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Zambia mining sector fiscal benchmarking and assessment

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1 Introduction and outline

This research note was commissioned through the DFID PEAKS Helpdesk facility and written during January 2013. It main objective is to place Zambia's mining sector fiscal regime in an international context by answering the following question:

- How does the tax regime for mining compare internationally, in terms of absolute measures of key tax rates and subjective perceptions among of mining investors?

Its secondary objective is to provide a short commentary on how effectively Zambia is collecting and managing its mining sector revenue.

Given the limited scope and short turn-around for this request, the author has drawn on readily available secondary materials collected from publicly available and 'grey' literature (e.g. government and donor reports). The research note aims to highlight key features of the Zambian fiscal regime for mining, to illustrate how these features may be perceived by investors, and their implications for effective revenue collection and management. It does not pretend to represent a full catalogue and in-depth analysis of all relevant aspects of this fiscal regime.

The research note is structured as follows:

1. Country context and mining sector developments
2. Zambia's mining fiscal regime in international context
3. Challenges of effective collection and management of mineral revenues
4. Summary and key messages

2 Country context and mining sector developments

At the time of independence in 1964 Zambia was the third-largest copper producer globally. The mines were nationalised in the early 1970s, but copper production collapsed in the 1980s and 1990s due to a combination of circumstances. These included adverse market conditions resulting from the oil price crises of the 1970s (declining international commodity prices and adverse terms of trade movements)[1] and government policies that diverted funding towards the pursuit of socio-political objectives rather than new capital investment into the mines.

The collapse of the sector and its impact on the country's economy led to the introduction of structural adjustment policies that recommended the privatisation of the industry. In the political context of the country having returned to multi-party democracy in 1991 this was at first resisted. However as production kept declining, the sale of some mines to the private sector eventually took place by the end of the decade.

By the mid-1990s, the loss-making state-owned mines were at the risk of having to be closed down if not recapitalised. To avert the spectre of wide-spread loss of employment and social unrest, the privatisation of the sector was seen as a 'fire sale'.[2] The Mines and Minerals Act of 1995 permitted the government to enter into Mineral Development Agreements under which fiscal terms could be negotiated on a mine-by-mine basis. In this context a range of generous provisions were granted to individual mines in order to attract investment, including preferential tax rates and the right to use accelerated depreciation in calculating taxable profits. In addition, these terms were locked in by fiscal stability agreements.

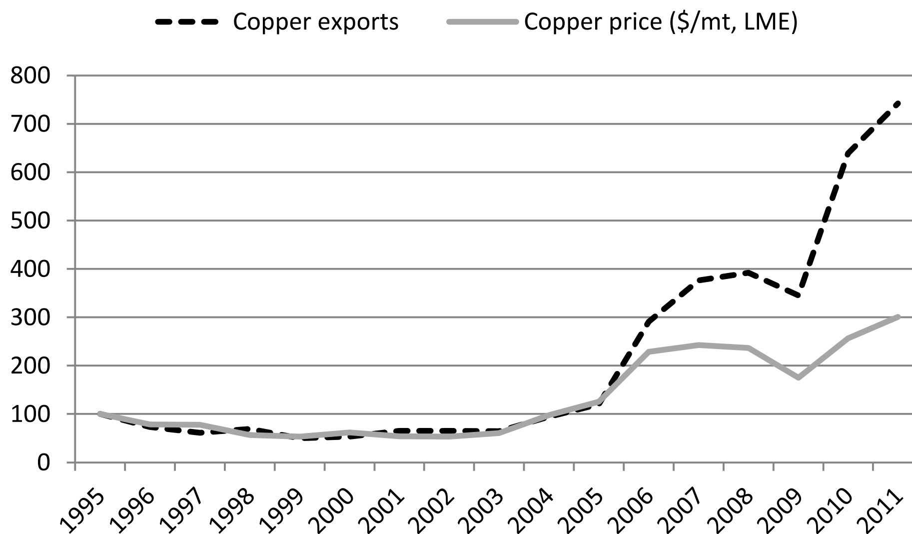
Following privatisation (which took place largely between 1997 and 2002) the sector expanded rapidly. Large investments were made in part in response to the copper price boom from 2004 onwards. By 2010 Zambia had regained its position as Africa's largest producer of copper, and the tenth largest producer globally – representing around 5% of global production (UBS 2010).

