systematically erects cognitive barriers between those parts of the world which it links in practice.

In *Friction*, anthropologist Anna Tsing invites us to follow commodity chains and the making of a commodity. A lump of coal, as her example goes, 'is transformed as coal-the-diggable, coal-the-sortable, coal-the-transportable, until it eventually becomes coal-the-burnable. In these shifts the lump of coal rubs up against other participants in the chain: unhappy villagers, conveyor belts, contracts. In its shape, its costs, and its composition, coal is made in the friction of the commodity chain' (Tsing 2005, 51). Here, I am less interested in how copper is made in friction, nor in the cultural production of its meaning. What I am concerned with is how profits are made by international companies providing the infrastructure for Southern Africa's mineral extraction: how, by transforming copper from 'diggable' to 'sortable' to 'transportable' and so on, value is defined and appropriated by actors along the chain. With this approach, I draw inspiration from a methodological scholarship that tracks transnational relations through a focus on particular commodity, its production and circulation in the global economy and value extraction and

creation – 'follow the thing' (Appadurai 1986; Marcus 1995), and a much smaller scholarship that instead 'follows the money' (Christophers 2011) – both of which are attempts to reveal what Harvey calls 'fingerprints of exploitation' (1990). The result is however closer to an extended-case study (Burawoy 1998) – viewed from Solwezi – than a classic study into the life of a commodity. For, *articulation* may be tracked through a travelling something or someone, but it becomes manifest in a place – on the roadside, in border towns built for storage facilities, at harbours, in towns attractive for traders and service providers and so forth.

Extraction

Copper mines play an outsize role for Zambia's economy. There are currently eight large copper mines operating in the country. The three mines in Northwestern Province are new (or, in the case of Kansanshi, completely re-developed) open pit, the five mines in the Copperbelt Province are decades-old underground with open pit sections at some of them. Until 2019, when the Zambian state temporarily took over Konkola Copper Mines, and January 2021, when it acquired the majority stake of Mopani Mines, all mines were operated by international mining firms with multiple assets in different countries. Each of these firms has its own distinct operational logic shaped by the role an individual mine plays within the larger company structure.

FQM operates eight mines in Australia, Finland, Mauretania, Panama, Spain, Turkey and Zambia and develops one mine in Zambia – most of them focusing on copper. It is the majority owner of Kansanshi Mine near Solwezi and Trident Project including the Sentinel (copper) Mine and the Enterprise (nickel) Mine near Kalumbila. Together, the two copper projects in Zambia make up almost half of FQM's revenue. Its shares are publicly listed on the Toronto Stock Exchange. This makes it a classical mining company for which extraction and the operation of large-scale mines has always been the core business. Glencore, on the other hand, until recently the majority owner of Mufulira Mines and the best-known Swiss company active in Zambia's copper sector, has started out as a commodity trader and only later expanded into production. Its business model is still largely driven by trade, and mines can quickly become an expendable part of the company's business.

These different business logics influence investment decisions and, especially in times of crisis, create diverging dynamics for different mines. While FQM has to rely on mines long-term and recover investment made into them, Glencore treats mining 'as if it was a portfolio' (Müller 2020) and is more closely focused on short-term returns. 'I do not like a mine that does not yield any profit', in the words of the former CEO Ivan Glasenberg (Müller 2020). In times of low commodity prices such as during the ongoing global recession caused by Covid-19, Glencore is more ready to curb production and put mines on care and maintenance – that is, stopping production with the potential of recommencing operations again – since the loss in earnings can be offset by the company's trading arms for whom the higher volatility during crises creates new earning opportunities.

In consequence of their different company structures, Glencore and FQM also have different relations to Switzerland as a regulatory and physical space. In what follows, I briefly detail Glencore's entry in and relationship with Zambia's mining sector, since its mines were the only ones in Zambia directly controlled by a Swiss company. I then proceed to trade and to the many other copper-related activities Swiss-based companies are actively involved in transport, warehousing, fuel supply and distribution, testing, certification and surveillance, and customs.

Glencore's decision to buy mines in Zambia was anticyclical and, in retrospect, came at the best possible moment for the company. During Zambia's privatization process, Glencore acquired a majority stake in Mopani Copper Mines from the state's Zambia Consolidated Copper Mines (ZCCM). Mopani Copper Mines is the largest employer on the Copperbelt – comprising Nkana and Mufulira mines, two concentrators, one smelter, one refinery and two cobalt plants. In 2000, Carlisa Investments Corp, a joint venture between FQM and Glencore International AG incorporated in the British Virgin Islands, acquired a 90 per cent share in Mopani. Very soon, FQM diluted its interest in the company, which reduced its shares in the Mopani Copper Mines from 45.9 per cent to 16.9 per cent and increased Glencore's from 44.1 per cent to 76.3 per cent. The remaining 10 per cent was still owned by ZCCM (First Quantum Minerals Ltd. 2002).[4]

As with all ZCCM assets, conditions for the sale of Mopani were codified in a secret bilateral Development Agreement later leaked to the public. The agreement defined a 'stability period' of fifteen years during which contractual conditions would remain stable. It exempted Glencore and FQM from covering ZCCM's financial liabilities (including pensions for ZCCM workers) and environmental legacies, and from paying most taxes (Adam and Simpasa 2010, 67–8). Although the Development Agreements ceased to be binding following their cancellation in the Mines and Minerals Development Act 2008 (something FQM never accepted, see Chapter 1, footnote 5), many of their provisions remain in place. Global copper prices rose sixfold after Glencore's acquisition of Mopani, from US$1,500 per ton in 2000 to over US$10,000 in February 2011. Due to the privatization of mining assets and an unfavourable tax regime, little of the ensuing profit remained in the country. Government's multiple attempts to increase revenues from mining have largely failed due to companies' bargaining power (Manley 2017; Saunders and Caramento 2018, 5–9). Until early 2021, Glencore was the fourth-largest copper producer by output in Zambia after FQM, Barrick Gold and Vedanta. It also owns Sable Zinc Kabwe Limited, a copper and cobalt processing plant in Kabwe (Glencore 2018, 192), Mutanda mine and 74.4 per cent of Katanga Mining in neighbouring DRC.

