Over taxed?

Does the tax regime encourage new mines?

In Namibia the gold mine would generate ***US$124****million*

Further benefits of the mine include ***$1.1****b total operating costs and* ***1,100*** *local jobs*

Burkina Faso only generates a return of ***19.7%*** *– not enough to develop the mine*

For every $1 generated by mining an additional $3+ are generated elsewhere in the host economy

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Contents

Introduction

Taxation and fiscal settings have been a contentious issue across the globe for a number of years. This has been particularly so for emerging markets, where regimes and regulations are still developing. Over the last 20 years Africa in particular has changed – government and governance have improved significantly, albeit from a low base in many cases. Laws and judicial systems have been established and are enforced. Decision making by governments is continuously getting better.

The mining sector is involved at the start of the value chain. It is typically a sector which commences early in a country's development as natural resources are exploited by government and private industry in the charge for economic progress.

There is no question that it is a challenging time for the mining industry. Commodity prices are down across the spectrum, doubts are emerging about global growth and funding for new projects is extremely challenging.

Governments too are facing significant headwinds, including in Africa. Their populations are demanding more – continuation of growth and escalation of wealth. Government budgets are challenging to balance, particularly those where mining and oil & gas form a key part of the revenue base, as both face pricing and profitability challenges.

Now, more than ever, the minerals sector and governments need to work closely together to achieve a common goal. For surely it is in the interests of both for there to be greater economic activity – new mines developed, foreign direct investment, creation of jobs and the opportunity to generate profits from Africa's vast mineral wealth. A deposit left unmined is of no value to either the host government and its people or the miner who has right of access to it.

Governments wrestle with setting the various tax and revenue measures such that they generate what is seen to be a fair return for their people from the consumption of the country's mineral wealth, while still allowing sufficient return on the capital invested by miners to allow the investment to occur in the first place. Capital invested at the development stage of a mine is risk capital, requiring higher returns to justify its deployment.

This is a challenging debate – take a larger slice of the pie at the risk of the pie never being baked or taking a smaller slice of the pie and incentivising the miner such that the economic activity and government revenue is generated.

So what is the right level? What is the benefit to those countries who get it right? And what happens when it goes wrong?

Comparing apples with apples

PwC have performed an economic analysis of a standard gold mine operating under the same conditions, with the same assumed capital and operating costs, across four different African countries, being Tanzania, Burkina Faso, Namibia and Ghana. We chose these nations as they have a tradition of mining and to demonstrate the impact of different fiscal regimes on the decision making of a mining company – specifically the decision on whether to invest in the development and construction of a new mine.

To ensure our analysis is only commenting on the tax regime, we have normalised all other factors. Our gold mine is assumed to have the same operating conditions, grade and metallurgy. We have assumed the same capital and operating costs, including those for energy consumption. We removed the impact of any limitations in access to skilled labour and critical infrastructure, along with the availability of parts and contractors. As such we tested the current taxation regime and the impact this has on both the decision to build the mine and the income generated by the government and company over the operating life of the mine.

Introduction (con't)

Key findings

Table 1: IRR and total government revenue generated by country

Country	Project IRR (%)	Would the mine be developed?	Government revenue generated ($m)
Tanzania	24.9	Maybe	201
Burkina Faso	19.7	✘	210
Namibia	26.7	✔	124
Ghana	25.0	Maybe	173

Source: PwC analysis

Namibia is the only country which in our example generates sufficient Internal Rate of Return (IRR) to allow a clear decision for the mine to go ahead. The current regimes make the project marginal in two of the four countries, being Ghana, where the IRR threshold is just met and Tanzania, which is marginally below. At an IRR of just 19.7% there would be no viable project in Burkina Faso.

Therefore, while the Namibian tax take may at first glance appear lower than the other nations, it is the only country that is highly likely to receive any taxation revenue at all.

For Namibia, this means the generation of government revenues of over US$124 million over the life of the mine. On top of this foreign direct investment of US$200 million is spent constructing the mine. Over the life of its operations operating costs of $1.1 billion and sustaining capital of $150 million are spent in-country. The mine has ongoing employment of 1,100 people.

Ghana and Tanzania sit on a knife's edge, with the decision to go ahead likely to be based on other, non-financial factors. Therefore these nations may receive no tax income, similar to Burkina Faso.

An alternative conclusion is that for the same project to be economically viable in Burkina Faso, as it is in Namibia, the grade would need to be 32% higher. There are of course high grade mines in each of these countries and all of them have mines currently being developed. However, naturally the higher the grade the rarer the deposit. Therefore over time fewer projects will be developed as only the best meet the return thresholds.

