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The mining for development framework for the Philippines

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The Mining for Development Framework for the Philippines

by

Cielo Magno

Assistant Professor, UP School of Economics

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The Mining for Development Framework for the Philippines

Cielo Magno, PhD[1]

[1] The author is an Assistant Professor in the School of Economics of the University of the Philippines in Diliman. She is also the National Coordinator of Bantay Kita-Publish What You Pay (PWYP) Philippines, a member of the PWYP Global Council and the multistakeholder's group of the Philippine Extractive Industry Transparency Initiative (PH-EITI). The author maybe reached at cmagno@econ.upd.edu.ph.

This paper builds on the previous work of the author as a resource person of the Asian Development Bank on the Comparative Policy Study Towards a Framework for Resource Taxation Principles.

Abstract

Mineral extraction alone is not sufficient to trigger sustainable development in developing countries. The mainstream paradigm on mining for development suggests that mineral-rich developing countries need to formulate a fiscal policy that can balance the need to maximize fiscal revenue while ensuring that the country has an attractive investment climate. The presence of mining companies in poor remote communities is sufficient to initiate development. In this discussion, it is suggested that the fiscal policy should take into account the state of governance where mining is being conducted, the extent of linkages mining creates in the local economy and whether the Regalian doctrine applies to ownership of minerals. The raise-to-the-bottom approach in designing fiscal policies does not necessarily benefit mineral-rich developing countries. In the case of the Philippines, a more comprehensive development framework is necessary to ensure that mining contribute to the sustainable development of the Philippines. The framework should include: (1) good governance of the public and extractive sectors which entails institutionalization of transparency and accountability mechanisms, implementation of the United Nations guiding principles on business and human rights and strengthening of government's regulatory capacity; (2) effective allocative capacity and capacity to effectively manage the returns from the sector by the government so that the proceeds from mining contribute to sustainable development and ensure intergenerational equity; (3) establishment of linkages between the extractive sector and the rest of the economy to maximize the benefit of the extractive activity; and (4) fiscal policy that reflects fair share in the extraction of resources, the state of mining governance and the environment where extraction is conducted. Fair share in mining includes payment for the minerals owned by the government on top of the regular taxes the government imposes to all industries.

Keywords: mining, natural resource extraction, extractive industry, sustainable development, taxation

JEL Classification: E62, L72, O13, H23

I. Introduction

The mineral potential of the Philippines is undeniable. The Philippines is one of the most mineral-rich countries in the world. The estimated value of the country's mineral resources is around US$840 billion (Minerals Development Council, 2007). Globally, the Philippines ranks third in gold, fourth in copper, fifth in nickel and sixth in chromite in terms of occurrence per unit area (Board of Investments, 2011). These mineral deposits are understandably eyed as a way to finance the development of the country.

The exploitation of mineral resources in the Philippines, however, is founded uncomfortably on certain unresolved issues. Currently, the sector contributes very little to national development. The total mining contribution to the country's GDP was on average 0.7% in 2012-2014 (MGB (Mines and Geosciences Bureau), 2015). At the same time, mining companies do not significantly contribute to poverty alleviation in the host communities. While poverty incidence in these provinces may have declined from 2006 to 2012, at 30-60 percent, it is still higher than the national average of 25-26 percent (except in Benguet and Zambales which host major and critical hubs of urban economic activity) (National Statistical Coordination Board, 2013).

But the country is also one of the few nations that is, in its entirety, both a biodiversity hotspot and a megadiverse country, placing it among the top priority areas for global conservation. A biodiversity hotspot is a biogeographic region that is both a significant reservoir of biodiversity and is threatened with destruction. Conservation International explained that the remaining natural habitat in these biodiversity hotspots amounts to just 1.4 percent of the land surface of the planet, yet supports nearly 60 percent of the world's plant, bird, mammal, reptile, and amphibian species. Some key biodiversity areas that are directly impacted by mining in the Philippines are Palawan, Samar, South Cotabato, Mindoro, Romblon, Agusan del Norte and Dinagat Island.

The Philippines has many endemic species of plants, birds, mammals, reptiles, amphibians, freshwater fish and invertebrates. In recent decades, natural and anthropogenic causes have cost the country a considerable number of species. Extraction of minerals is one of the most notable threats of the country's biodiversity.

Aside from its biodiversity, another consideration is climate change. The Philippines is the third most vulnerable country in the world to weather-related extreme events, earthquakes and sea level rise (Kreft, Eckstein, Junghans, Kerestan, & Hagen, 2014). The country is exposed to typhoons, floods, landslides and droughts (World Bank, undated). Mining activities can aggravate the effects of these extreme events.

Evidently, mineral extraction cannot easily be carried out without taking these factors into consideration. This study examines the existing literature on mining for development and identifies a framework for fiscal and institutional requirements to ensure the extraction of minerals contribute to development in the Philippines.

II. Mining and sustainable development

The presence of minerals offers a huge economic opportunity for developing countries. However, the exploitation of these non-renewable resources has significant implications on long term sustainable development. Sustainable development is defined as "development that meets the needs of the present without compromising the ability of the future generations to meet their needs" (UNCTAD, 2007; United Nations, 1987). The main challenge to mineral-rich developing countries is to ensure that the extraction of

the non- renewable resource contribute to development of the country without compromising the welfare of the future generations.

The mainstream framework to utilizing minerals for development suggests that mining can contribute to development by triggering economic activity in remote and depressed areas through transfer of skills and technology. A mining industry that is committed to the sustainable development of underdeveloped areas can have a significant impact in the local economies, more than just being a generator of foreign exchange and source of tax revenues. The presence of large scale mining that undertakes community development efforts in a remote area can initiate the development of small and medium enterprises. It can create employment and expand the demand for consumer goods and services in the area. The presence of the mine could also lead to development of social capital, institutional strengthening of the community planning frameworks and improved environmental protection. An example of this is the Whitehorse Mining Initiative of 1994 in Canada. In this regard, the World Bank recommends stable and competitive fiscal norms to attract investment in the mining industry of mineral-rich developing economies (Remy, 2003).

This perspective challenges mineral-rich developing countries to formulate a fiscal policy that can balance the need to maximize fiscal revenue while ensuring that the country has an attractive investment climate. The fiscal policy should take into account the capital intensive nature of the industry, the long lead times before profits are made, and its sensitivity to global prices (Tadros & Svensson, 2010).

This mainstream thinking warns policymakers that imposing high effective tax rates will increase tax collection but this could drive away investors and ultimately have the opposite effect of reducing potential revenues. Investors will assess the profitability of the investment climate in one country and compare them with opportunities elsewhere (Tadros & Svensson, 2010). Because of limited capital for investment, mining companies may opt to carry out their businesses in countries that impose less tax.

On the other hand, if the effective tax rate is too low, the government may forgo revenue as some African countries (Ghana, Tanzania, Sierra Leone, Zambia, Malawi, South Africa, and the Democratic Republic of Congo) experienced. From the 1990s to 2000s these countries focused on implementing competitive tax regimes for mining which included lowering taxes and granting incentives to attract foreign direct investments into the sector. A study found that these countries were not able to maximize the benefit due to them during the 2003 to 2008 price boom because (1) they were not able to capture the anticipated windfalls during the price boom; (2) mining companies operating in Africa were granted too many tax subsidies and concessions; and (3) there is high incidence of tax avoidance by mining companies (Lambrechts, 2009).