The boom in copper prices was clearly a driver behind increased production volumes in the post-privatisation period. However the rate of growth in the value of the copper production reflects more than a simple response to favourable prices. Between 2000 and 2011 copper production from old and new mines grew three times as quickly as the increase in prices (production grew by c.14x while prices increased by c.5x) (see Figure 1).

[1] As copper prices and foreign exchange revenue fell, inflation caused by the oil price shocks led to higher costs of the capital intensive equipment and inputs that Zambia needed to import in order to run its mines (see Weeks 2008).

[2] The perceived rush to privatise also reflected a global context in which Peru, Kyrgyzstan, and Uzbekistan were all privatising their mines at the same time as Zambia, thereby increasing the supply of investment opportunities.

Figure 1 – Zambia copper export values and copper prices (real prices, index=100 in 1995)



Source: UNCTADstat (exports) and World Bank (copper prices)

The increase in investment and subsequent production indicated above is partly attributable to the policies and measures adopted in the privatisation process to attract foreign investment, following decades of underinvestment. While the fiscal terms offered as part of those policies and measures seemed appropriate at the time, they has been challenged in recent years as they were not designed with the view to adjust automatically to a higher price scenario.[3]

There is pressure to adapt fiscal terms to enable the Zambian government to capture a higher share of the resource rent generated. The biggest changes to fiscal terms to date occurred in early 2008, when the Mines and Minerals Development Act 2008 was announced: the fiscal regime in place was overhauled and the practice of using MDAs as the principal instrument for setting the fiscal terms of mining projects was repealed, royalty rates were increased, a variable profits tax was introduced, and a windfall tax was enacted. Although this windfall tax was subsequently repealed in 2009 during the worldwide temporary slump in copper prices, there have been intermittent calls for its reintroduction.

[3] In technical terms, this means that fiscal terms were not designed in a progressive manner whereby government's share of the resource rent would increase as prices increase.

3 Zambia's mining fiscal regime in international context

This section comprises the following sub-sections:

- Key features of Zambia's current mining sector fiscal regime
- Cross-country comparison of headline rates (royalties and corporation tax)
- Benchmarking perceptions of mining sector fiscal regimes

3.1 Key features of Zambia's current mining sector fiscal regime

Zambia's current mining sector fiscal regime as set out in its sector legal framework is a variant of the royalty–tax regime system that is commonly found in mining sectors across the world. According to this approach, the government charges a royalty and then imposes the generally applicable tax regime, often combined with some special provisions, exemptions etc. for the mining sector (Dietsche 2009).

The main taxes and rates of Zambia's framework by the end of 2012 are shown in Table 1. The table highlights that some of these rates have been subject to significant volatility in recent time. Moreover, the Zambian fiscal framework allows for exemptions and allowances that allow the rates for individual operations to vary from 'standard' mining rates (for example investments into Special Economic Zones).

Table 1 – Principal fiscal rates and their bases as applicable to mining

Type of tax	Zambian rates	Base	Comment
Pay- As-You-Earn	25%-35%	Gross salaries, based on income bracket	Based on income bracket of employees. Payable by all formal sector employers.
Indirect taxes (VAT)	Standard VAT rate of 16%	Gross value	Import VAT and VAT (non-refundable) payable on equipment and inputs
Mineral Royalty	6%	Gross value	Increased from 0.6% to 3.0% in 2008, and from 3% to 6% in 2012
Corporate Profit Tax	30%	Gross Profits calculated on accrual basis	General rate of 35% for non-mining companies. Special rates for investments under Zambia Development Agency Act (0% first 5 years, 50% reduced rate years 6-8, 25% reduced rate years 9 and 10)
Import Duty	Variable depending on degree of value	Customs value	A 15% export duty on copper concentrates was imposed in 2008 but later repealed
Withholding Taxes	15% on interest payments, and payments for services of non-residents	Gross income	0% on dividend payments (15% on dividends for non-mining firms). Statutory rates might be modified by country-to-country treaties
Excise Duty	Variable	Excisable value (=customs value + customs duty)	Applied to some products such as fuel
Variable Profit Tax	Introduced in 2009	Gross Profits calculated on accrual basis	In effect when ratio of net-of-tax profits to total sales exceeds 8%

Source: Conrad (2012).