Wider benefits

The decision making by governments at the development stage of a mining project are critical to the outcome for the country and the miner. This is the single most critical point as it commits the project capital. This is due to the fact that a mine has a multiplier effect on economic activity in the country. Studies by the International Mining and Mineral Council (ICMM) have shown that for every $1 generated by mining at least an additional $3 are generated elsewhere in the host economy. In addition, for every one direct mining employee, employment is generated for a further 3-5 employees elsewhere in the economy. As can been seen, the benefit is profound.

The goal of this paper is to stimulate further discussion on what can be done by African governments and the mining sector to maximise the potential of their mining industry and generate income by finding the right balance between return to the country and return to the miner.

For the mining industry, understanding the pressures the host government is facing and being clear and transparent from the start in engagement on the forecast project returns is critical. It is also incumbent on miners to get the balance right in fiscal negotiations with government.

For it holds true to both government and miners – a larger proportion of zero tax revenue or company profit remains a zero return for both parties. In contrast, the benefits of an operating mine continue for generations.

We welcome your engagement on the contents of this report.

Ben Gargett
Partner, Australia-Africa Practice Leader
PwC Australia

Background

There are many factors which a company takes into account when deciding where and when to allocate their scarce capital to a mining project. Each company, even the most junior explorers, typically have more than one project on which they could expend their effort and hard earned funds. Even those with a flagship asset, which appears well ahead of other investment alternatives within a company, will make decisions on whether or not to continue to allocate funds to the project.

Undoubtedly the mineral prospectively of a country plays a large part in the initial selection process, with those countries assessed as having the greatest mineral potential benefiting. However, beyond mineral endowment, there are many other factors, which can be influenced by governments that make a project or a country attractive as an investment destination.

While mineral deposits are not mobile, the capital which is allocated to fund construction of the assets certainly is. We have seen this time and again, including in Australia after the Rudd Government announced the Resources Super Profits Tax, a tax which was never legislated. This capital will naturally be shifted by companies to projects which generate the best return and in jurisdictions which provide stability and certainty.

This report investigates one of the key factors – the taxation regime and fiscal settings of the government. While there are many factors taken into account when making decisions to allocate capital to potential projects, one core common factor is the return that the deployed capital will generate for its investors. Without a sufficient return all other settings become irrelevant because in most circumstances there will be no decision to mine. Therefore it could be argued that other factors, such as stability, certainty over contractual rights, rule of law, legal system, etc. have no opportunity to be considered where the fiscal regime does not allow a project to generate sufficient returns. Put simply - the project will not go ahead.

To test this theory we have analysed the impact of the taxation and fiscal regimes in four African countries with a history of mining to determine the impact on these regimes of the decision to mine. The countries selected were Tanzania, Burkina Faso, Namibia and Ghana.

In order to isolate the impact of the taxation regime, we have modelled the economic impact of each of the four country's systems on a gold mine, which we have standardised. We have equalised the grade, metallurgy, operating costs, production levels and construction times. We have assumed the same capital and operating costs and taken out any variability as a result of limitations in access to power and water. We have removed country specific input cost variables, such as regulated diesel fuel pricing, removed the impact of any limitations in access to skilled labour and critical infrastructure, along with the availability of parts and contractors.

While in reality the cost of constructing and operating this gold mine in each country is likely to be significant different due to many factors, these assumptions allow the modelling to examine the impact of each fiscal regime on the project economics and ultimate decision to mine.

The gold project

The gold mine has the following key factors (all amounts are US$):

- Open pit mine, with processing plant on site to produce gold doray
- Exploration costs of $30 million have been incurred to date
- Two year permitting and approvals process, during which certain development costs are incurred
- Two year development period, with a total capital cost of $150 million
- Production of 150,000 ounces p.a.
- Assumed real gold price of $1,175 per ounce
- Cash costs of $699 per ounce and All In Sustaining Costs (AISC) of $957
- The mine employs 1,100 local staff and 11 expatriates

Cash flows have been discounted to present value using an 8% discount rate.

Based on analysis performed across a number of mining companies, we have assumed a minimum required Internal Rate of Return (IRR) of 25%.

Refer Appendix A for a full list of assumptions used.

To mine or not to mine

Mining is a long-term game. Substantial capital is placed at risk and invested up-front, with the goal of generating returns over a number of years, in many cases decades. The mining industry is cyclical and over the course of an average mine's life it is likely to experience the whole cycle, from booming highs to desperate lows. The cycle is driven by supply and/or demand variations which lead to volatility in the price at which products are able to be sold to customers.

The key decision point for a mining company is whether or not to develop the mine. Until this point the expenditure is lower and performed in stages as exploration progresses. Once development has been approved, a significant amount of money is spent to construct the mine, associated processing facilities and ancillary items, including infrastructure.

Throughout the process for assessing the viability of a mining project, ahead of a development decision, the miner and host country government will be in close contact over many factors, including licencing, operating conditions, local content, taxes and incentives. The culmination of these negotiations drives the decision to develop the mine. It is at this stage that the government can have the most impact on the project, either positively or negatively.