Employees of other Zambian mining companies we spoke to felt that Glencore was driven by a different, non-mining logic (see also Lee 2017, 65). Its readiness to put the mines on care and maintenance in times of crisis, for instance, in situations when the Zambian state increased electricity prices or, as mentioned above, during the global Covid-19 pandemic, substantiates this impression. Mopani Mines under Glencore's majority ownership were often in the news, be it for air pollution (sulphur dioxide discharge) or intermittent closure, and other Western,

privately owned mines operating in Zambia are anxious to distance themselves from Glencore and its local practices.

FQM, in particular, wants to be seen as a completely different company. Unlike Glencore and the Chinese state-owned mining operators, one Kansanshi manager told me, 'We are an ethical company.'[5] And when I asked another Kansanshi manager about the initially tight and later cooled-off relationship between Glencore and FQM, he said: 'The thing is, they are not the most trustworthy bunch,' adding that they would often breach contracts. The late Andrew Sardanis, Kaunda-appointed chairman and later managing director of the post-independence state's Industrial Development Corporation Indeco, did not mince his words either in our conversation in 2017: 'Glencore is a bunch of crooks.' (He did not speak particularly well of FQM's founding brothers, Philip and Matt Pascall, either. 'Well, if you go by their origins … you know who they are? They are from Rhodesia' – whose white inhabitants, to Sardanis, embodied all things colonial.)

In 2019, the Zambian government seized control of Vedanta's Konkola Copper Mines, but handed it back in 2023.[6] In January 2021, Glencore and FQM sold their shares in Mopani Mines to ZCCM-IH for a $1 and a transaction debt of US1.5 billion. Glencore kept the exclusive right to all copper products until the debt is repaid. Glencore's presence in Zambia thus changed from a miner to an off-taker – and a creditor of the Zambian state. How the 51 per cent-takeover of Mopani Mines by the United Arab Emirates' equity partner International Resource Holding (IRH) in 2024 affects this agreement is still to be seen.

Trade

In Switzerland, as well, Glencore has not the best of reputations. The company goes back to Marc Rich & Co AG, registered in Zug, Switzerland, in 1974. Rich, by then on the F.B.I.'s ten most wanted fugitives list for charges of, among others, tax evasion, racketeering, and evading US sanctions in trading with Iran, sold his trading business to the company's managers in 1993. (He was later famously pardoned by Bill Clinton on his last day in office, after Rich's wife Denise Rich had donated more than US$1 million to the Democratic Party.) The new company, Glencore, went public in 2011 and merged with Swiss mining giant Xstrata in 2012-13. Today, it is the world's largest commodity trading company. Glencore plc is incorporated in Jersey and domiciled in Baar, Switzerland. Shareholders in Glencore plc include institutional investors, such as Qatar Holding (8.27 per cent) and BlackRock Inc. (7.97 per cent), but large shares in the company are owned by managers, for example, former CEO Ivan Glasenberg (9.58 per cent) (Glencore 2023, 138).[7]

Employees of other Swiss trading companies often present Glencore as an opaque and somewhat shady behemoth far too much in the centre of public scrutiny, which has the potential to also harm other members of the umbrella Swiss Trading and Shipping Association (STSA, since recently also known as SUISSENéGOCE), which Glencore later resigned from. If Glencore has become

an outsider in the Swiss trading industry, its business model of extending its reach along the value chain since the early 2000s has still been admired and copied by many of the industry's giants. In an age of more readily available pricing information and consequently declining margins from arbitrage, vertical integration came to be seen, for a while, as key to reliable margins (Bloomberg 2017). While Glencore as a trading firm has moved into production, producers have put more emphasis on trade and in-company trading arms.

How does commodity trade work and why has Switzerland become a global centre for it? When copper from Kansanshi Mine in Solwezi – which is mined and smelted and turned into concentrate, cathodes and anodes, and blister (turned into anode on-side) – crosses Kansanshi's 'mine gate', it has already sold to another company (although ownership only changes when the payment is completed). Except for concentrate, which is sold to smelters, if possible, the buyers are not economic actors – producers, who need physical copper for production, or consumers. Rather, they are specialized traders, who then sell it on to other traders or to producers. While FQM is primarily a producer, through its FQM Trading AG, it is thus also a financial investor, a speculator.

Traders – or a producer's trading arm, for that matter – have a double role. On the one hand, they render services to producers and consumers by allocating copper more cost-efficiently than either consumers or producers could do it on their own. Traders have access to many producers and consumers and can save on transport costs by matching supply and demand across different regions of the globe; they finance transport and storage of commodities, allowing producers and consumers to optimize cash flow and save costs; and they can more efficiently hedge against market risks than smaller actors could, keeping costs for other actors stable and predictable. For these services, they receive a share of the production network's overall profits. This share is, at least in textbook economic theory, smaller than the costs the other actors in the production network would have without the traders – otherwise customers would circumvent them and source their copper directly from the mines. Trading firms thus ideally make the production network more efficient. If their business is centred on the allocation element of trade, trading firms typically make relatively small, but predictable profits on each transaction. Their profits add up from high volumes rather than from high margins.