3.2 Cross-country comparison of headline rates

How does Zambia's fiscal regime compare with those of other countries? We begin by focusing on royalty and corporate profit tax rates – two of the rates with which investors are often concerned and that Conrad (2012) estimates have contributed the lion's share of direct taxes revenues from the Zambian mining sector during the period since privatisation. The tables below compare the rates for these two taxes across a group of mining jurisdictions. Importantly, Table 2 in particular shows that the definitions of the 'bases', on which these rates are applied, vary significantly. The same is the case with respect to the definition of 'corporate profits' which can vary significantly across jurisdictions depending on applicable accounting standards for how the cost base is defined.

Table 2 – Mineral royalties for copper in selected countries

Mining jurisdiction	Rate(s)	Definition of base
Australia (New South Wales)	4%	Ex-mine value
Australia (Northern Territories)	18%	Net value of mineral
Canada (British Columbia)	15%	2% net current proceeds + 13% net revenue
Canada (Sask.)	5/10%	Net profits based on unit sales
Chile	0-5%[c]	Total sales, varies by volume
China	2% + Rmb[b] 7/ton	Ad valorem royalty + per unit charge
DRC	2%	Net sales value
Indonesia	4%	Net sales
Kazakhstan	5.70%	Mineral Extraction Tax based on revenue
Mexico	None	None
Mongolia	5% (base rate)	Sales value
Peru	1-3%[c]	Gross sales
Russia	8%	Value of mineral resources
South Africa	Based on EBIT formula	EBIT = Earnings Before Income Taxes and Gross sales
US (Arizona)	At least 2%	Gross value
US (Nevada)	Up to 5%	Net proceeds
Zambia	6%	Gross value

Source: Conrad (2012). Updated to reflect recent change to 6% copper royalties in Zambia.

Table 3 – Corporate profit tax in selected countries

Mining jurisdiction	Rate(s)	Notes
Australia	30%	
Canada	Federal rate 18% in 2010, 16.5% in 2011	(BC 10.5% in 2010, 10% in 2011; Sask. 10%)
Chile	20% First Category Tax + Global Complementary + Additional Tax on Non-residents	
China	25%	
DRC	40%; 30% for mining companies	
Indonesia	25%	
Kazakhstan	20%; branch profits tax of 15%	
Mexico	30%	
Mongolia	10% up to MNTb 3 billion; 25% thereafter	
Peru	30%	
Russia	20%	
South Africa	28%; branch profits tax of 33%	
United States	15-35% on residents/ 30% branch profits tax (AZ 6.97%, NV – no tax)	
Zambia	30% for mining companies + 0-15% variable profits tax	35% for non-mining companies

Source: Conrad (2012).

The fact that countries apply different tax instruments and define the underlying tax bases in different ways makes benchmarking of rates across countries difficult – as Smith (2012) points out, “no two countries tax extractive resources in quite the same way”. In order to view the broader set of tax rates that comprise a fiscal regime in comparative context, researchers and professional services firms may apply the different fiscal terms of different countries on a hypothetical mining operation and on this basis calculate an ‘effective tax rate’ (see Manley 2012 who calculates effective tax rates for mining projects in Zambia under different regimes).[4]

Although such initiatives are useful in comparing different configurations of a tax regimes within a country, there are challenges with applying such analysis cross-country. Mainly this is because such an exercise compares fiscal terms as if the same type of geological conditions and the same cost structure would apply in all the countries and to all mine operations, respectively. In reality, such conditions vary widely between mining jurisdictions. Hence, if a mining company assesses alternative investment opportunities it will assess fiscal terms *in the context of many other factors*, including the costliness of getting materials out of the ground (including ore grades and costliness of logistics/infrastructure).