Is there a project?

Table 2 shows the profits and cash flows generated by the miners along with the taxation and other revenue provided to the government, over the life of the mine.

Our gold mine generated cumulative free cash flows of $384 million in Tanzania, $281 million in Burkina Faso, $423 million in Namibia and $372 million in Ghana. All of these are on an undiscounted basis.

Table 2: Returns generated by country

Country	Profit for mining company ($m)	Cash flows generated for mining company ($m)	Government revenue generated ($m)	Project generates sufficient returns?
Tanzania	128	384	201	Maybe
Burkina Faso	96	281	210	✘
Namibia	151	423	124	✔
Ghana	116	372	173	Maybe

Source: PwC analysis

As shown in the table above, using our assumptions Namibia is the only one of the four countries analysed where it is clear that the mine would be developed and the government would receive revenues and economic development.

In Tanzania the project is marginal, sitting slightly below the minimum IRR hurdle with an IRR of 24.9%. While this does not meet the required 25% threshold and, all other things being equal, indicate that the project would not go ahead, it is likely that other factors would come into any decision making process when the return is so close to the required minimum.

Ghana just reaches the 25% IRR threshold and as such is also a marginal proposition.

Burkina Faso notionally generates the highest income from taxation at a gross, undiscounted take of $210 million. However, on the basis that the project generated an IRR well below the minimum acceptable level, it would not go ahead in Burkina Faso. Therefore the actual government revenue generated would be nil.

Figure 1 (page 7) shows the total profits generated from the mine over its operating life, allocated between those which are paid to government and those which are retained by the mining company. It can be seen that in Burkina Faso 69% of the total project profits are paid to government - a burden which was sufficiently high that it prevents the mine generating sufficient returns. In the other three countries the government share of the pie is between 45 - 60%.

What drives the outcome?

There are only so many profits and so much cash flow generated by a mining project. If the government takes too much, there is insufficient left for the miner to generate a commercial return. It is the miner who is bearing 100% of the capital and operating risk of the project. The miner's capital is mobile and decisions are made in the allocation of this capital on a regular basis. Further than that however, in this tough market, where funding is scarce and hard to get, the decision may well be out of the hands of the miner and in the hands of those who finance such projects.

For the countries other than Namibia, these calculated government revenues may well be a theoretical exercise only. For their government, a slightly smaller share of the pie is better than a larger share of a pie that never eventuates.

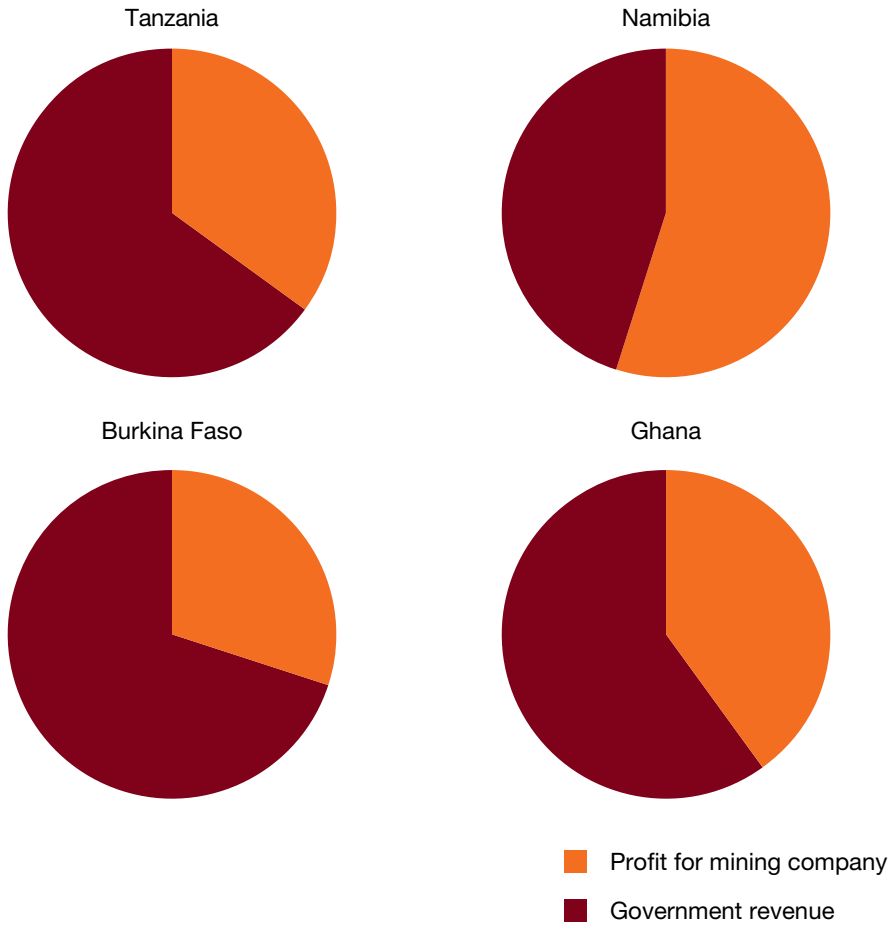
An alternative means of looking at the conclusion is in relation to the relative strength of project required in each country. That is, for the same project to reach the required return to gain approval in Burkina Faso as in Namibia it would need a 32% higher grade. Alternatively, it would need 32% lower costs.