Most African countries that are able to attract foreign direct investments in mining were not able to transform it into broader development gains—there were barely any tangible benefits to the population. Angola, Equatorial Guinea, Nigeria and Sudan were among the top five sub-Saharan African host countries of inward FDI stock in 2005. They were also the top four sub-Saharan oil exporters. However, these countries ranked very low in the Human Development Index of the United Nations (UNCTAD, 2007).[2]

Income from mining jobs in South Africa's mining conglomerates created demand for local micro enterprises and has been an important source of remittances to Lesotho, Mozambique, and Malawi. However, Lambrechts (2009) argued that this is negligible compared to the massive economic transformation required to trigger sustainable development in the least developed countries. If anything,

[2] Human Development Index: Equitorial Guinea- 121, Sudan- 141, Nigeria-158 and Angola-160.

the negative impacts of large scale mining to the environment and livelihoods of communities living near mining areas often leads mining activity to cause rather than reduce poverty (Lambrechts, 2009).

The economic contribution of large scale mining can be direct through employment, profits and taxes and indirect through the purchase of goods and services. The amount of employment created by large-scale mining, however, is limited because it is highly capital-intensive in nature. Local procurement depends on the availability of inputs and procurement policies of the mining company. In the absence of downstream manufacturing industry, the revenue through taxation and profits from mining are the most significant contributions of large scale mining to a developing economy (Lambrechts, 2009; UNCTAD, 2007). The linkages for the extractive sector are limited for the sector to be an engine for development (Stevens, Lahn, & Kooroshy, 2015).

The United Nations Conference on Trade and Development (UNCTAD) concluded that the development experience of mineral-rich developed countries cannot be replicated in the current context of mineral-rich developing economies. Developed countries used most of their mineral extraction locally. There was incentive for local processing at that time because of high transportation costs. However, the current context is characterized by relatively low transportation costs and globalized markets. The intensive exploitation of mineral resources in developing countries has taken place to respond not to their development needs but to the needs of external users. Its human resource capabilities are not enough to build an integrated mineral activity and create endogenous learning and innovation around it. This new context may limit the relative capacity for mineral-rich countries to benefit from their mineral endowments. In this regard, a different overall development strategy may need to be developed with an important objective of building a diversified economy through investment in human capital, infrastructure and productive capacity (UNCTAD, 2007).

Stevens et. al (2015) also argued that countries that rely on extractives for development such as Norway, Australia, Canada, the United States and the United Kingdom and which do not suffer from the resource curse are not typical. Norway, in particular, "has long-established functioning democracy, well-functioning political institutions that are transparent, low levels of corruption in the public sector and small population that was extremely well educated and a very small percentage was considered to be living in poverty."

The United Nations Conference on Trade and Development (UNCTAD), United Nations Economic Commission for Africa (UNECA) and the International Monetary Fund (IMF) all agreed that the development benefit of mining in Africa is the potential to generate public revenue through a transparent tax and budget system (Lambrechts, 2009). The tax payments of companies to the government were deemed as a more important economic benefit than the direct social services the companies provide to communities. Mining companies conduct social services in their host communities to improve their social acceptability. These programs are entirely voluntary, will vary from year to year, and are not distributed equitably. These social services comprise a very small share of the company's overall profits and are not enough to replace the potential revenue of government from taxation (Lambrechts, 2009).

In response to the failure of African countries to benefit from the windfall income from mining, African governments implemented reforms to increase taxes on mining to get fair share from mining activities. However, global prices started to fall in 2008. As a result companies continue to pressure governments to amend the tax regimes. However, Lambrechts (2009) recommended that governments ought to accept lower output from mines today, if that is the impact of equitable taxation, as prices will rise again in the future, and they will be able to capture a fairer share of the rent.

The main benefits from mining are the return on capital which largely accrues to foreign shareholders and banks and taxation which flows to the host government (Auty, 2006; Lambrechts, 2009).

As such, an equitable and transparent mining tax regime is of paramount importance if mining wealth is to translate into future development. Governments should not forgo tax revenue over investment for marginal or exploration projects especially because the social and economic benefits of such projects are minimal and they often cause harm to local communities.

Aside from ensuring fair share in the extraction of natural resources, effective governance is a necessary element in ensuring mining contributes to sustainable development. The resource curse has been attributed to corruption and conflict brought about by the extraction of natural resources. This thinking gave birth to the Extractive Industry Transparency Initiative (EITI), the global standard which requires countries to disclose how much the government is receiving from the extractive sector and how much the companies paid the government. It was launched in 2002 to focus on transparency of both the government and the private sector in utilizing natural resources. It has now moved towards ensuring accountability by requiring governments to disclose how they are spending the money from the extraction of the resources. The global sentiment is to ensure that money from extractives is managed properly to avoid the “Dutch disease”.

Some countries avoided the resource curse by managing the returns from extraction not only by ensuring that they do not suffer from "Dutch disease" but by diversifying their economy and ensuring that there will be long term benefits from the proceeds of extractives. The institutional capacity of the governments to invest and manage this portfolio to ensure diversification of the economy is critical. A paper published by the Chatam House argued that there are serious risks to development policies that are based on the extraction, monetization and domestic consumption. Countries that avoided the resource curse and achieved growth were able to diversify away from the extraction of the resources. Countries should view proceeds from extractives not as income but the "reshuffling of a country’s portfolio of assets: exchanging resources below ground for cash above ground." The paper argued that success of countries is determined by the extent to which a country is able to invest the proceeds from extractives productively and by forging linkages between the extractive sector and the rest of the economy (Stevens et al., 2015).

The challenge for developing countries to utilize the mineral deposit to contribute to sustainable development is three fold: how to create value from the mineral deposits; how to capture that value locally; and how to make the best use of revenues created from the extractive activities (UNCTAD, 2007). The extraction of mineral deposits and flow of revenue in the country is not a guarantee of social and economic development. The returns from extraction should be invested in social and economic activities that will benefit the current and future generations of the country. It should also be treated as capital and should be used to support sustainable economic activities and diversify the economy instead of just a regular government revenue that is added to the annual budget of the government (Stevens et al., 2015).

Based on the following discussion, I propose four necessary conditions to ensure that mining contributes to the sustainable development of the Philippines: (1) good governance and effective regulation of the extractive sector; (2) allocative capacity and capacity to effectively manage the returns from the sector by the government; (3) linkages between the extractive sector and the rest of the economy; and (4) fiscal policy that reflects fair share in the extraction of resources, the state of mining governance and the environment where extraction is conducted.

A. Good governance of the sector

The core principles of good governance in the extractive and the public sectors are transparency and accountability. In 2002 then Prime Minister Tony Blair launched the Extractive Industries Transparency Initiative (EITI). EITI is a coalition of governments, extractive companies, civil society

groups and international organizations. It is a voluntary public–private initiative to increase the transparency of payments made by extractive industries companies to the host government. Under the initiative, companies were obliged to report what they pay in cash and in oil and gas volumes; the government has to report what it receives; and an independent auditor reconciles the numbers and compiles reports. EITI is governed by a multistakeholder's group representing the government, industry and the civil society. In 2012, the EITI board adopted a new standard for membership that goes beyond reporting and reconciling of payments. It now includes disclosure and monitoring government spending and it encourages disclosure of contracts and beneficial ownerships. Local multistakeholder's groups can innovate and adopt additional requirements for disclosure on top of the minimum standard set by the international board.

The law on access to information complements the implementation of EITI in many countries. The law allows citizens to freely access public documents and hold governments accountable. Because EITI disclosure is limited, the right to access information allows citizens to access and examine other documents related to the mining operations. Access to information allows the public to make informed decisions regarding extraction of resources.

In 2011, the Human Rights Council of the United Nations endorsed the Guiding Principles on Business and Human Rights. The Guiding Principles provides a framework to address business impact on human rights. The Guiding Principles suggest a process termed 'human rights due diligence' as the key means for businesses to identify, prevent, mitigate and account for how they address their adverse human rights impacts (Advocates for International Development: Lawyers Eradicating Poverty, undated).