3.3 Benchmarking perceptions of the mineral fiscal regime

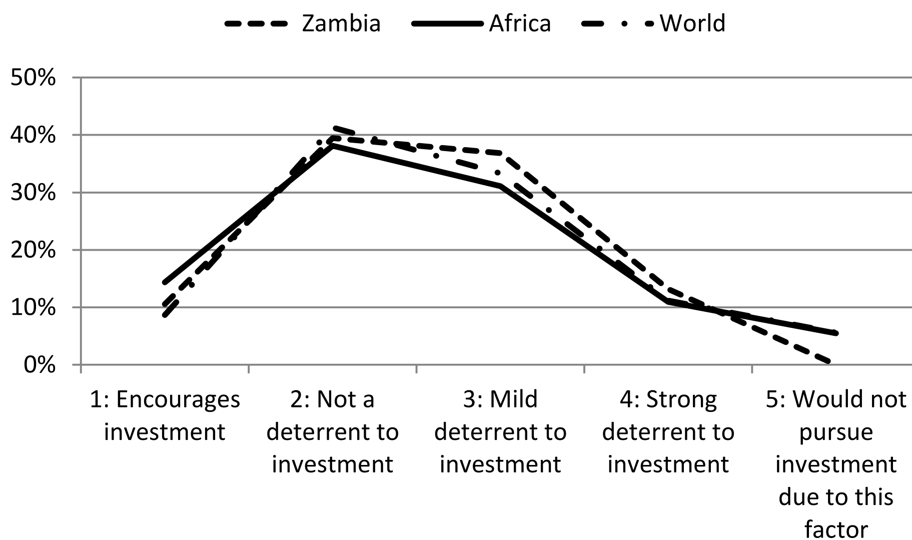
An alternative approach to placing Zambia’s fiscal regime for mining in international context is through surveys of mining sector executives. The Fraser Institute Annual Survey of Mining Companies (the latest being for 2011/2012) collects the subjective perceptions of senior

[4] Effective Tax Rates (ETR) can be defined in different ways – Manley (2012) defines ETR as Total value of tax payments / before-tax profits.

managers of mining companies.[5] It asks firms to rate whether different policy and governance arrangements in a country are seen as encouraging or as a deterrent to investment. It asks specific questions regarding perceptions on areas including: the fiscal regime, the legal system, enforcement of regulations, land use/titling and disputes, environmental regulations, quality of infrastructure.[6]

Figure 2 shows the perceptions concerning Zambia's mining fiscal regime specifically, compared to the average for Africa, and the world. It shows Zambia's rating as being broadly in line with the average across Africa, and across the world. Based on this survey, Zambia's fiscal framework for mining is considered a deterrent *to some extent* by 50% of those surveyed (0 provides a complete list of African countries ranking on the Fraser Index for perceptions of the fiscal regime).

Figure 2 – Perceptions of Zambia's minerals fiscal regime



Source: Fraser Institute.

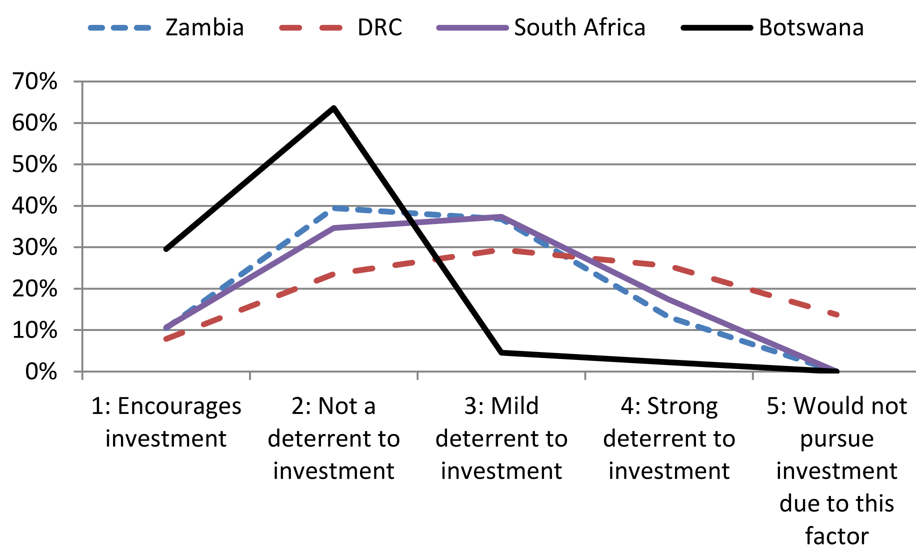
The data above illustrates how averaging over large samples reduces the usefulness of cross-country comparisons.