Undoubtedly there are new mining projects being approved and developed in Burkina Faso – also in Tanzania and Ghana. The challenge is that the project must be that much better – and grade is only one factor – for the project economics to work for the miner. Each country has high grade projects like this which will typically get developed under any scenario. However naturally, the higher the grade, the rarer these projects are. Therefore over time fewer projects would get developed as only the best meet the required IRR to allow development.

Working together to achieve a better outcome

Working together collaboratively, the government and the mining company can achieve a better outcome for all. While at times it can appear that the two parties are on opposite sides of the fence, there is no reason why government and company can not sit alongside each other to drive improvements that provide benefits for both parties. For example, if government can work together with a miner to help them reduce costs, it will generate a higher level of profitability and therefore return a share of this through higher income taxes and potential expansion of the operations. One example of this is power costs, which are a significant proportion of any mining venture. Any reduction in power costs, say through connection to grid power rather than running of diesel plants, is highly likely to generate a return to the miner. This return is shared by the government. Alternatively, could royalties be determined by grade or potentially even AISC? For any ideas, these or others, to work the two parties will need to work closely together and use potentially innovative means and mechanisms to drive the improvements and share the benefits. The outcomes must be win-win, not only to the benefit of the miner.

Figure 1: Sharing the pie: profits and taxation



To mine or not to mine (con't)

Further economic benefits

In addition to the government taxation revenue noted above, Table 3 sets out the economic activity generated by the mine over its operating life, including exploration, construction, operation and rehabilitation.

The capital and operating expenditure incurred by a mine generates economic activity, with a large portion typically spent on locally owned and operated business and employing local residents and nationals. This expenditure generates additional economic stimulus over and above the mine's direct impact. Refer to page 9 for further details.

Table 3: Other economic benefits to the host country

Country	Life of mine capital expenditure ($m)	Life of mine operating cash costs ($m)	Local employment
Tanzania	350	1,102	1,100
Burkina Faso	Nil	Nil	Nil
Namibia	350	1,102	1,100
Ghana	350	1,102	1,100

Source: PwC analysis. Red indicates project at risk due to IRR level.

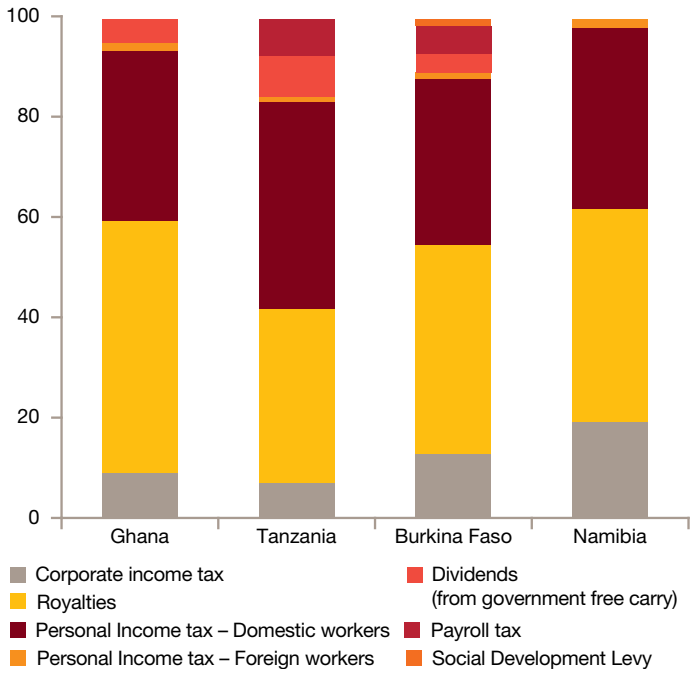
Tax mix

Governments rightly focus on the headline rates of corporate income tax and royalties, given the overall impact they have on their fiscal position. They also consider each taxation or other fiscal lever they can pull in order to maximise their return from any given mining project. However, care is needed to balance the return to the government and people through the levying of various taxes (whether named that or not) and the miners to ensure the return is sufficiently attractive to be able to obtain and subsequently commit the risk capital to develop the project.