On the other hand, trading firms engage in speculative trade to increase their own profits. They try to anticipate price developments and bet against the markets. In this side of their business, traders are not the agents of either producers or consumers, but act for the interest of capital owners (and their own bonuses). Traders argue that much of speculative trade is in the interest of all market participants since it contributes to fair pricing and overall price stability. Critics however point out that speculative trade creates high risks and contributes to a concentration of profits in the hands of big capital owners while externalizing market risks to less powerful investors.

While mining and, to a lesser degree, industrial production is strictly localized, commodities can be bought and sold independently of their physical location. This

has allowed Switzerland, a landlocked country without many natural resources, to become one of the most important hubs of global commodity trade (Haller 2019).

Switzerland has a long history of trade and has often profited from trade commodities – from slaves to cocoa and coffee (Fässler 2005). Partly growing from such earlier roots, Swiss commodity trade has taken off to a surprising degree over the past two decades, surviving the financial crisis unscathed (Beusch et al. 2013). Several factors have combined to turn Switzerland into a commodity trading hub (see also Chapter 1). The country has all the infrastructure traders need. Quick and secure access to finance and insurance, excellent virtual and physical global connections, a vibrant shipping industry, trader-friendly regulations, the proximity to international standard setters (most importantly the different UN organizations and the plethora of international lobby groups in Geneva), a highly skilled workforce, a flexible labour market and a very low corporate tax rate are just the most important factors here. Swiss neutrality and its non-membership of the UN until 2002 was another crucial element, since it allowed companies to engage in trade with countries under UN sanctions, such as apartheid South Africa or Iran.

A great many international commodity traders have their headquarters in Switzerland today. Their variety is huge – from the integrated mining and trading behemoth Glencore to large, specialized trading houses like Gunvor to trading divisions of banks and investment firms to small independent traders. There is no single statistics for the trading sector and the Federal Council can only offer estimations as to its size: an estimated 966 firms are involved in commodity trading as traders; they employ approximately 10,318 persons. Most traders work in firms with less than 250 employees, but the large traders have recently grown quickly. Part of the commodity sector are also firms active in trade-related activities such as finance, certification, auditing, transport, insurance, warehousing with approximately 1,644 employees (Bundesamt für Statistik 2023, 1).

What role do these Swiss trading companies play in the global production network of Zambian copper? Export statistics offer a first approximation. According to UN Comtrade figures, around 40–50 per cent of Zambian copper has been exported to Switzerland every year between 2006 and today. These statistics substantially underreport the percentage of copper traded by Swiss firms, since transit trade is difficult to classify in customs statistics. Zambian customs usually classify copper exports according to destination countries (i.e. the country to which the goods are shipped). Only when no final destination is known at the time of the sale, the buyer's country is recorded instead.

Zambian copper bought by Swiss traders is never shipped to Switzerland. Much of it is sold in transit, often from bonded warehouses. This copper will be recorded as exported to Switzerland; copper bought by Swiss companies and shipped to a known third country will be recorded as exported to this third country. When, for example, a Swiss trading company has an offtake agreement with a Zambian mining company and supplies half of this copper to a firm in China while it sells the other half from a bonded warehouse in Johannesburg, half of the copper bought at the mine will be recorded as exported to China, half as exported to

Switzerland – even though all of it has been traded by a Swiss company. The percentage of Zambian copper traded by Swiss companies is thus probably much higher than the export figures show.

Who a company's off-takers are is not public knowledge even for publicly listed companies. FQM is a case in point. Only with the help of extensive preparatory research and subsequent interviews with managers of FQM's Kansanshi Mine could I find out whom Kansanshi Mine sells its copper to. In its Annual Information Forms, FQM claims that it has 'a limited number of off-takers' (First Quantum Minerals Ltd. 2023a, 130). This is something of an understatement. Since Kansanshi started production in 2005, it has sold its copper to two – albeit changing – off-takers only. Both have always been registered in Switzerland. Since 2010, one of them is a company fully owned by FQM itself.

In the first few years since Kansanshi started production in 2015, the two off-takers were Glencore (for concentrate and cathodes) and Republic House (for cathodes) (First Quantum Minerals Ltd. 2006, 15). Glencore bought between 75 per cent and 85 per cent of cathodes and Republic House bought the rest. At that time, FQM did not have its own smelter in Zambia. The concentrate was thus sold to Zambian smelters; a big part of which was toll-treated at Glencore's Mopani Mines smelter which subsequently bought the cathodes.

Republic House registered as a company in Zug in 2000 and was mostly made up of traders who had worked for MRI, another Swiss trading company. At least since 2005, Republic House was owned by Energem Ressources, an old player in the Southern African mining sector. (Founded as DiamondWorks, it had changed its name in 2004 after allegations of blood diamond dealings.) 'Very competent guys', as one Kansanshi manager told me, 'It was a natural progression to start selling our produce to them.' In 2010, Republic House became a fully owned subsidiary of FQM. In preparation to a takeover of Republic House by FQM in 2010, Energem founded Metal Corp Trading AG in Zug (Metal Bulletin 2010a, 2010b; Wikileaks 2005), a company fully owned by Metal Corp (Sweden) AB, itself a fully owned subsidiary of FQM. From 2010 onwards, FQM's Kansanshi Mine has sold a large part of its copper products to FQM's Swiss trading company Metal Corp Trading AG. In December 2022, Metal Corp Trading AG was renamed into FQM Trading AG.[8]