The main objective of this is to uphold human rights by advising companies to adhere to global standards, while tracking effectiveness in this endeavor. As operations, context and impact may change, a company should periodically reassess its potential or actual impact on all human rights as part of its due diligence processes. It clarifies the responsibility of States to provide access to an effective remedy to those affected by business activities and guidance to companies on the steps to take to ensure that they respect human rights and address any impact. The UN Guiding Principles constitute a global standard to assess and account the action of the States and companies on human rights and business (United Nations Human Rights, 2014).

The government should also have the institutional capacity to effectively monitor mining operations and minimize the negative impact of mining to the environment. Because of the deep environmental footprints of extractive industry, the government should ensure that damages to the environment are minimized and that companies are able to comply with the regulatory policies. Furthermore, the government should have the capacity to audit the mineral inventory of companies and track the sale of minerals to ensure proper payment of government shares.

B. Allocative capacity and ability to manage returns from investment

To manage the proceeds from mining, countries are usually encouraged to set up natural resource funds or sovereign wealth funds. The funds can serve several purposes. They can be utilized to cover budget deficits when resource revenues decline; to save for future generations; to earmark for national development projects; to help mitigate Dutch disease by investing abroad; to reduce spending volatility, and protect oil, gas and mineral revenues from corruption (Bauer, Rietveld, & Toledano, 2014). However, the fund should be governed properly. Without proper safeguards, natural resource funds can be used the source of corruption, patronage politics and wasteful spending. Based on the study of Bauer et. al (2014), the following are the six steps in promoting good governance of the natural resource fund:

1. Set clear fund objective(s) (e.g., saving for future generations; stabilizing the budget; earmarking natural resource revenue for development priorities).
2. Establish fiscal rules—for deposit and withdrawal—that align with the fund's objective(s).
3. Establish investment rules (e.g., a maximum of 20 percent can be invested in equities) that align with the objective(s).
4. Clarify a division of responsibilities between the ultimate authority over the fund, the fund manager, the day-to-day operational manager, and the different offices within the operational manager, and set and enforce ethical and conflict of interest standards.
5. Require regular and extensive disclosures of key information (e.g., a list of specific investments; names of fund managers) and audits.
6. Establish strong independent oversight bodies to monitor fund behavior and enforce the rules.

More specifically, there are recommendations to allocate the returns from extractives equitably by financing human capital development . Unfortunately, natural resource abundance does not automatically translate to greater investment in public health or education among natural resource rich countries (Acosta, 2012; Cockx & Francken, 2014)

Aside from putting up natural resource funds and investing on human capital, diversification of the country's economy so as not to create dependency on the extractive industry is important for long term growth. These resources are finite. Thus, it is vital for the government to ensure that the country has other sources of income other than the mineral resources. It requires the development of the non-extractive sector. The measure of effective diversification is to use the proceeds from extraction to productive activities and "create a stream of income that continues to flow when resources are exhausted" (Stevens et al., 2015).

Countries that are cited for being successful in diversification of the economy are Chile, Malaysia and Indonesia. Chile developed its agriculture and fishing industries, Indonesia expanded its agriculture and manufacturing sector and Malaysia supported its strong manufacturing sector (Esanov, 2012). The Revenue Watch Institute (now Natural Resource Governance Institute) examined six resource rich countries that implemented policies to diversify their economies. These countries are Azerbaijan, Botswana, Chile, Indonesia, Kazakhstan and Malaysia. The study suggests key factors for successful diversification (Esanov, 2012):

1. Maintaining a good macroeconomic environment;
2. Designing a realistic diversification strategy that takes into consideration local conditions and geographic factors;
3. 3. Creating well-functioning government institutions to aid the diversification process;
4. Adopting policies to mobilize financial resources and support the general public;
5. Building adequate physical and social infrastructures to support diversification efforts.

C. Linkages

The literature has established that it is not enough to extract minerals to contribute to development. Backward and forward linkages have to be created.

Indonesia is proposing an export tax on raw ore to reduce the over exploitation of resources and encourage downstream processing of ore (Thaher & Kebede, 2012). Mining companies are required to process raw ore in Indonesia under Mining Law No. 4/2009 and Regulation no. 7/20012 issued on

February 6, 2012. The law specifies an export duty of 20% of the export price of certain ores and minerals including iron pyrite, iron ore, manganese ore, copper ore, nickel ore, cobalt ore, aluminum ore, lead ore, zinc ore, chromium ore, titanium ore, zirconium ore, silver ore, gold ore and platinum metals group. The export duty is seen as relaxation of the outright ban. These policies are consistent with the government's intent to promote downstream processing in the country (Watson, Mardi, & Shihab, 2012). The country is also divesting foreign ownership of mining activities at varying degrees, depending on the level of mineral processing done by the company (PricewaterhouseCoopers, 2014). More than just increasing tax rates and imposing new taxes, Indonesia is linking its fiscal policy to the development of downstream industry to ensure that it is able to maximize the benefit from the extraction of its non-renewable resources.

South Africa is also developing a "National Industrial Policy Framework" and an action plan which includes targeting growth in the mining industry. It is also applying differentiated export cargo dues depending on the extent of processing of the minerals. The discount in tariffs will be based on the following stages: Stage 1: minerals are not processed (i.e. primary action of mining such as ore or concentrate), Stage 2: involves limited processing (i.e. converting concentrate into a bulk tonnage intermediate product such as metal or alloy), Stage 3: includes higher value-adding processing (i.e. semi-fabricated products) and Stage 4: represents the maximum possible value addition (i.e. finished goods ready for sale) (Department of Trade and Industry, undated).

In 2011, Zambia has imposed a 10% tax on export of copper concentrate to encourage the processing of copper in the country. Zambia is Africa's second largest copper producer (Reuters, 2015). Now, the country is contemplating on banning the export of unprocessed mineral products to maximize the benefit of the minerals in the country to properly account the country's mineral export.

On the part of the private sector, the group "Engineers without Borders" in Canada formed the non-profit organization Mining Shared Value. The organization recognizes the role of mining to contribute to the development of local economies. They help Canadian mining companies operating in developing countries to maximize local procurement of goods and services to increase backward linkages of the industry. Local procurement of goods and services "lead to more local jobs and income, transfers skills and technology, and helps to create vital domestic business networks" (Mining Shared Value, undated) .

D. Fair share in the extraction of resources

Taxation in mining suggests the balancing of government's role to maximize the economic benefits of mining to the community and at the same time attract and retain the investment necessary to continue to realize the benefits for as long as possible (Guj, 2012). Most governments try to strike a balance between government and investor revenue needs by implementing a "fair and equitable" system. One approach is to look to see if the fiscal system is competitive, i.e. using the market as a proxy to determine whether a system is "fair" (J. M. Otto, 2000:2). However, many argue that competition between countries is a race to the bottom approach that leaves countries with nothing to gain from mining. Mineral resources are unique to a country. Investors invest in a country not only because of the fiscal package but the quality of minerals in a country. Mining is location specific. Taxation should instead reflect the social, cultural and environmental damages caused by mining. Instead of racing to the bottom, mineral resource rich developing countries should cooperate to ensure that they get proper compensation.

In addition, governments have to decide on the rate of extraction of their non-renewable resources. Governments may opt to have only a few mines that are heavily taxed. Proponents of this approach argue that slower development of natural resources helps to preserve resources for future generations. Another argument is that the development of the extractive sector at a slower pace allows

countries and governments to develop institutional capacity, economic linkages and economic diversification (Stevens et al., 2015). A government may tax mines heavily to discourage rapid development. Others may allow many mines to operate simultaneously through minimal taxation. This approach is premised on the belief that maximizing mining provides the infrastructure and related development that can lead to broader sustainable development goals (J. M. Otto, 2000).