Put simply, the higher the total government take from a project, the better quality the project must be in order to reach the required return thresholds. Therefore governments must ask themselves – is it better to take a smaller share of an economic project which will go ahead or put in place the mechanism for a greater share of a project which becomes marginal and may not generate any economic activity or employment at all?

Figure 2 shows the composition of taxes across the four countries studied. For all countries other than Tanzania, the greatest source of government revenue is the gold royalty payable, typically as a flat percentage of total revenue generated by the mine. In Tanzania a higher proportion of tax is generated from personal income tax, which is payable by employees.

Figure 2: Mix of taxes



Source: PwC analysis

The mining multiplier effect

Socioeconomic benefits from mining extend beyond company profits and government revenue. In many countries, they are a key source of foreign direct investment, export revenue and income growth, and stimulate employment throughout the wider community. When managed appropriately, they can drive substantive improvements in living standards through improvements to infrastructure, working conditions and support for social programs.

The previous section illustrated that the viability of a standard gold mining project can come into question where corporate income tax rates and royalties are set too high. Governments need to carefully weigh up these revenue considerations against the potentially large economic and social opportunities missed by making a project unviable.

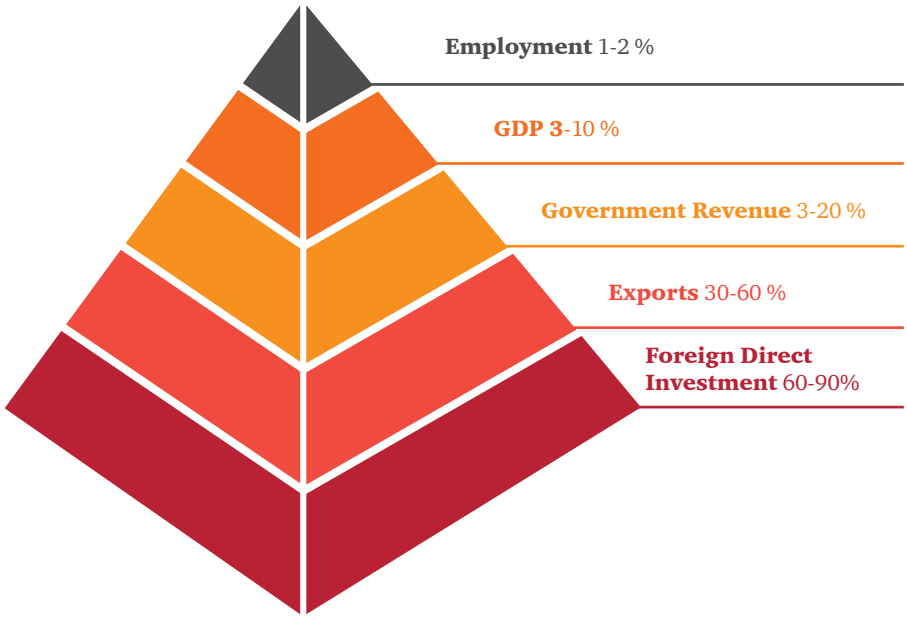
This section contextualises the economic impacts of mining projects as a consideration in determining tax rates, for it is well known that there is much more benefit than simply government tax rates. A mine has a multiplier effect – and it is significant.

Benefits

Mining projects are a key source of foreign direct investment (FDI), export income, government revenues and gross domestic product (GDP) in many resource-rich economies.

In 2014 The International Mining and Mineral Council (IMMC) issued a report called "The Role of Mining in National Economies". The report collated economic statistics from 37 resource rich countries, both developed and developing, and has quantified the direct impact of mining on these economies.[1] As illustrated in Figure 3, the mining industry is a key source of international trade and investment, contributing up to 90% of FDI, 60% of export revenue and 20% of government taxation revenue.

Figure 3: Impact of mining on macroeconomic indicators



Source: International Mining and Mineral Council (2014) *The Role of Mining in National Economies* (2nd edition)

[1] International Mining and Mineral Council (2014) *The Role of Mining in National Economies* (2nd edition), 18. http://www.icmm.com/document/8264

Table 4: Mining's contribution to exports and GDP

Country	Total Export Contribution from Mining (2012)	Production Value (% of GDP) (2012)
Tanzania	35.3%	8.9%
Burkina Faso	46.3%	16%
Namibia	53.4%	11.6%
Ghana	17.6%	12.5%

Source: International Mining and Mineral Council (2014) *The Role of Mining in National Economies* (2nd edition)

Due to its capital intensive nature, mining comprises a significant proportion of FDI. This is especially true for developing countries, including many in Africa, where existing infrastructure can be inadequate. Mining is also a key driver of export revenue amongst a number of low and middle income countries, accounting for around 50% in Namibia and Burkina Faso in 2012 (Table 4).