Figure 3 shows the comparison between Zambia and three regional peer countries, all with large mining sectors. It points to perceptions of the fiscal regime of Zambia's mining sector as being perceived as similar to that of South Africa, less attractive than that of Botswana, but more attractive than that of the Democratic Republic of Congo.

[5] In the most recent survey, 802 companies were surveyed, representing reported exploration spending of US$6.3 billion in 2011.

[6] See www.fraserinstitute.org

Figure 3 – Perceptions of Zambia's minerals fiscal regime (regional comparison)



Source: Fraser Institute.

Figure 3 shows that investors, on average, consider the mining sector fiscal regime in Botswana more attractive than that of Zambia or South Africa. The value of such perceptions-based data is that it allows a comparison across minerals – i.e. perceptions on Botswana will be provided by current or would-be investors into the diamond sector, whereas respondents providing opinions on Zambia will consider investments into the copper sector.

It should be emphasised that an assessment of perceptions regarding the 'attractiveness' of a fiscal regime relative to other countries will include many other factors beyond the fiscal rates which can help to explain the divergence between e.g. Zambia and Botswana in the figure above. Some of these issues – to which different investors will attach different weightings – are discussed below:

De jure vs de facto fiscal regimes. Zambia's tax regime for mining includes various concessions/exemptions issued through Statutory Instruments (subsidiary legislation often enacted without parliamentary approval). This complicates both the practical application of the tax regime and also any assessment of its overall impact. Lack of clarity around how tax provisions will be applied creates complexity in the tax system (which may be seen by an investor either as an opportunity or as a deterrent) which in itself may affect the ability to collect taxes (see next section).

Fiscal policy volatility. Zambia's post-privatisation policy framework for mining has been relatively volatile, especially in the last half decade. For example, in 2011 an increase in royalties was announced, from 3% to 6%, which came into effect in April 2012 (TPO 2012). The most recent changes were announced in October 2012 when capital allowances were reduced from 100% to 25%, and a new Property Transfer Tax was introduced. Other recently announced changes include a new Compliance Act, to come into effect on 1 April 2013 together with and stricter requirements on monitoring and audits.

Quality of resource and overall cost base. The perceptions of senior managers on the attractiveness of a fiscal regime tend to be shaped in the context of non-fiscal factors – including

the quality of the resource, the costs associated with producing it and taking it to market, and the perceived stability and clarity of the terms and other potential investment-decision critical factors. Importantly, the quality of the resource and the cost base are both influenced by government policy – e.g. with respect to collecting and providing geological data to potential investors, and through public policy to promote infrastructure and skills development that reduce logistics and input costs for companies.

4 Challenges of effectively collecting and managing mineral revenues

This section comments on two questions that follow on from the discussion of the mining sector fiscal regime above:

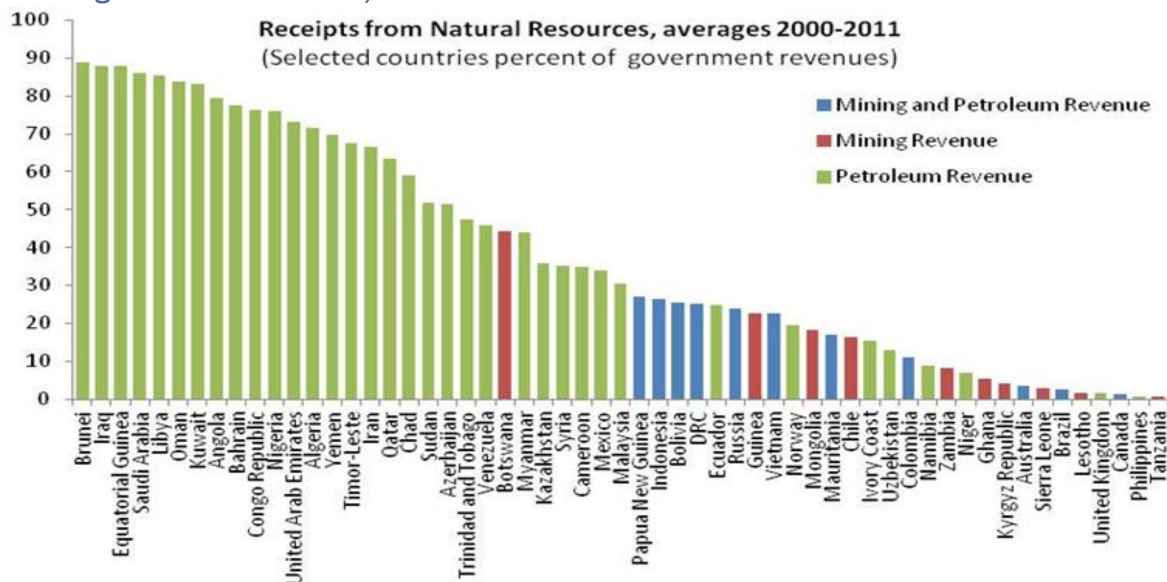
1. How much mineral tax is Zambia collecting?
2. How effectively is Zambia collecting taxes from the mining sector?