There are three main objectives in taxing the mining sector:

1. The government has to secure an appropriate share in the mineral rent as owner of minerals. If valuable minerals are extracted, the government should receive separate payment over and above the regular tax (Sarma & Naresh, 2001).

2. The government has the responsibility in achieving economic and social development. It has the primary responsibility to ensure that the mineral extraction is socially optimal and equitable. It also has to ensure that the sector contributes to public revenues in the same manner as other sectors of the economy to promote sustainable economic development. To accomplish these goals, a system of mineral levies should be characterized by the generally acclaimed principles of certainty, fiscal stability, and administrative convenience apart from neutrality (Sarma & Naresh, 2001).

3. The government has the responsibility to minimize the damage to the environment and ecological balance. Taxation is a good economic method to address the concern of the conservation movement that resources are being selfishly exploited too quickly producing cheap products that are consumed wastefully (Hotelling, 1931).

An optimal form of taxation is the one that is progressive with respect to resource rent. The idea behind resource rent taxation is "to tax only that portion of net investment proceeds as it exceeds the minimum rate of return required by the investor to undertake an investment. The imposition of tax on this basis should not, in principle, distort investment decisions, in so far as it does not alter the pre-tax merits of an investment" (Land, 2009:163).

Examples include

1. progressive profit taxes where taxable income is taxed at applicable escalating tax rate and a profit-to-sales ratio is used to define the tax rate in a formula that also includes starting and top rates of tax;

2. price-based windfall tax is an alternative to progressive profit tax. Price-based profit windfall tax uses the price of commodities as a proxy for profitability to trigger higher tax rates of supplementary taxes. The limitation of this approach is that product prices alone do not determine the level of profitability achieved on an annual basis;

3. sliding-scale royalties imposed on production escalate on the basis of a chosen threshold;

4. Carried interest participation where state equity participation is structured to operate as if it were a progressive tax. These progressive taxations are currently being implemented in a number of countries. Progressive taxation relies on the capacity of the government to negotiate, administer and enforce taxation (Land, 2009).

According to Land (2009:164) "the minimum return required by an investor to undertake an investment is not fixed but will vary in relation to the prevailing cost of capital and expectations about the

financial outcome of exploiting different deposits. A compensatory return on capital consists of a basic return equivalent to the rate of interest on risk-free long-term borrowing plus whatever margin the investor considers necessary to compensate for the technical, commercial and political risks associated with investments." Land stated that it is difficult for governments to anticipate the minimum return that an investor will find acceptable given the risk related to the industry. In principle, the minimum return should be no higher than the returns of investors on comparable investments.

Governments usually imposed mineral taxes in the form of royalties aside from the usual taxes imposed on any other business activities. Royalties allow governments to collect tax revenue when mining profits are low or even nonexistent. Imposing high royalties undermines project viability and deters investment. Good practice is to define royalty rates in a country's mining law as non-negotiable percentages of the basis used to value metallic and fuel minerals (Tadros & Svensson, 2010).

Royalties are usually imposed by nations when minerals belong to the state. It serves as a payment for the state's minerals (J. M. Otto, 2000:6). It also serves as compensation for the depletion of non-renewable resources. Special mining taxes such as royalties are taxes imposed on top of general income taxes and other forms of taxation levied on all sectors of an economy (Guj, 2012).

The following table summarizes the different forms of mining royalties collected by countries.

Table 1: Different Forms of Mining Royalties

Unit based (specific royalty)	Tax base is a physical unit (volume or weight)
Ad valorem	Based on the value of production
Profit based	Tax base is an accounting concept of profit
Economic rent	Tax base is a direct measure of economic rent
Hybrid systems	Combining a profit or rent based system with an ad valorem system
Production sharing	Share of government in kind

Source: (Guj, 2012)

Table 2 provides a comparison of sample royalties, the equivalent rates and the basis for computation from different countries.

Table 2: Sample Royalties in other Countries

Country	Rate (percent)	Basis
Botswana	3-10	Ad valorem (net smelter return)
Brazil	3	Gold: gross sales revenue
Ghana	3-12	Ad valorem (sales revenue)
Guyana	5	Gold: gross sales revenue
Mozambique	3-12	Ad valorem (sales revenue)
Namibia	5-10	Ad valorem (sales revenue)
Suriname	2	Gold: based on gross sales; Other: based on net sales
Tanzania	0-5	Ad valorem (net smelter return)
Zambia	2	Ad valorem (net smelter return)
China	1-4	Unit based and ad valorem

India	0.4-20	Unit based or ad valorem
Indonesia	2.5 (gold) (placer gold, 7.5)	Unit based/ad valorem
Mongolia	2.5 (except placer gold, 7.5)	Ad valorem
Myanmar	1-7.5	Ad valorem
Papua New Guinea	2	Ad valorem
Philippines	2	Ad valorem; 0 for coal
Western Australia	2.5-7.5	Ad valorem depending on the degree of processing
Northern Territory	18	Profit based
Argentina	0-3	Ad valorem
Bolivia	1-6	Ad valorem, sliding scale based on ratio
Brazil	0.2-3	Ad valorem
Chile	0	
Dominican Republic	5	Ad valorem (creditable against income tax, based on FOB export)
Mexico	0*	
Peru	0-3	Ad valorem, sliding scale based on annual cumulative scales

Source: (J. Otto et al., 2006; Tadros & Svensson, 2010)
*There are pending laws to impose mining royalties.

Asia-Pacific nations[3] examined by Otto (2006) levy some sort of royalty, with the prevalent forms being unit-based (mainly for industrial minerals) and ad valorem–based royalty. Ad valorem rates tend to be low, typically 2–3 percent for base metals. The value basis varies from country to country but typically looks to a market value rather than an invoice value.

The other forms of taxes and incentives imposed on mining operations are as follows (J. M. Otto, 2000):

Taxes	Incentives
- income or profits based tax (common) - import duty (rare: exemptions often available) - export duty (rare: exemptions often available) - royalty tax (common: unit type, *ad valorem* type, profit type) - application/issuing/registration fees (common: usually minor) - surface rentals (common: usually minor) - withholding tax (common: loan interest, dividends, services) - VAT (common: exemptions or credits usually available) - stamp duty (common: usually minor) - sales tax (rare: exemptions usually available) - local government taxes (common: usually a property tax based on book or assessed value) - mandatory "payroll" based taxes paid by	- accelerated depreciation (common) - depletion allowance (rare) - ring-fencing (common) - tax stabilization (used in some large producer developing countries) - exploration expense carry-forward (common) - deductible environmental, reclamation, closure costs (common) - tax holidays - loss carry forward (common) - loss carry back (rare)

[3] China India Indonesia Mongolia Myanmar, Papua New Guinea and the Philippines.

company: (common) - government equity (very rare: except in West Africa region)	

Because of the price volatility of mineral commodity, the industry can generate surplus revenues in excess of all costs of production when prices are high. This surplus revenue is known as economic rent and is calculated as "the margin realized after netting off from the gross mineral revenue all the costs of production (recurrent and capital recovery costs) as well as a minimum return on capital high enough to attract capital and retain it in the project. This minimum required return on capital, termed "normal profit", compensates investors for foregoing the next best alternative investment opportunities, as well as for the timing and risk of the uncertain cash flows expected from the project" (Guj, 2012).

The economic rent has been a target of special taxation regimes in the mining sector. Usually referred to as windfall taxes, these taxes are designed to capture additional revenue during commodity price booms. This tax is normally tied to the price of the commodity (Tadros & Svensson, 2010). It is collected on top of the regular taxes and royalties.