After ten years, in 2015, Geneva-based Trafigura replaced Glencore as Kansanshi's non-FQM off-taker for cathodes. Trafigura 'aggressively' entered the cathodes market in the region around 2015 and proved, as a manager recalled in an interview, a far more reliable partner for Kansanshi in terms of turnaround of payments than Glencore. Since then, und most likely until today, Trafigura buys 75–80 per cent of the cathodes, and FQM Trading AG buys 15–20 per cent of the cathodes and most of the anodes. (Kansanshi started producing anodes and blister when the new smelter on-site started operating in late 2014.) The concentrate is sold to several smelters, inside (among them the Mopani smelter in Mufulira – 'to keep the relationship', as I was told) and outside Zambia. FQM Trading AG handles all trades for Kansanshi Mine, including the logistics from mine gate. Contracts are long-term, but the terms are negotiated annually.

Beyond Kansanshi Mine, FQM Trading AG most probably handles a large part of FQM's produce from its mines across the world (Mineman 2015).[9] As any trading company, it handles trade finance and LME hedging and supports logistics, trading, operations, and sales contracts for FQM's base metals contracts.

I made one of Kansanshi's manager laugh when I asked for more details of (what was then) Metal Corp Trading's Swiss presence: 'They probably have a brass plaque there!' Indeed, FQM Trading AG/Metal Corp Trading has an acrylic glass plate and a letter box at Chamerstrasse 12A in Zug, close to Lake Zug (see Figure 26). Its main business is carried out through offices in London at the Charlotte Building at 17 Gresse Street, the same building as FQM Ltd.'s UK headquarters, and through a smaller office in Johannesburg, South Africa.

For FQM Trading AG's trading arrangements, Switzerland is not important as a physical place. The copper it buys and sells does not reach the country. Its traders are not working on the shores of Lake Zug; perhaps not even the profits are stored in Swiss banks. 'Switzerland' is a regulatory regime to which FQM Trading AG rents access by paying the minimal fee of Zug's taxes. This virtual Switzerland of course intersects with the physical place. Many other trading companies have a much larger physical footprint in Switzerland, but for all of them, access to the Swiss regulatory regime is a primary asset.[10]

Figure 26. A typical Swiss letterbox along the Bahnhofstrasse and the Baarerstrasse in Zug, Switzerland. The many names are linked to the office of a law firm or a fiduciary representing companies choosing Zug for the Swiss and cantonal tax regimes. Zug, Switzerland, August 2021. Photo by author.

Transport

When living in Solwezi, the aspect of urban life that never failed to fascinate and remind me that Solwezi was a mining town was the trucks thundering along Kansanshi Road and Independence Road. Copper sheets are strapped down to the trucks' beds; and often the trucker tied several charcoal sacks to the side of his vehicle to cook a warm meal at night during his journey to the harbours. It is a long journey out of land-locked Zambia: 2,700 kilometres to Durban, South Africa; 2,000 kilometres to Walvis Way, Namibia; and 2,100 kilometres to Dar es Salaam, Tanzania, the three harbours from where most of Zambia's copper is exported on container ships. On his way – usually by road – from the mines and smelters to warehouses and harbours, the trucker must cross at least one, often several national boundaries. He has to deal with difficult road conditions, frequent congestion and border delays, and sometimes theft (cf. Lamarque 2019; Zeller 2019).

Since copper is costly to transport on land, transport costs to the harbours are a crucial factor for pricing and profits. Today, copper's world market prices are very transparent, and opportunities for arbitrage become scarcer with the omnipresence of electronic media and reporting, so that profits made on the figurative 'first and last mile' become increasingly important for traders' income (Franke, Rechsteiner and Sharp 2017, 5). Here – in Zambian trucking, in warehousing, in cross-border paperwork – presence on the ground, local knowledge and good connections to both local authorities and cross-border actors are indispensable (Dobler 2016), and information about transport costs is much less transparent than information about copper market prices. Consequently, some global commodity traders increasingly invest in the entire transport chain in order to become independent from logistic companies and gain control over profits in these crucial segments (Pirrong 2014, 40). Swiss companies are no exception. While Glencore has mainly invested in trucking companies transporting copper from DRC, Trafigura has moved into warehousing on the one hand, the upstream petrol logistics fuelling all transport on the other (see below).

Glencore uses the trucking company Muzuri Sana to transport copper from its Mutanda mine in DRC to warehouses in Zambia. This company, according to Zambian interview partners, is a joint venture between Mutanda and Hakuna Matata, the trucking business owned by former Katanga governor, mining mogul and opposition presidential candidate Moise Katumbi. (In a very similar arrangement, neighbouring Tenke Fungurume Mine transports its copper to Zambia using Habari Kani trucking, also co-owned by Hakuna Matata.)

These companies transport copper and cobalt from DRC's Katanga Province to Zambia through Kasumbalesa border post. They offload in the Copperbelt and take mining supplies back to the DRC. Subsequent transport from the Copperbelt to the harbours is handled by different companies. The main reason for this arrangement is the difficulty of transporting goods through the DRC. Legally, commodities extracted in the DRC must be transported by companies registered

in the DRC using Congolese drivers. More importantly, truck drivers we spoke to indicated they needed a lot of local knowledge and connections to navigate controls on DRC roads – a rather different set of qualifications than that which is needed for the routes to Gauteng or Dar es Salaam.