The economic benefits of mining extend well beyond the immediate impacts of a greenfield project or brownfield expansion. The construction and operation of mining projects draws resources from other industries and brings in foreign capital. By contributing to employment growth they also create expenditure multipliers, as the boost to income results in additional spending and investment.

Crucially, if tax policies are set appropriately, mining projects can also provide a significant boost to government revenues, which can then be put to use on welfare enhancing expenditure programs – for example, on much-needed productivity enhancing infrastructure.

To that extent, the economic impacts described above underestimate their full contribution to economic growth. Indeed, the IMMC study estimates that one dollar of economic activity in the mining sector can contribute three or more dollars elsewhere, significantly impacting GDP growth. Similarly, for every direct mining employee, employment is generated for between 3 and 5 employees elsewhere in the economy.[2] These multiplier effects result from the provision of non-mining services to the mine community, such as meals, accommodation and entertainment, and mining employees and contractors spending their increased wealth in other parts of the economy.

[2]International Mining and Mineral Council (2014) ***The Role of Mining in National Economies*** (2nd edition), 23-24. http://www.icmm.com/document/8264

The mining multiplier effect (con't)

Our gold project employs 1,100 people, meaning that between 3,300 and 5,500 additional jobs are created as a result of the mine. This is a huge stimulus, particularly at a time of challenged economic growth and where nations around the world are struggling with unemployment levels.

The case studies below shed more light on the indirect benefits of mining and how this wealth is distributed to reduce poverty.

The more a country is able to build technological capabilities and skills to provide capital and labour for mining projects, the more national income a mining project can generate. Several mining companies have been proactive in sourcing local inputs. For example, in Ghana Newmont established the Afaho linkages programme, aimed at increasing local procurement in low-value items such as tools, paints, hospitality services, low-level maintenance and construction, and vehicle rental services.

The programme increased the number of small to medium sized businesses with the procurement contracts over three years from 25 to 125 and the value of those contracts US$1.7 million to US$14 million.[3]

The contribution of the mining sector to government revenues remains a much talked about issue. The Extractive Industries Transparency Initiative has made some progress in bringing greater transparency to government reporting. Table 5 shows the estimated contribution to government revenues according to these reports, which generally support the ICMM estimates.

Every direct mining employee generates 3-5 jobs elsewhere in the economy

Every $1 generated by mining, generates an additional $3+ elsewhere in the economy

[3]World Bank (2012) Increasing Local Procurement By the Mining Industry in West Africa, 50. http://siteresources.worldbank.org/INTENERGY2/Resources/8411-West_Africa.pdf

The mining multiplier effect (con't)

Table 5: Contribution to Total Government Revenues

	2011	2012	2013
Burkina Faso	11%	14%	N/A
Ghana	28%	27%	19%
Tanzania	9%	11%	N/A

Sources: Extractive Industry Transparency Initiative Reports – Ghana 2013, Burkina Faso 2012, Tanzania 2012

Whilst recognising the "resource paradox" as a serious issue, it is beyond the scope of this report to determine the "fair" level of taxation. This report simply aims to demonstrate that where taxation rates are too onerous, the government may lose fiscal receipts and deprive the rest of the economy of the benefits of a mining project and much-needed income growth. Clearly, benefits from taxation are also highly contingent upon the manner in which the revenue is spent.

The benefits of mining extend beyond these macroeconomic indicators. The resources sector has attracted significant attention and support from the World Bank and other international organisations to improve infrastructure and help African countries reap the full benefits of their natural resources. For example the World Bank has committed $US57.8 million to improve Ghana's gas and oil production capacity.[4] Other benefits include improvement of legislation and public administrations as governments either collaborate with mines, or work individually to improve their regimes to attract investment.[5]

[4]World Bank, Oil and Capacity Building Project – Ghana, Website visited: 3/08/2015. http://www.worldbank.org/projects/P120005/gas-oil-capacity-building-project?lang=en

[5]***http://www.oecd.org/daf/inv/corporateresponsibility/2066545.pdf

Case Studies

These case studies illustrate the socioeconomic benefits of two mining companies' projects in Africa. The figures below include the indirect impact of mining operations. Indirect impacts include revenue and employment generated from the mining company and their employees spending on local goods and services, and the flow-on effect of that expenditure. All numbers are in $US unless specified otherwise, and the numbers reflect the impact for the year 2012.

Newmont – Ghana[6]

In 2013 Newmont Gold Ghana Limited released a Socioeconomic Impact Analysis Report demonstrating socioeconomic impact of the Ahafo gold mine. The Afaho gold mine has four open pits and a process plant with production of 566,000oz (19.4% of total production in Ghana) in 2011.

Wage income is the biggest contributor to GDP, with total salaries paid to Newmont employees and suppliers amounting to $135m.

The regional impact of the mine is also significant. Within the Afaho region, the mine contributes $31m to GDP and 8,700 jobs. Employees of the mine also have twice the disposable income of those outside the region, whilst non-employees have 11% higher disposable income.