Otto (2002) compared the taxes and rate of profits of mining companies in developing countries. The data that were used in the study were collected in 1999-2000. While policies may have changed from 2000 to present time, his findings give a snap shot of the comparative regimes in mining. Global trend in mining taxation is to increase the share of governments from mining proceeds. A number of countries have increased their tax rate since the study was conducted. The Philippines has not amended its tax regime on mining since 1995 and remains among the lowest taxing nations with respect to the mining sector.

Recent trend shows increases in taxes on exploitation of resources. Australia passed the Minerals Resource Rent Tax imposing a 30% tax on the profit of all new and existing coal and iron ore projects (Griffiths, 2012). China increased the taxes on iron ore to 80 percent of the standard levy, from the previous 60 percent (Wildau, Lian, Yam, Stanway, & Regan, 2012). Ghana increased its corporate tax for mining companies from 25% to 35% (London Mining Network, 2012). The Republic of Congo also plans to increase stakes and taxes on mining operations in the country to increase revenue from mining (Kavanagh, 2012).

Zambia curtailed the provision of tax incentives and increased the mining royalty rates in 2007. Mongolia imposed windfall taxes on gold and copper mining revenues. Venezuela, Bolivia and Ecuador are reforming the rules of equity participation and taxation to reduce foreign oil company interest (Land, 2009).

The global trend in mining taxation reflects the interest of countries to increase their share from mining activities and maximize the benefit of high returns from mining. Countries are moving away from competitive fiscal regimes at least with respect to mining.

III. The Philippine Mining Context

A. Governance of the sector

In 2012, the Philippines applied to be a candidate country in the Extractive Industry Transparency Initiative. The multistakeholder's group, the governing board of the Philippine EITI (PH-EITI), published the first EITI report in December 2014. The group also committed to disclose information beyond the minimum requirements of EITI. For the 2014 report, PH-EITI disclosed the contracts of the mining and

oil and gas companies. While Semirara Coal Mining Company was included in the report, the Department of Energy failed to disclose its contract. The financial statements submitted by the companies to the Securities and Exchange Commission (SEC) were made available to the public. The memorandum of agreements (MOA) between the indigenous peoples groups and the mining companies were also disclosed. Unfortunately, the documents are not complete. The multistakeholder's group also committed to make the information on the auxiliary rights granted to companies available. This includes timber and water rights. Other information that will be made available are the quarterly mining monitoring reports which reflects the level of compliance of companies to environmental regulations, the environmental and social impact assessment reports of companies. Most of these information have never been made public. In the absence of a law on access to information, EITI is the only opportunity to access information regarding the extractive industry.

The Philippine EITI was created through Executive Order No. 147. However, the participation of extractive companies to EITI remains voluntary. Semirara Mining Company, which accounts for more than 90% of coal production in the country, did not participate in the first PH-EITI report, as well as some mining and oil and gas companies. Out of the fifty-two (52) targeted companies, only thirty-six (36) companies participated in the report.[4] The implementation of PH-EITI also depends on the budget of the current host agency, the Department of Finance, and the grants of foreign donors. EITI should be legislated so that participation of extractive companies operating in the country will be mandatory with corresponding penalties for non-compliance.

The impacts of mining on human rights and the environment are the most important and most controversial. The killings of indigenous peoples in Mindanao are said to be related to development aggression (Babiera, 2015). Mining operations are associated with human rights abuses. About 30 environmental activists had been killed or been victims of enforced disappearance and among them are anti-mining activists and leaders of indigenous peoples communities (Minority Rights Group International 2012; Whitmore 2011). It is also associated with displacement and increased militarization in communities. In the independent investigation of the Commission on Human Rights, the Commission concluded that Oceana Gold Philippines Inc. violated the rights of Didipio residents in Nueva Viscaya (Commission on Human Rights 2011).

Opposition to mining activities in the country will intensify if development aggression continues. This has an effect on mining investment in the country (Halcon, 2012). The implementation of the United Nations principles on business and human rights will greatly help in shedding light on these issues.

Conceptually, the government has a very inclusive system of monitoring the large scale extractive industry. Environmental monitoring committees are composed of representatives from the different stakeholders including the local government and the communities. Under the Implementing Rules and Regulations of the Philippine Mining Act (Republic Act No. 7942), the Mine Rehabilitation Fund Committee (MRFC) is in charge of managing, operating, and monitoring the safety the mine rehabilitation fund (MRF) and the final mine rehabilitation and/or decommissioning fund (FMRDF). These funds are required by law for the physical and social rehabilitation of areas and communities affected by mining activities and for research on the social, technical and preventive aspects of rehabilitation. The MRFC conducts preliminary evaluation of a large-scale mining contract/permit holder’s Environmental Protection and Enhancement Program (EPEP). The Committee is chaired by the Regional Director of the Department of Environment and Natural Resources (DENR) with the Regional Environmental Director as his co-chair. The other members of the committee are as follows: Regional

[4] Thirty from the mining sector and 6 from the oil and gas sector.

Director of the EMB; Representative of the Autonomous Regional Government, where this is applicable; Representative from the LGU; Representative from the local NGOs and community organizations, including People's Organizations, church or civic organizations; and a Representative of the Contractor/Permit Holder.

The Multipartite monitoring team (MMT) serves as the monitoring arm of the MRFC. It monitors every quarter, or more frequently as may be deemed necessary, the activities stipulated in the EPEP of the contract/permit holder. These reports are submitted to the MRFC at least five (5) working days before the latter's quarterly meeting and serves as part of the agenda. The MMT is chaired by a representative from the regional Office of DENR and the members include a representative from Department Regional Office; a representative from the Environmental Management Bureau (EMB) Regional Office; a representative of the Contractor/Permit Holder; a representative from the affected communities; a representative from the affected ICCs, if any; and a representative from an environmental NGO.

However, there is no systematic way on how the members of these committees are selected and appointed by the regional director of the DENR. There is no mechanism to make them accountable for their decisions. There are no capacity building mechanisms to ensure that the members of the MRFC and MMT members especially the community representatives have adequate capacity and skills to monitor environmental compliance of companies. In one instance, the MRFC and MMT in CARAGA allowed Shenzhou Mining Group Corp. to set up its siltation pond on the shore of Surigao del Norte. The company argued that the MRFC approved the structure. The company was eventually suspended by the MGB but was still allowed to ship the stockpile of ore because it is an "environmental hazard" (Adorador, 2013).

The Philex mine spill in Benguet is considered the "biggest mining disaster" in the Philippines. The company claims that the disaster was "force majeur" or caused by forces of nature (Dinglasan, 2012). However, a study by Boquiren (2013) showed that given the profile of Benguet, the rainfall during the month of August when .the disaster happened was not extraordinary. He argued that the tailing spill was due to the continuous use of the tailings pond beyond its expected life. On this ground, the disaster was avoidable and not due to forces of nature. The lack of government capacity to regulate the sector is only highlighted by mining disasters or environmental damages which could have been avoided if the government is capable of regulating the sector.

B. Allocative capacity and ability to manage returns from extractive activities

There is no national law that prescribes how the returns from large scale mining activities should be utilized by the national government. Currently, payments from mining companies go to the national treasury as revenues to be included in the government budget. The Local Government Code (Code) of 1991 provides for share of local governments from extractive activities.