Swiss firms also invest in transport infrastructure such as railway networks and harbours. For instance, Trafigura through the trading and logistics company DTS, initially a 50/50 joint venture between Trafigura and General Dino's Cochan and since 2021 a company wholly owned by Trafigura, has invested towards the reopening of a crucial train route from Kolwezi in the DRC to Lobito harbour in Angola (Zambia Chamber of Mines 2018). The Lobito Corridor is also one of the economic transportation corridors the United States and Europe intend to invest in with the aim of diversifying supply chains for critical minerals. And in 2012, Geneva-based Vitol acquired a 35 per cent stake in a subsidiary of the South African shipping firm Grindrod, which gives it access to a coal terminal in Mozambique.

Swiss companies' role in transport does not stop at the harbours. Although Switzerland does not have any seaports, the world's second-biggest container shipper, Mediterranean Shipping Company (MSC), is headquartered in Geneva. Just as its competitors Maersk and CMA-CGM, the company is an important player in copper shipments from Southern African harbours. All three companies offer through bill of lading services for Zambia, but since copper transport can usually be planned ahead and are highly routinized, most shippers prefer to organize their own transport, so that vessel owners like MSC only come into play at the harbour terminal.[11]

Warehousing

Looking at the net of transport routes on which to transport copper from Zambian copper mines to the harbours in the region, the town of Ndola is a node point. Ndola, today's capital of the Copperbelt Province and an old inland post in the region's trading routes, is host to the international school where mine managers and expatriate white-collar workers send their children to school but also to much of the country's service industry and its only oil refinery. The town thus serves as an ideal place to store, repack and blend copper products – in short: warehousing, which is another integral part of logistics management.

In earlier years, Zambian copper was usually stored on the mine grounds in wait for being shipped. Today, copper is mostly shipped immediately after production and stored in bonded warehouses in Ndola in the Copperbelt or in neighbouring countries. Many of these warehouses are operated by international logistics companies. To these companies, warehouses are crucial for optimizing truck and rail loads, for storage, repacking and blending and to regulate cash flows by storing and releasing value.

In Zambia, most international logistics companies concentrate their efforts on the route to one specific harbour. J&J, for example, a Mozambican company,

is concentrating on transport to Beira, while the French logistics giant Bolloré specializes on the route to Durban. The main Swiss player in the sector is Impala Terminals, Trafigura's logistics arm. Impala has heavily invested in infrastructure along the Kolwezi–Lubumbashi–Ndola-Dar es Salaam corridor. The company operates the largest single-customer terminal in Dar es Salaam harbour and uses its resources to channel copper transports to Dar (and to influence trade policies in Tanzania, including taxation and rail development). The company owns bonded warehouses in Kolwezi, Lubumbashi, Ndola and Dar, all of which have road and rail connections and can handle 20-feet and 40-feet containers as well as break-bulk. Along the road to Dar es Salaam, Impala has constructed dedicated truck stops as safe stopping points for copper transports (Impala Terminals 2016, 35).

In addition to serving Trafigura's own transports, its Ndola warehouse is an important hub for third-party copper transports from DRC and Zambia to Walvis Bay and Durban. The same is true for the second newly constructed copper warehouse, Bolloré's Chingola hub. Its main purpose is to serve as an entrepot for DRC copper and as the meeting point for the southern and northern fleets of trucks. This US$10-million investment opened in May 2014 and today handles around 360,000 tons of copper, cobalt and mining reagents per year. In addition to its warehouses, trucks and terminals, Bolloré is also the biggest clearing agent in Zambia for third-party shipments (Bolloré 2018).

Most haulage, whether by road or rail, is still done by Southern African companies like BHL, J&J or GSM – some registered in Zambia, others in South Africa, Namibia or Mozambique. The strict contract conditions for copper transports can only be met by large transport companies, who usually own and operate a few hundred trucks. Copper cathode is transported to warehouses on either flatbed or container trucks, while transports to the harbours are exclusively done in containers to avoid reloading. (Before being loaded into containers, copper transported on flatbed trucks has to be washed, a service not all warehouses can offer (Smal 2015)). Transport contracts usually insist on convoys, GPS tracking and armed security personnel.

Fuel

'Kansanshi Mine itself uses 8 to 10 million litres of diesel per month,' a manager told me. Getting it to Kansanshi is one of the biggest challenges the mine faces due to poor road maintenance, though. Just like excavators and mine trucks, trucks and diesel trains need fuel. Supplying fuel to Zambia, its mines and transport system, and the neighbouring countries, is an integral part of copper logistics and one in which several Swiss companies play an important role.

Through Puma Energy, Trafigura has become one of the most important distribution companies for petrol products in Southern Africa. Puma Energy, in which it initially held a 49 per cent stake was controversial from the start, especially with respect to its Angolan investment; 28 per cent of the company, which owned most of Angola's downstream petrol business, was in the hands

of Sonangol, the Angolan state oil company; another 15 per cent was owned by Chochan Holdings, a company founded and owned by General Leopoldino ('Dino') Fragoso do Nascimento, one of the wealthiest and best-connected Angolan businesspeople-cum-politicians. In 2011, the company bought stakes in the BP stations in Namibia (100 per cent), Botswana (100 per cent), Zambia (75 per cent), Malawi (50 per cent) and Tanzania (50 per cent) and took over a huge storage depot in Walvis Bay.[12] After leadership change in Angola, Trafigura dissociated from its problematic Angolan connections by reducing Puma Energy's shareholding controlled by General Dino in 2020 and purchased Sonangol's shares in Puma and selling its Angolan business and assets to Sonangol in 2021.