Newmont Ghana Gold Limited contributes 1% of their after-tax profits, and $1 per oz of gold sold to the Newmont Afaho Development Foundation. This foundation contributes to human resources development, infrastructure, social amenities, economic empowerment and natural resource management. Completed projects by the foundation include the establishment of community libraries, teachers and nurses' quarters, ICT centres, school buildings. Despite an economic contribution of almost $9 million as of 2012, the study notes the foundation could benefit the community more by focusing on an "investment-driven approach" rather than one-off projects.

The report noted some negative impacts as a result of the mine, including an influx of workers, leading to higher prices and impacting the real disposable incomes of other residents, and a concern of economic dependency on the mine. Despite these findings, a household survey that was conducted as part of the study found that "the overall situation had improved" since the mine's arrival.

GDP

Direct: $230m

Indirect: $130m

Total: $360m (0.95% of GDP)

Employment

Direct: 1,700 jobs

Indirect: 45,500 jobs

Total: 47,200 jobs

Government Revenues

Direct: $160m + $31m carried interest income

Indirect: $18m

Total: $209m

[6]Kapstein, E. and Kim, R. (2011) *The Socio-Economic Impact of Newmont Ghana Gold Limited*. http://www.newmont.com/files/doc_downloads/africa/ahafo/environmental/Newmont-Ghana-Ahafo-Mine-Socio-economic-Impact-Study-Report_v001_b14e5m.pdf

The mining multiplier effect (con't)

Acacia Mining – Tanzania

Acacia Mining (formerly African Barrick Gold) released a Socioeconomic Impact Analysis Report on the economic effects of its three gold mines operating in Tanzania in 2013. These mines are the Bulyanhulu, Buzwagi and North Mara mines. In 2012 these mines collectively produced 595,184 ounces of gold. At the time the report was written, Acacia Mining was also in the process of closing their Tulawaka mine.

Labour income was a large contributor to GDP, providing direct and indirect contributions of $202.2 million and $370.4 million respectively. The average wage of an Acacia Mining employee was $14,300, significantly higher than the $1,390 paid to an average Tanzanian worker outside the mining industry.

Acacia mining supported the local economy. 91% of employees were Tanzanian nationals and 62% of total supplier purchases ($514 million) from Tanzanian businesses. Of these purchases, $125 million were purchased from businesses local to the mines. Majority of tax revenues stemmed from corporate income tax, individual income tax (including withholding tax) and royalties.

Social investments in Tanzania totalled more than $14 million supporting various health, infrastructure and education initiatives. These included short-term projects, such as aid to drought stricken regions, and long term investments like the $300,000 contribution to the Bugando Medical Centre and $370,000 to fund various schools.

GDP

Direct: $275m

Indirect: $706.1m

Total: $981.1m (3.5% of GDP)

Employment

Direct: 5,469 jobs

Indirect: 60,900 jobs

Total: 66,369 jobs

Government Revenues

Direct: $160.9m

Indirect: $62.4m

Total: $222.3m

Conclusion

In conclusion, what to make of the PwC analysis set out in this report?

A challenge to governments – are you willing to leave your share of the pie, your share of the returns from a mine, to a level that allows the miner to generate sufficient return on their investment to justify putting the capital on the line in the first place – in other words for the miner to take the risk. For as the analysis shows, if this return is not sufficient there will be no mine. And a larger portion of zero is still zero.

A challenge to the mining industry – understand your governments and the pressures they are under. Be transparent; share with them the returns your project is forecast to generate. And don't push it too far on fiscal negotiations, because it holds equally true for miners, a larger portion of zero profits remains zero.

To both miners and governments - are you willing to work together collaboratively to identify areas where efficiency can be obtained or costs decreased, such that the profits generated by the project for both mining company and government are increased?

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Appendix A
Information on tax regimes

In compiling the above analysis, we have utilised taxation summaries on each of Tanzania, Burkina Faso, Namibia and Ghana, prepared by various sources. Only local taxes have been included due to variations in host country and other taxes as a result of different corporate structures. The key taxes and associated assumptions are contained in the table to the right;

Rates of tax amortisation	Amortisation rate
Ghana	20%
Tanzania	20%
	100%
Burkina Faso	5 – 20%
Namibia	33%

Tax Type	Ghana	Tanzania	Burkina Faso	Namibia
Corporate income tax	35%	30%	28%	37.5%
Royalty rate on gold	5%	4%	5%	3%
Income tax rates - local employees	21%	30%	25%	18%
Income tax rates - expatriate employees	20%	15%	20%	18%
Dividends to government (government free carry)	10%	20%	10%	0%
Payroll tax	0%	5%	4%	0%
Social Development Levy	0%	0%	1%	0%