The sharing scheme of revenues is based on Sections 291 and 292 of the LGC. LGUs shall have a forty percent (40 per cent) share of the gross collection[5] of the National Government from the preceding

[5] Gross collection includes: (1) Mining taxes, royalties, forestry and fishery charges, and such other taxes, fees, or charges, including related surcharges, interests, or fines, and from its share in any co-production, joint venture or production sharing agreement in the utilization and development of the national wealth within their territorial jurisdiction; (2) Administrative charges enumerated herein accruing to the National Government whether collected by the National Government collecting agencies or, in certain cases, by LGUs; and (3) Proceeds from the development and utilization of national wealth where the LGU actually collects and automatically retains its share of at least forty percent (40 per cent) of such proceeds shall not form part of the revenue base in the computation of the forty percent (40 per cent) share.

fiscal year from the extraction of national wealth (1991b).[6] It also provides for the share of local governments from the proceeds in the operations of Government Owned and Controlled Corporations that engage in the utilization and development of the national wealth based on the following formula:

(a) One percent (1%) of the gross sales or receipts of the preceding calendar year; or

(b) Forty percent (40%) of the mining taxes, royalties, forestry and fishery charges and such other taxes, fees or charges, including related surcharges, interests, or fines the government agency or government owned or controlled corporation would have paid if it were not otherwise exempt

The sharing between LGUs are as follows:

(1) Province - Twenty percent (20 per cent);
(2) Component City/Municipality - Forty-five percent (45 per cent); and
(3) Barangay - Thirty-five percent (35 per cent)

If the natural resources are in a highly urbanized or independent component city,[7] the city will get sixty-five percent (65 per cent) share and the barangay thirty-five percent (35 per cent). If the natural resources are located in two (2) or more provinces or in two (2) or more component cities or municipalities or in two (2) or more barangays, the respective share of each LGU will be computed on the basis of population (70 per cent) and land area (30 per cent).

The Local governments are mandated by the Code to utilize the money from national wealth to fund development and livelihood projects. The mandate though is very broad with the Code stating that local councils can appropriate the money to finance local government and livelihood projects. This can be interpreted to mean that the local councils can appropriate the money to any activity the council decides to pursue. Furthermore, the funds transferred to local governments are not disaggregated. Local governments are not aware how much of the budget they are getting from national government is from the extraction of national wealth making it more difficult for the public to track how the proceeds from the national wealth was spent.

The Code also specifies that 80% of the share from energy projects should be used by the local governments to lower the cost of electricity in the area where the project is located. In the municipality of Caluya which hosts the Semirara Coal Mining Company, households are given a monthly subsidy of two hundred pesos (P200.00). While this can augment the household electricity budget in the short run, this mechanism will not have a long term impact on lowering the cost of energy in the area.

The closest that the Philippines has to a natural resource trust fund is the Malampaya funds which was created by President Ferdinand Marcos under Presidential Decree No. 910. The law provides for the creation of a Special Fund from all fees, revenues and receipts including fines, penalties, royalties, rentals and production share. The fund shall be used to finance energy resource development and exploitation programs and projects of the government and for other purposes as directed by the President ("Creating an Energy Development Board, Defining its Powers and Functions, Providing Funds, Therefor, and for other Purposes," 1976). Between 2002 and 2013, the Malampaya project generated an income of Php 179.338 billion for the government. The Commission on Audit reported misuse of the fund (Cabacungan & Remo, 2013). About Php 900 million of the proceeds from Malampaya were released to NGOs that

[6] Article 386 (b) of the IRR of LGC. The term national wealth shall mean all natural resources situated within the Philippine territorial jurisdiction including lands of public domain, waters, minerals, coal, petroleum, mineral oils, potential energy forces, gas and oil deposits, forest products, wildlife, flora and fauna, fishery and aquatic resources, and all quarry products

[7] An independent component city is administratively and legally independent of the province. It collects its own revenue and does not share from the collection of the province.

were supposed to deliver goods and services in behalf of the government. It turned out that these NGOs were fake (Rufo, 2013).

In 2013, the Supreme Court, in *Belgica v. Ochoa* held that Section 8 of PD NO. 910 that created the Malampaya Fund was unconstitutional because it delegated legislative power to the President without laying down a sufficient standard to determine the limits of the President‘s authority with respect to the purpose for which the Malampaya Funds may be used. The phrase, said the Court, gives the President wide latitude to use the Funds for any other purpose he may direct and, in effect, allows him to unilaterally appropriate public funds beyond the purview of the law. The decision limited the use of the Malampaya Funds for energy resource development and exploitation programs ("Belgica v. Ochoa," 2013).

The provisions of the Code and the creation of Malampaya funds show the appreciation that proceeds from natural resource utilization should contribute to development. However, at its current state, these policies are so general to guarantee the use of these funds for sustainable development. There is also limited appreciation that these funds are proceeds from the liquidation of non-renewable assets thus should be invested with guaranteed returns to the government and intergenerational benefits to society.

C. Linkages

Similar to other countries, mining in the Philippines is an enclave economy. All the mineral ores extracted are exported and processed in another country. The extraction sector has very limited linkages to local economy. One good example is copper mining. Icamina (2012) presented the current value chain of the copper industry of the country. All the copper extracted from the local mine sites are exported as copper concentrates. The Philippines has only one copper smelter. The only copper smelter in the country imports 100% of its copper concentrates from Papua New Guinea, Peru, Indonesia, Australia, Canada and Chile. About 95-100% of the cathodes produced from copper smelting in the country are exported. The country then imports at least 90% copper cathodes and 95-100% of copper rods to produce casting rods, wires and cables locally. It also imports 100% of copper raw materials to produce auto wire harnesses and foils locally. All the outputs are exported. A Philippine Industry Roadmap for Copper was being developed by the Department of Trade and Industry but the plan is on its early stages. The purpose is to fully integrate the copper industry through "providing support for the development of a few large scale, efficient and sustainable copper mines, immediate actions covering the downstream industry, and the re-building of the copper wire rod segment of the downstream industry." The upstream integration of linking the local mines with smelting will require the development of major copper mines to meet the volume requirement of PASAR, the country’s smelting and refining corporation (Icamina, 2012).

D. Fair share in the extraction of resources

Based on the literature, mining taxation has three key objectives: (1) to secure appropriate share in the mineral rent as owner of minerals on top of regular taxes (2) to ensure that mineral extraction is socially optimal and equitable; and (3) to minimize the damage to the environment and manage the quick exploitation of minerals.

The following are the taxes and fees collected by the government from large scale mining companies (Bureau of Internal Revenue 2004; DENR 1996; DENR 2005; Republic of the Philippines 1991b).

National government taxes and fees:

(a) Contractor's income tax (30 per cent);
(b) Customs duties and fees on imported capital equipment;
(c) Value-added tax on imported goods and services (12 per cent of the value of good) ;
(d) Withholding tax on interest payments on foreign loan (10 per cent/20 per cent if payable to non-resident foreign corporations);
(e) Withholding tax on dividends to foreign stockholders (30 per cent);
(f) Documentary stamps taxes (varies depending on the document being taxed) ;
(g) Capital gains tax (varies depending on the asset being taxed);
(h) Excise tax (2 per cent of the market value of the gross output);
(i) Royalty from operations in mineral reservation areas (5 per cent of the market value of the gross output).

Local government taxes and fees:

(a) Local business tax (maximum 2 per cent of gross sales);
(b) Real property tax (maximum of 2 per cent of the assessed value of the real property);
(c) Community tax (maximum Php 10,000.00);
(d) Occupation fees (Php 75.00 per hectare outside mineral reservations/Php100.00 per hectare inside mineral reservations);[8]
(e) Registration and permit fees;

The taxes imposed by the Philippine government on the mineral sector are common taxes imposed in other industries as well. Based on the taxation principle of neutrality, all taxes paid by other sectors should apply to the mining sector. But in the Philippines, the State owns the mineral resources. An additional payment in the form of mining royalty should be collected. Unfortunately, in our current fiscal regime, the State does not get any payment for the extraction of mineral resources in areas outside mineral reservations. The government collects a royalty of 5 per cent of the market value of the gross output if the mining operation is within mineral reservation areas.[9]

The contractors under the Financial or Technical Assistance Agreement (FTAA) pay similar taxes. An additional government share is collected only if the basic government share is less than 50 per cent net mining revenue after the recovery period when the contractor has fully recovered its pre-operating, exploration and development expenditures (Department of Environment and Natural Resources, 2007).[10]

Outside mineral reservation areas and depending on net mining revenues for FTAAs, the State, as the owner of the natural resources, does not receive any compensation for the country's mineral resources. Clearly, the current fiscal regime fails one of the key objectives in taxing the mining sector.