Puma is also active in Zimbabwe. In 2014, Puma Energy Africa Holdings acquired a 49 per cent stake in the Zimbabwean company Sakunda Energy, a monopolistic fuel distribution company founded by Kudakwashe Tagwirei, a well-connected businessman with close ties to the Zimbabwean military. Through Sakunda, Puma controlled the Feruka pipeline, through which 90 per cent of Zimbabwe's fuel is imported, between its storage facilities in Beira and Harare. A deal between the Zimbabwean government and Sakunda allows exclusive use of the pipeline from the border between Mozambique and Zimbabwe to the dry ports in Harare which results in Trafigura's de-facto monopoly on fuel supply in Zimbabwe and control over its costs. This has become a major political issue in the conflict between President Mnangagwa and the military (Africa Confidential 2018). Business partner Tagwirei also increasingly became an international liability for Trafigura, which was probably one of the reasons why Trafigura bought out Sakunda in early 2020, renaming it into Trafigura Zimbabwe.

Vitol and Glencore are the two other major firms controlling fuel supply and distribution in Zimbabwe and the region. Geneva-based oil trader and the second-largest Swiss firm by turnover, Vitol recently took over Shell's and Engen's network of service stations in Southern Africa through its major stakes in the fuel retailer Vivo Energy, the company behind the Shell brand in Africa (co-owned by Helios, an investment firm). Another player in Zambia and the region has been AOG, the Addax & Oryx Group, which was founded by Swiss traders in Geneva in 1987 (for more on Swiss fuel traderse, see Public Eye 2016). It quickly expanded from oil trading to oil storage and distribution. Today, its energy subsidiary Oryx Energies owns 26 service stations across the country and fuel storage facilities and lubricants warehouse in Ndola (Energy Regulation Board 2022). These firms increasingly eye the upstream market – exploration and production.

Testing, certification and surveillance

Another very important, but often overlooked element in logistics is the certification and surveillance of goods. Traders often do not themselves have the possibility to assess the quality of the goods they buy and sell. Banks financing trade deals have to know their securities are worth as much as the debtor claims. Insurance companies must make sure the insurance cover corresponds to the

goods' value. Buyers want to ensure products match their specification before having them shipped. State agencies evaluate royalties according to metal content. In all these instances, independent inspection and verification services increase trust and enable anonymous transactions.

Perhaps not surprisingly, one of the biggest inspection companies is based in Switzerland: SGS (formerly Société Générale de Surveillance). SGS has a large footprint across the world, certifying everything from hazelnut spreads to nuclear plants, from labour rights to metal content and from fair trade to food safety. Through its involvement in industry bodies and multi-stakeholder initiatives, it is one of the most important private standard setters in the global economy (Bartley 2018; Peters et al. 2009). The company is active in many African countries. It runs Uganda's vehicle inspection; operates weighbridges, electronic cargo tracking services and import verification services for the Kenyan government; and supervises road contractors in Senegal.

In Zambia, SGS owns a laboratory in the small Copperbelt town of Kalulushi that many mines rely on for ore testing; Glencore, for example, used the lab for its samples during the establishment of Mutanda mine (Glencore 2011, 46–7). Similar SGS laboratories operate in South Africa. Even more importantly, SGS supervises container packing in warehouses in South Africa and Tanzania and certifies their content. This service is crucial for trade, insurance and financing; along with its competitors Alfred H. Knight and Alex Stewart, SGS is one of the most important players in Africa and the world. All three companies are also among the listed samplers of the London Metal Exchange.

Customs

A final Swiss input into the Zambian parts of copper's global production network needs at least to be mentioned: every good that is imported into or exported from Zambia – be it machinery, copper, sulfuric acid or oranges – is processed through a Swiss service export. Like most countries in the world, Zambia uses Asycuda (Automated System for Customs Data, currently Asycuda World) to process all customs documents. This integrated customs management software has been developed by UNCTAD in Geneva. It is one of the least known, but most important technical media of trade facilitation and standardization. In a cloud-based service running on servers in Lusaka, transporters, clearing agents and shippers can electronically enter shipments for customs (pre-)clearance. Despite many problems, mostly linked to server downtime, the use of Asycuda has significantly improved workflows and transparency of Zambian customs and greatly accelerated processing times at the borders. It provides the state with the necessary instruments to collect revenue and gather accurate trade data; it eases financing and insurance and allows transporters and owners better control over their shipments. The software is thus a crucial factor in reducing transport costs and increasing efficiency, and neither transport corridors nor one-stop border posts would really work without it (Nugent and Soi 2020).

This might sound universally benign, but it also creates important and understudied distribution effects. Lower transport costs change the distribution of profits within the global production network: benefits for producing and consuming countries are generated by decreasing revenues in mining and transit countries. For resource exporting countries, they might well contribute to a further externalization of profits, which would have to be offset by taxes or royalties to finance the infrastructure on which they rely.

Value capture in global extractivism

Swiss companies are active in different ways in global production networks of copper mined in Zambia. Here, I have only analysed the relatively small segment between mining and Southern African harbours. I have not considered what happens upstream from mining – say, in mining machinery, supplies, patents or engineering education – nor have I analysed subsequent processing after copper leaves the continent (on harbour logistics, see for instance Arboleda 2020, 109–39 for Chile; Paremoer 2015 for South Africa). I have completely ignored finance and insurance, in which Swiss companies play a crucial role globally, and have left aside the role of Swiss capital invested elsewhere.