Assumption	Details of assumption
Value-added tax (VAT)	All mining companies are assumed to be either exempt or able to receive a refund for VAT, and therefore the net effect is assumed to be zero.
Withholding taxes	Withholding taxes are assumed to be already included in costs (including payee taxes). The analysis excludes repatriation of profits and funding to shareholders.
Customs and excise duties payable on inputs	Customs and excise duties payable on inputs are assumed to be already included in costs.
Fiscal Stabilisation Levy (Ghana)	Ghana's Fiscal Stabilisation Levy has been phased out, and has thus been excluded from the model.
Service Levy and other small taxes	Small taxes have been excluded from the model as their impact on profits and government revenues is negligible. This has allowed for analysis to focus on the impact of major taxes.
Fiscal sustainability agreements	Companies are assumed to pay actual tax rates, rather than negotiating different rates through fiscal sustainability agreements.
National social security fund payments (Tanzania)	Tanzania's national social security fund payments are assumed to be already included in costs.
Royalties (Burkina Faso)	Royalty rates in Burkina Faso are between 3% and 7% depending on the gold price. For the purpose of the model at $1,175/oz the royalty rate is assumed to be 5%.
Government free carry (Tanzania)	Tanzania's government free carry rate can be between 10% and 50%. For the purpose of the model the government free carry rate is assumed to be 20%.
Other tax assumptions	In many countries taxes can be varied, such as through the provision of tax holidays in the mining development agreement. We have assumed no variation from the statutory rates. Australian corporate tax has not been modelled.

Appendix B
Key Project Assumptions

Life of mine	
Exploration	Before Commencement
Development (inc. permitting and licence approval)	4 years
Production	10 years
Closure and rehabilitation	1 year
Production	
Yearly (oz/per annum)	150,000
Capital expenditure	
Exploration ($m)	30
Mine development and construction ($m)	150
Sustaining capital ($m per annum)	15
Closure and rehabilitation ($m)	20
Gold Price	
Real price (held constant year on year)	$1,175
Costs	
Cash cost ($/oz)	699
All In Sustaining Costs ($/oz)	957
Discount Rate	
Rate used to discount future cash flows	8%
Benchmark IRR	
Minimum IRR required for positive investment decision	25%
Employment	
Local employees	1,100
Expatriate employees per mine	11
Local employees salary (annual $)	25,549
Expatriate employees salary (annual $)	122,900
Dividend payout ratio	
Average % of profits paid as dividend	27%

Note – all amounts in US$ unless otherwise stated.

Appendix C Sources

Information	Source
Taxation Rates	Mining Taxes for Tanzania, PwC online guide
	Mining Taxes for Ghana, PwC online guide
	PwC – Worldwide tax summaries database
	2015 African Country Reports & Fiscal Guides, KPMG
	Guide to Fiscal Information, Key Economies in Africa 2014/15, Deloitte
	Mining Journal – Burkina Faso, Blackthorne Resources
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Costs & Capital Costs	Thomson Reuters 2015 Gold Survey
	Gold companies' cash costs and all-in sustaining cash costs' article dated 22 Sept 2014, Market Realist
	Technical Report on Feasibility Study of Wassa Open Pit Mine, Golden Star Resources Ltd
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	2014 Preliminary Operating Results, 22 Jan 2015, IAMGOLD Corporation
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	Africa Down Under August 2012, Azumah Resources Limited
	News article 25 November 2014, African Gold Group
	Goldinvesting News article, www.investingnews.com
	17 December 2013 announcement, True Gold Mining Inc
	Technical Report for the Yaramoko Gold Project, Burkina Faso, Roxgold Inc
	10 January 2013 news announcement on Otjikoto Project, B2Gold Corp – Market Wired.com
	Deferred stripping – see what the miners are raving about, www.charteredaccountants.com.au

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	10 January 2013 news announcement on Otjikoto Project, B2Gold Corp – Market Wired.com
	News article Asanko Gold Mine Phase 2 Expansion Plan, Asanko Gold
	2 March 2015 news release, Pinecrest Resources Ltd
	22 April 2014 news release, Roxgold Inc
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	News article 25 November 2014, African Gold Group
	Platreef project update, Ivanhoe Mines Ltd
	26 March 2014 Corcoesto Gold Project update, Edgewater Exploration Ltd
	Lindero Project Overview, Goldrock Mines Corp
	The financial aspects of LCA in the Polish mining industry, Polish Academy of Sciences
Wages	Hays Mining Sector Employment Study, Hays Plc
Number of employees	Acacia mining impact study, Acacia Mining
Size of mine	Ghana EITI Report 2013, Extractive Industries Transparency Initiative
Dividend – payout ratio	Payout ratios database, www.gurufocus.com
Depreciation calculation	Capital Budgeting and Valuation, http://finance.wharton.unpenn.edu

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