4.1 How much mineral tax is Zambia collecting?

During the early years following privatisation in the late 1990s the sector contributed few revenues, as many of the mining assets sold required significant investment to modernise capital stock before production could return to a reasonable level. Moreover, as the copper prices rose several mines expanded and were able to 'cost' new investments in the year they were acquired, thus reducing taxable profits (provisions for accelerated depreciation allowed mining companies to 'cost' new capital expenditure in year one rather than depreciate them over a straight line depreciation schedule as required in other industries).

The sector is now contributing a growing share of revenues. Work conducted by OPM for the International Council of Mining and Metals (ICMM) suggest that a new or recovering mining sector can quickly come to dominate macroeconomic aggregates such as Foreign Direct Investment (FDI) and exports, but still provide a relatively smaller share (typically 3-20%) of total government revenues (ICMM 2012). Data compiled by Daniel (2012) indicate that Zambia on average has collected 7-8% of its revenues from mining during the last decade (see Figure 4). As discussed in the following section this data reflects the low level of taxes that was collected during the early days following privatisation (underlying data was not available to assess average tax contributions on a year-by-year basis).

Figure 4 – Receipts from natural resources, averages 2000-2011 (selected countries, as share of total government revenues)



Source: Daniel (2012).

The most recent EITI reconciliation report using data from 2009 – when several projects were 'moth-balled' due to the slump in international copper prices and frozen international capital markets – provides disaggregated data on tax collections from the mining sector (see Table 4). More recent data point to sharp increase in revenues collected following the re-bound in copper prices and implementation of higher royalty rates. In 2012, Zambia collected around US$ 840 million in taxes and royalties in 2012 (an increase of 33% on 2011).[7]

Table 4 – Tax collections from the Zambian mining sector in 2009

	Rev's collected in 2009	
Type of tax	**Kw m**	**USD m**
Pay- As-You-Earn	564,822	113.4
Indirect taxes	463,809	93.2
Mineral Royalty	242,192	48.6
Company Income Tax	209,721	42.1
Import Duty	114,219	22.9
Withholding Taxes	59,010	11.9
Excise Duty	1,113	0.2
Variable Profit Tax	0	0.0
Total	**1,654,886**	**332**

Source: Data from 2009 EITI reconciliation report (Moore Stephens 2012). Dollar values calculated by author using average exchange rate for 2009.

4.2 How effectively is Zambia collecting taxes from the mining sector?

There was limited transparency around the mining sector immediately following privatisation in the late 1990s, with fiscal terms contained in confidential Mineral Development Agreements. The subsequent publication of Development Agreements in 2006 and the implementation of the EITI process (Zambia became a compliant country in September 2012) brought a welcome improvement in transparency to the fiscal payments the sector has made.

Questions around whether Zambia is collecting what it is due from the mining sector have resurfaced in recent years, in particular following the leaked audit report of Mopani by consultants Grant Thornton and Econ Poyry (2011). The report corroborated concerns over transfer mis-pricing in the mining sector, broadly understood as non-arm's length transaction between related parties that enable firms to reduce taxable profits (e.g. through service and management contracts and intra company loans). However these issues extend far beyond corporations striving to evade taxes. Rather, challenges around effective tax collection reflect the inter-linked challenges of complexity in the fiscal regime, extensive use of exemptions and concessions, and weak institutional capacity within key government agencies:

- First, the underlying complexity in the mining sector codes, exacerbated by frequent changes to provisions and common exemptions, leads to an often contested understanding in applying the tax code – including the definitions of prices and concepts used in accounting standards. This makes it difficult to collect revenues effectively and increases the scope for creative tax planning for companies so inclined.