Despite such limitations, a clear image has started to emerge. Switzerland's role is more important than most people would have assumed. While only one of the five major mining companies in Zambia is headquartered in Switzerland, a substantial part of copper trade, logistics, certification and, to some degree, transport are conducted by Swiss companies. It is very difficult to quantify Swiss involvement; exact figures are hard to come by and the 'Swissness' of multinational firms is often impossible to measure. Yet for a country of just over 8 million inhabitants, Switzerland certainly plays an outsized role. While the country's transit trade has been attracting more scrutiny over the past years, other aspects of Swiss involvement have largely remained unnoticed.

If the data can be generalized, Swiss companies involved in commodity extraction typically invest in services rather than in extraction itself. Services, unlike extraction, require a comparatively low or mobile investment and provide stable profits relatively independent from prices. Techniques and know-how, which of course are very important for these services, are usually much more adaptable to different commodities than is the case for extraction. In short, services are more mobile and less dependent on one single country or one single commodity market than mining.

This tendency towards flexibility explains the avenues in which Swiss services companies usually expand into developing markets. They acquire successful local companies and integrate them into a global brand. Through such acquisitions, they can appropriate local expertise and credibility and combine it with their own global reach and international reputation. This, as well, allows companies to balance different markets against each other, keeping losses local and appropriating gains (see also Parker, Cox and Thompson 2018, 56).[13]

Not all Swiss companies are the same. Some have originated in Switzerland, while others have only recently moved there. Different global companies are attracted by different aspects of the Swiss model; some look for a favourable tax regime and do not need much more than a letterbox in Zug, while others seek access to the trade and finance hub and the qualified personnel working in it. Some Swiss companies – Glencore or Trafigura – are themselves vertically integrated, extending their limbs into many countries, while others – FQM Trading AG – are merely one local part of a global company (First Quantum Minerals).

Despite these differences, many Swiss players in the service economy can profit from global extraction largely without suffering from the downsides of extractivist dynamics. Swiss firms typically build and maintain the infrastructure of global commodity trade instead of committing to the big, localized investment needed in mining. Doing so, they continue a long history of Swiss facilitation of global trade, from slave trade to apartheid gold. 'In the end, the Swiss always win' (Ramge, Schwochow and Garcia-Landa 2018, 92).

Conclusion

In Solwezi, one of the main political issues surrounding the mine is Kansanshi Mine's low employment rate of 'locals', that is, of people who have had little to no experience in the mining industry. They find it hard to compete with experienced miners and established suppliers from the Copperbelt towns (Caramento 2020; Kapesa and McNamara 2020; Negi 2010), generally summarized as 'the Bembas' in reference to the dominance of people originally from the Eastern Province in the Copperbelt towns since the inception of industrialization in the 1940s (e.g. Ferguson 1999; Epstein 1958; Mitchell 1956; Richards 1939). While this is indeed a question of being able to feed one's family and experience respectability, this very localized conflict pits Zambians against Zambians and tends to deflect from a much larger situation of asymmetry: the economic structures of extractivism which benefit foreign investors and leaves very few opportunities for Zambians to profit from the extraction of their minerals.

Social scientists who work on extractivism, as well, often focus on the sites of extraction: on mines, oil fields or plantations. If we however define extractivism as a situation where a country like Zambia relies on the export of raw materials that creates economic and political dependence and redirects profits to other countries (Acosta 2013; Gudynas 2018), we must take the *entire* structure of this political economy into account. When we stand at the roads of Solwezi and are seized by a cough because of the dust raised by trucks laden with copper, we must follow these trucks and take note of the many economic actors involved in bringing the copper to the producer and consumer. We should also try to not only speak with corporate social responsibility staff in town, who often warmly welcome us, sell us, if at all, a narrow perspective of mining's externalities and how their employer allegedly alleviates them, but to get access to managers and other decision-makers.

This is where we can learn about the system of extractivism – but also where we will sooner or later be blocked from asking further questions.

Between their extraction and their use in global industrial production, commodities are financed, insured, moved, stored, cleaned, weighed, blended, bought, sold, certified, tracked – to mention just a few downstream activities. Service providers such as trading firms, transport and shipping companies, financial institutions, certification and software providers are as important agents of commodity extraction as mining companies. These segments of global production networks figure less prominently in the literature. The ensuing imbalance distorts our image of the ways in which commodity-exporting countries are embedded into the global economy.

Scholars of global value chains have long been interested in the different ways value is added to goods along their journey (Gereffi 2014), while theorists of global production networks highlight the functional role of intermediaries such as financial, logistics and standard-setting agents (Yeung and Coe 2015, 42, 50). More recently, a new focus on the 'servicification' of global value chains has made clear that manufacturing firms in advanced economies frequently generate a high percentage of their revenue through service provision (Miroudot 2017). Most studies on servicification, however, have focused on industries in Europe, the United States and Asia, and little is known about the extent to which services contribute to value addition in mineral extraction in African countries.

Servicification affects the distribution of profits as much as the globalization of mining does. Economists have argued that asymmetrical power structures in global value chains lead to an uneven distribution of profits (e.g. Heintz 2006; Milberg 2004), and that domestic value addition can decline with the integration into global value chains due to 'the injection of foreign high-skilled labour content in their exports' (Caraballo and Jiang 2016, 289) – a process as clearly visible in the share of expatriate workers in the higher pay grades of Zambian mines (see Chapter 4) as in the reliance of logistics companies on know-how produced in higher-paying countries. When it comes to mineral extraction in Africa, analyses of these tendencies have rarely taken the service sector into account. The qualitative analysis here shows that higher-skilled service tasks that create stable added value are increasingly taken over by international companies.