One has to consider the overall context of mining in the Philippines to assess if taxation is socially optimal and equitable and if it encourages or discourages quick exploitation of minerals. Similar to other mineral-rich developing economies, the mineral sector is an enclave economy, all the mineral

[8] The province receives 30 percent of the occupation fees while the municipalities keep the remaining 70 percent. The use of this fee has not been specified by law. Currently, it just adds to the general fund of the local government units.
[9] Mineral Reservations are areas established by the President of the Philippines when the national interest so requires, such as when there is a need to preserve strategic raw materials for industries critical to national development or certain minerals for scientific, cultural or ecological value DENR (DENR 1996).
[10] Net mining revenue is computed as gross value of production minus allowed deductible expenses under DENR Administrative Oder No. 2007-12 which include Mining, milling, transport and handling expenses, smelting and refining costs other than smelting and refining costs paid to third parties, general and administrative expenses, environmental expenses, expenses for the development of host and neighboring communities and for the development of geosciences and mining technology, royalty payments to claim owners or surface land owners, continuing mine operating development expenses within the contract area after the pre-operating period, interest expenses charged on loans or such other financing-related expenses.

ores are exported and processed in other countries. The sector has very weak upstream and downstream linkages.

Contribution to the economy

Table 4 summarizes the country's gross national income and gross domestic product from 1998 to 2010. The service sector contributed 55.8%, manufacturing accounted for 22.2% and agriculture and fishing contributed 11.6%. The mining and quarrying sector's contribution was at 1.2% in 2010. The sector has the second lowest contribution to the total economy during the period (Virola, 2012).

Table 3: Gross National Income and Gross Domestic Product by Industrial Origin, 1998 to 2010

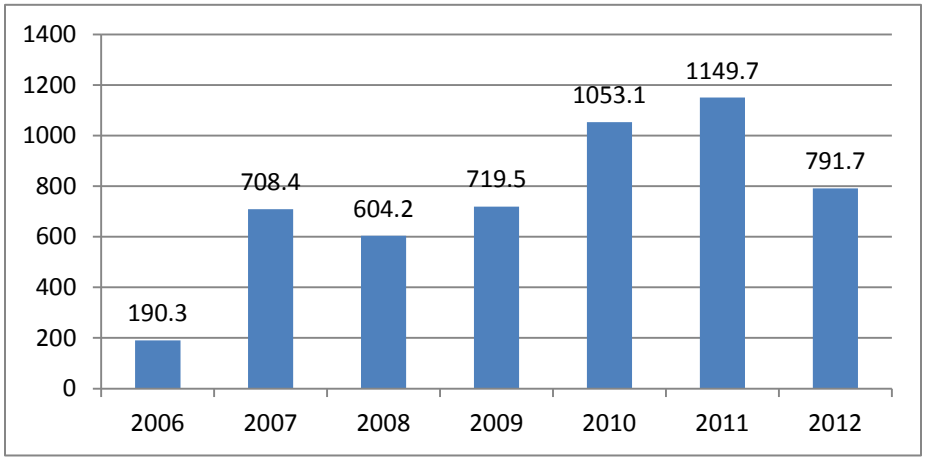
Percent Distribution

INDUSTRY	AVERAGE	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. AGRI, HUNTING, FISHING & FORESTRY	13.3	13.3	14.1	14.0	14.0	14.0	14.0	13.6	13.3	13.1	12.9	12.8	12.5	11.6
a. Agriculture and fishing	13.2	13.2	14.0	13.8	14.0	13.9	13.9	13.5	13.2	13.0	12.8	12.7	12.5	11.6
b. Forestry	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
2. INDUSTRY SECTOR	33.2	35.3	33.8	34.5	33.8	33.6	33.3	32.9	32.7	32.5	32.2	32.4	31.5	32.6
a. Mining & Quarrying	0.9	0.7	0.6	0.6	0.6	0.9	1.0	0.9	1.0	0.0	1.0	1.0	1.1	1.2
b. Manufacturing	23.5	24.5	24.2	24.5	24.4	24.3	24.0	23.7	23.7	23.5	22.8	22.8	21.5	22.2
c. Construction	5.1	6.5	5.4	5.7	5.1	4.8	4.7	4.6	4.4	4.6	5.0	5.1	5.4	5.7
d. Electricity, Gas and Water Supply	3.6	3.6	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.5	3.5	3.6	3.5	3.6
3. SERVICE SECTOR	53.5	51.4	52.1	51.6	52.1	52.4	52.7	53.5	54.0	54.4	54.9	54.8	56.0	55.8
a. Transport, Storage, and Communications.	7.3	5.8	5.9	6.1	6.6	7.0	7.5	7.9	8.1	8.0	8.1	8.1	8.0	7.5
b. Trade and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods	16.2	14.6	15.4	15.8	16.2	16.2	16.2	16.3	16.4	16.6	16.9	16.5	16.5	16.6
c. Financial Intermediation	5.7	5.3	5.4	5.2	5.3	5.4	5.4	5.4	5.7	6.1	6.3	6.2	6.4	6.6
d. R. Estate, Renting & Bus. Activity	9.6	9.9	9.8	9.3	9.0	8.9	8.9	9.2	9.4	9.5	9.6	10.0	10.3	10.3
e. Public Administration & Defense; Compulsory Social Security	4.9	5.6	5.4	5.2	5.1	5.0	4.9	4.9	4.7	4.7	4.4	4.3	4.5	4.5
f. Other Services	9.9	10.2	10.3	10.0	10.0	10.0	9.7	9.7	9.6	9.5	9.5	9.7	10.2	10.2
GROSS DOMESTIC PRODUCT		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: National Statistical Coordination Board cited by Virola (2012)

Since the revitalization of the mining industry under EO 270, total mining investment increased (See Figure 1). Investment declined in 2012 because of the moratorium in entering into new contracts with mining companies until the fiscal policy governing mining has been amended.

Figure 1: Total Mining Investment, in Billion USD

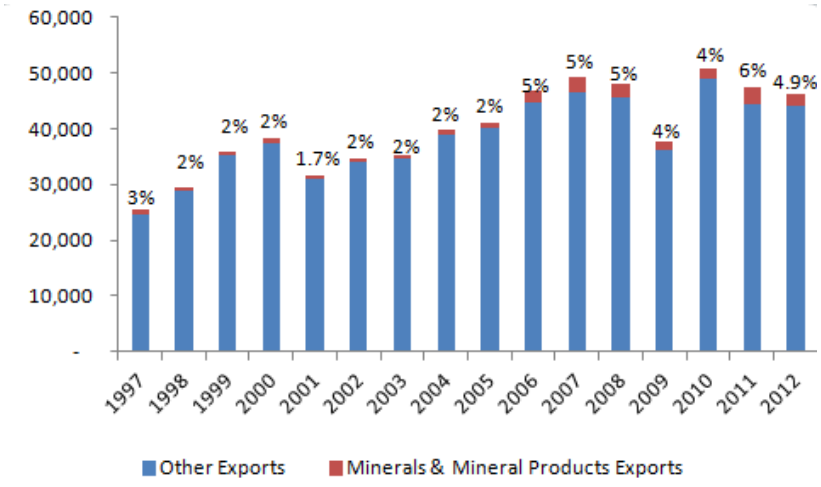


Source: MGB (Mines and Geosciences Bureau) (2013)

Mineral exports steadily remained at around 2% from 1997 to 2005. Only five to seven metallic mines were operating in 2003 (Soriano & Makayan, 2012). The data from the MGB showed mineral export accounted for 4.9% of total export in 2012. This is equivalent to 2.2 billion USD.