[7] See Bloomberg (2013). Data on other taxes was not available at the time of writing.

- Second, the opaque management of the sector, including the role of ZCCM-IH (the state company that holds minority stakes in privatised mines), introduces risks of mismanagement of mineral revenues on their way from the private sector company to the central government's budget.

- Finally, although on paper Zambia's tax regime broadly follows international practice, the capacity of the different government agencies involved in enforcing and administering revenue mobilisation from the sector has remained weak. A related issue is how effectively these revenues are managed and allocated through the Public Finance Management (PFM) system, where overall Zambia's PFM systems remain weak. An assessment using the standardised Public Expenditure and Financial Accountability (PEFA) framework in 2005 noted that budget was "*an inaccurate measure of actual expenditures due to weaknesses in fiscal discipline, expenditure control, and budgetary planning*" (GoZ 2005). A subsequent assessment in 2008 argued that Zambia's PFM reform initiatives had been successful, in part due to greater coordination across Ministries, but were held back by the limited day-to-day integration across 'sub-components' (public agencies and bodies) (PEFA 2008).

5 Summary

This research note began by placing the Zambia mining sector fiscal regime in historical context of privatisation in the late 1990s followed by a boom in copper prices. It reviewed the fiscal regime for mining and placed it in international comparison by comparing headline rates for royalties and corporate income tax in Zambia and other major mining jurisdictions. However this assessment found that there were significant differences between countries in how these taxes are calculated (in particular the bases used for their calculations). As a result, such a comparison of 'headline rates' provide – on their own – limited insight into how would-be investors perceive the mining sector.

It was argued that perceptions offer an alternative and complementary approach to examining how Zambia compares to other mining countries from the perspective of investors. Based on this assessment using the Fraser Index component covering fiscal regimes specifically (2011/12) data, Zambia places around the median of African countries and on par with South Africa, worse than Botswana, but better than the DRC.

Importantly, perceptions that the fiscal regime for mining in Zambia is attractive does not necessarily mean that the fiscal rates (in context of bases adopted by each country) are themselves attractive – and vice versa. As noted above, investors tend to view fiscal regimes in a broader context of:

- risks to existing framework (its historical volatility and expectations regarding future changes),
- the possibility of negotiating a deal which is 'better' than the 'official' headline rates (through exemptions/allowances) and
- other factors shaping the economics of the project (e.g. if the geology is very favourable and extraction is low-cost, a firm will be able to accept a higher tax rate, all things being equal).

This diversity of 'drivers' behind investment illustrates the challenges of talking about the 'competitiveness' of a sector's fiscal regime in a narrow sense. Moreover, different companies will weigh the above factors differently (e.g. depending on access to low-cost import markets), further complicating an assessment of what an 'average' investor would consider attractive. Importantly, government and its development partners have a role to play in promoting policies that make investment more attractive, including by increasing the predictability of the fiscal regime whilst reducing the costs of mining (from infrastructure to skills and quality of geodata)Turning to the question of how effectively Zambia is collecting and managing revenues from the mining sector, it was noted that the EITI has brought welcome transparency to the sector, but remains limited in scope. More recently the debates have been less about whether revenue is going missing on its way from companies to government, but more around whether Zambia is collecting what it is due. In this context the main challenges for Zambia lie in reducing the complexity and opacity of mining sector fiscal framework, whilst boosting capacity among government agencies to monitor and collect fiscal contributions from the sector. Addressing these challenges can serve as a win-win for government, industry and development partners, by

increasing taxes collected and satisfying those who are calling for greater contributions from the mining sector without further changes to an already-volatile fiscal regime.

The way forward will require a better understanding of what the sector's broader contribution is and what its needs are – in order to create the space for public policies beyond the fiscal regime (e.g. with respect to planning, education, infrastructure) that explicitly take into account the mining sector. More open discussion between the sector and its host government, facilitated by donors, would help to build this awareness.