These trends change the distribution of profits in global production networks. In such networks, many actors in different countries jointly create value which, when it meets demand on the market, can translate into profits. The production network does not only organize the cooperation between the actors; it also is a mechanism to assign a relative value to each of the actors' contributions, and to remunerate them accordingly. The different actors have different capacities to convince others of the value of their activities and, consequently, to capture value within the network.

Dependence on commodity extraction is problematic for poorer countries for two main reasons. First, it leaves them with only those segments of the production network in which relatively little value is (defined as being) produced. Secondly,

a comparatively large percentage of the profit generated even in these sectors is exported to other national economies as dividend on capital investment, so that it cannot be invested to develop economic alternatives to extraction in mining countries.

As the discussion of Switzerland's role in Zambia shows, both arguments hold true for the infrastructure of extraction. Between the mines and the harbours, a great many actors add value to copper – from states building roads and railways to logistics companies to truck drivers, filling-station attendants, security guards or roadside food sellers and charcoal producers. Each of them creates value, but their ability to capture parts of the overall value creation widely differs. Swiss companies are among those who have been most successful in getting a share of the value added to copper between its extraction and its use in industrial production. Their competitive advantages allow them to flexibly invest in the most lucrative segments of copper's production networks. As a consequence, they are able to generate and appropriate an increasing part of the profits generated in the Southern African segments of copper's value chain – profits that then improve lives on the shores of Lake Zug (i.e. in years that companies actually pay tax on earnings (Jey Aratnam 2015, 420)), not in Zambia.

The preconditions for Switzerland's favourable place in global commodity chains are know-how, access to finance, global reputation and not least political stability. These have also turned the country into a centre of international organizations and global regulation – a proximity that again creates an advantage for companies based there. All these advantages allow Swiss companies to control essential parts of copper's global production network, and to generate a great amount of profits on the way.

The unequal distribution of profits should also make governments think twice about the usefulness of infrastructure projects that link the sites of extraction to global markets (Nugent 2018). They might increase economic activity, but without additional changes, the odds are that global companies will earn the windfalls while national taxpayers will face the debts (see Chapters 2 and 5).[14]

In the financialized global economy, capital owners' shares in profits have been increasing for decades. Since the capital invested in extractive industries and related services generally comes from rich Northern countries, this has also shifted the balance of profits between the Global North and the Global South. Attempts to redress this shift and to increase the share of profits remaining in a commodity exporting country can use each of the classic factors of production as a lever: land by increasing mining royalties; labour by negotiating better wages, higher-paying jobs or higher rates of employment; and capital by increasing either taxes or ownership. Zambia has tried, and failed, on all these fronts, and despite the commercial success of its mining sector, the country is confronted with dramatic economic insecurity.[15]

In Chapter 3, I describe the 'disorderly' town of Solwezi and how residents make their own order under given circumstances by putting in their labour power to make a home for themselves and the many other migrants attracted by the large investor. The town's 'disorder' is partly produced by the mine, its

blasts and expansion and the general insecurity of planning an industry reliant on the global market generates. It is however even more a product of the entire political economy of extractivism where Swiss companies (and many others) have found lucrative, low-risk investment opportunities in Zambia by targeting mineral logistics and trade. Mining in Zambia creates a steady stream of income for companies registered in Switzerland, while much of the economic, political and environmental costs of mining are borne by Zambians. The ongoing unpaid and unrecognized construction and constant maintenance of Solwezi town by its residents lies in stark contrast with the built environment of the Swiss town of Zug, host to many of the service businesses described above, which exhibits structures going back to the middle ages and has benefitted from capital inflow from global trade at least since the mid-nineteenth century (Haller 2019).

'Decentring the mine', so to say, therefore means that we do not unthinkingly accept economists' perspectives about the production of 'value' in global value chains. Economists typically have a narrow interest in the monetary value of goods and services traded in a market regulated by offer and demand.[16] This perspective normalizes the equation of value and price instead of asking how and why different prices are assigned to activities that create social value. To understand Zambia's place in the global economy of extractivism and to show what implications this place has for everyday life in Zambia, a broad conception of global production networks which explicitly includes reproductive labour at the household and the community level needs to be adopted. As feminist scholars in particular have shown, many significant contributions to value creation become visible in such a perspective that remain hidden if we equate value with market price. Maria Mies (1986) famously challenged a theory of capitalism based on wage labour alone and instead put the household and women's or feminized labour at the centre of a global analysis of capitalism. Along a similar line of argument, Wilma Dunaway (2014) shows that commodity chains routinely incorporate multiple forms of labour, including non-wage, unfree and non-compensated work, much of it done by women. The fact that the returns are distributed highly unequally should not seduce us into ignoring this labour and its value creation. Including the reproductive labour of household members and entire communities (Banks 2020; Benya 2015) is key to any empirical analysis of global production networks, but it is not sufficient. We must also include those who reproduce capital: for example, Swiss voters and residents of Zug, seat of large trading and logistics firms. People paying into pension funds that invest in extractive infrastructure and taxpayers living in tax haven communes cannot be ignored if we truly want to understand global interdependence – and avenues for more equality.

The image of Swiss extractivism would neither be incomplete without including the public climate in which companies operate. CSOs, NGOs and politicians (and sometimes researchers) have the potential to influence what value companies can and cannot capture, and they form a crucial part of the environment in which companies take strategic decisions. Companies are not invulnerable to reputation risks, and the public climate in both Zambia and Switzerland has become

increasingly critical towards commodity extraction. The following, final chapter will examine the ways in which people in both Switzerland and Zambia can relate to each other despite a strong discursive separation through capital; it sketches proposals for action and probes the potential for joint symmetrical action across space and lifeworlds.