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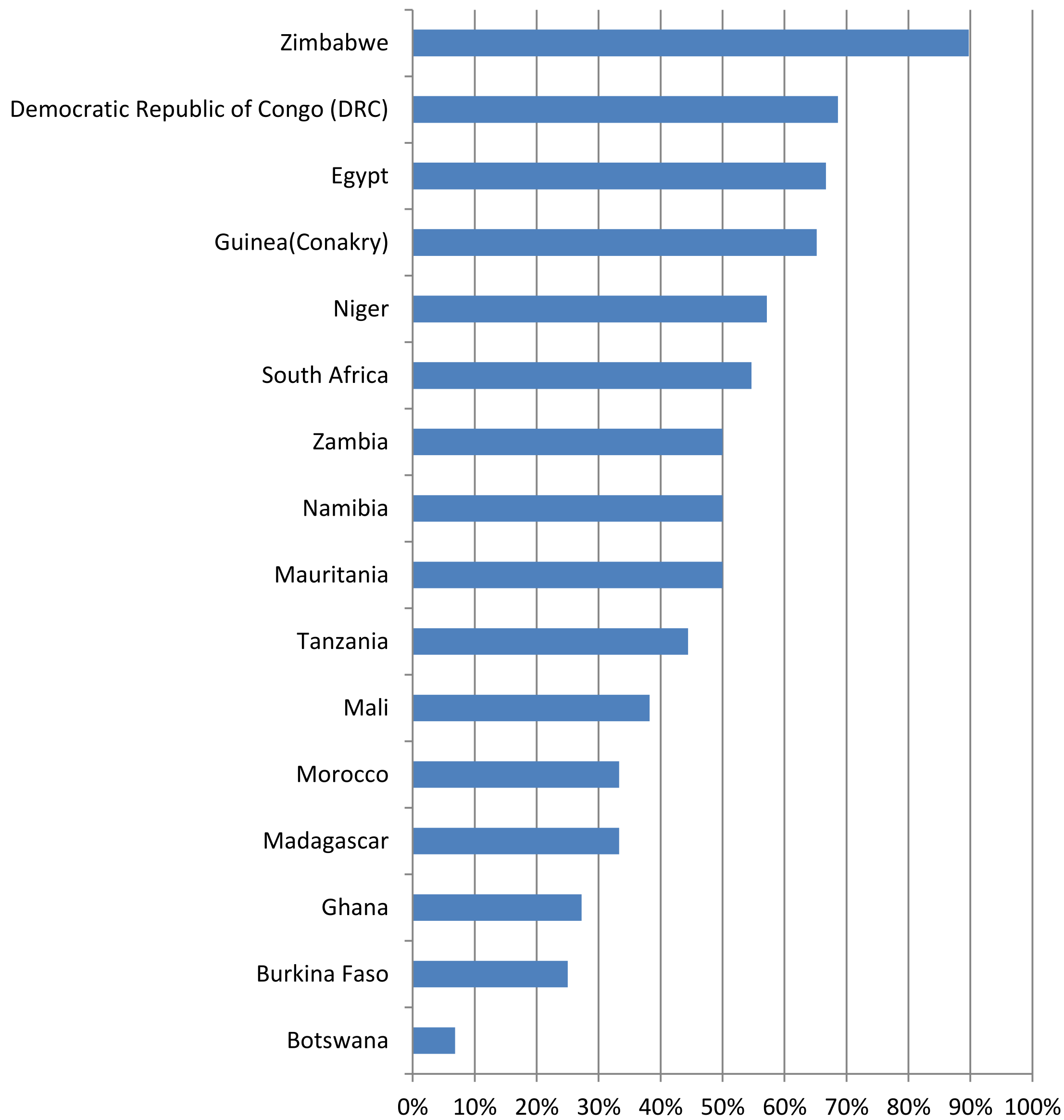
Annex A: Perceptions of mining fiscal regimes in Africa

Figure 5 illustrates the share of respondents to the Fraser Index survey that consider a country's fiscal regime either "a mild deterrent to investment, "a strong deterrent to investment" or that they "would not purse investment due to this factor".

Figure 5 – Perceptions of mining fiscal regimes, selected countries (share of respondents considering the fiscal regime to be a mild to strong deterrent)



Source: Fraser Institute.