Figure 2: Total Exports of Minerals & Mineral Products as a percentage of Total Export

in USD million

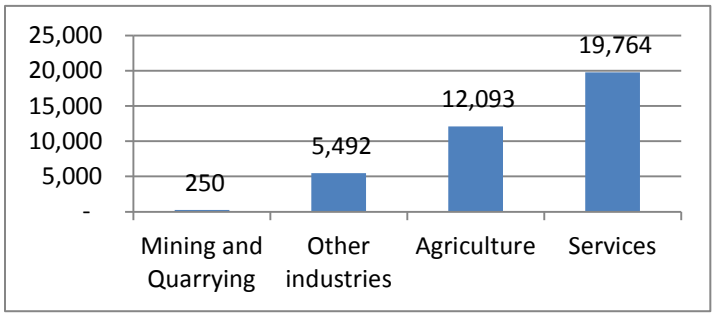


Source: MGB (Mines and Geosciences Bureau) (2013)

In terms of employment, Mining and quarrying contribution to total employment is around 0.7%. Figure 3 shows the average number of persons employed in the major industry groups. On average, the mining and quarrying industry employs 250,000 individuals. This is relatively low compared to agriculture, the service sector or other industries.

Figure 3: Average Number of Employed Persons by Major Industry Group, Philippines, 2012

in thousands



Source: NSO (National Statistics Office) (2013)

The data from the Philippine EITI reporting template of companies show the number of local employment of some large scale mining companies.

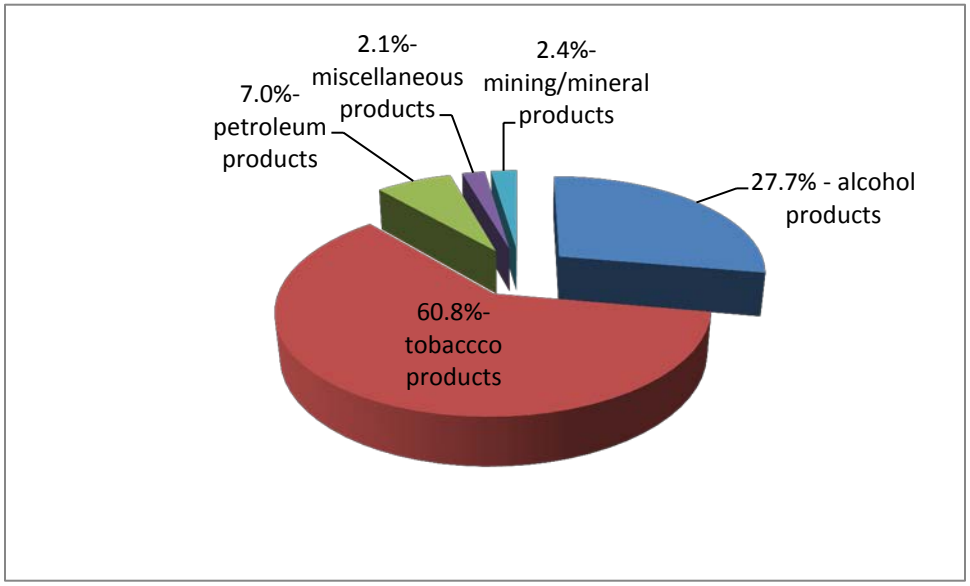
Table 4: Local Employment in Large Scale Metallic Mines

Company Name	Local Employment Total
Carmen Copper Corp.	3,849
Carrascal Nickel Corp.	125
Eramen Minerals Inc.	219
Leyte Iron Mining Corp.	62
Marcventures Mining & Devt Corp.	611
Philsaga Mining Corp.	1,994
Shuley Mining Inc.	26
SR Metals Inc.	141
Berong Nickel Corp.	273

Source: PH-EITI reporting template (2014)

The excise tax payment of mining companies is compared with the other industries that pay excise tax. Excise taxes are also imposed on tobacco, petroleum, alcohol products, automobiles and non-essential goods like jewelries, colognes and cosmetics. For 2014, the total excise tax collection of the government (135,315.08 million pesos) is about 10% of total tax collection. Of the total excise tax collection, the total excise tax collected from the mining industry is equivalent to 3,203.05 million pesos according to the Bureau of Internal Revenue. This is only 2.4% of total excise tax collection. This is relatively low compared to excise tax collections from alcohol, tobacco and petroleum products (See Figure 4).

Figure 4: Contribution of Mining and other industries to excise tax collection (%), 2014

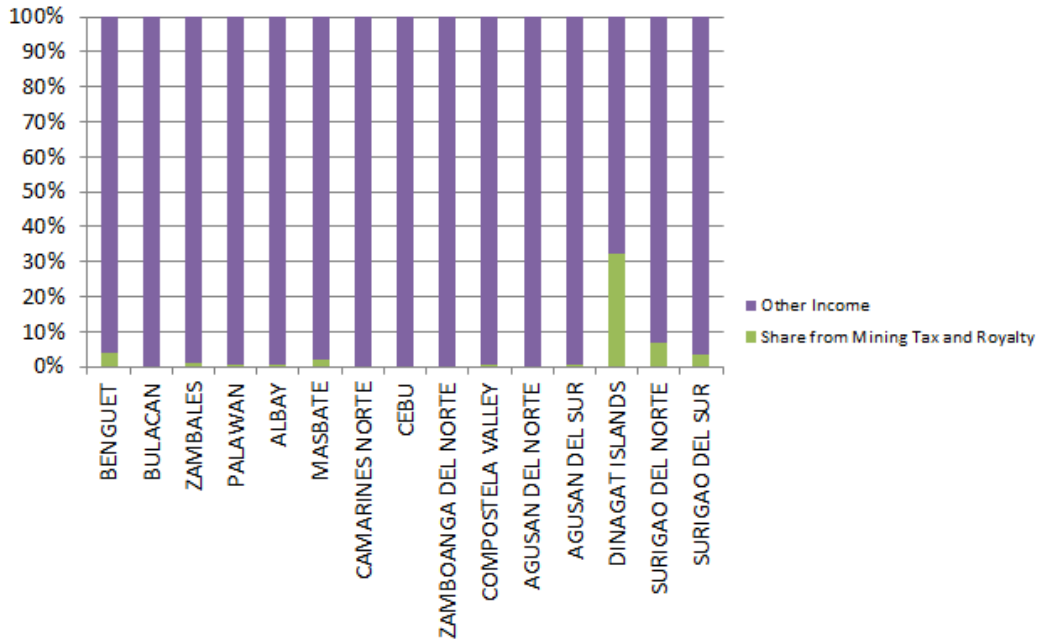


Source: (Bureau of Internal Revenue, 2014)

Clearly, the current large scale mining operations in the country does not significantly contribute to the national economy. At the local level, the impact of mining on the local government budget is also not significant except for some provinces and municipalities.

According to a mining report by the IMF, about 9 per cent of the locally sourced income of LGUs are taxes and fees paid by the mining industry (Sunley, Caner, Krever, & Luca, 2012). Figure 5 summarizes the share from the 2% excise tax and the 5% royalty share in mineral reservation of provinces. The mining share as a percentage of the total operating income of provinces is less than 1% for most provinces. The highest percentage is Dinagat Island, the share of which is almost 34% of its total operating income. For most mining provinces, the share from national wealth as a percentage of their operating income is less than 5 percent. This is not even sufficient to completely fund provincial spending on education and health which normally accounts for 16-18% of the province's annual budget.

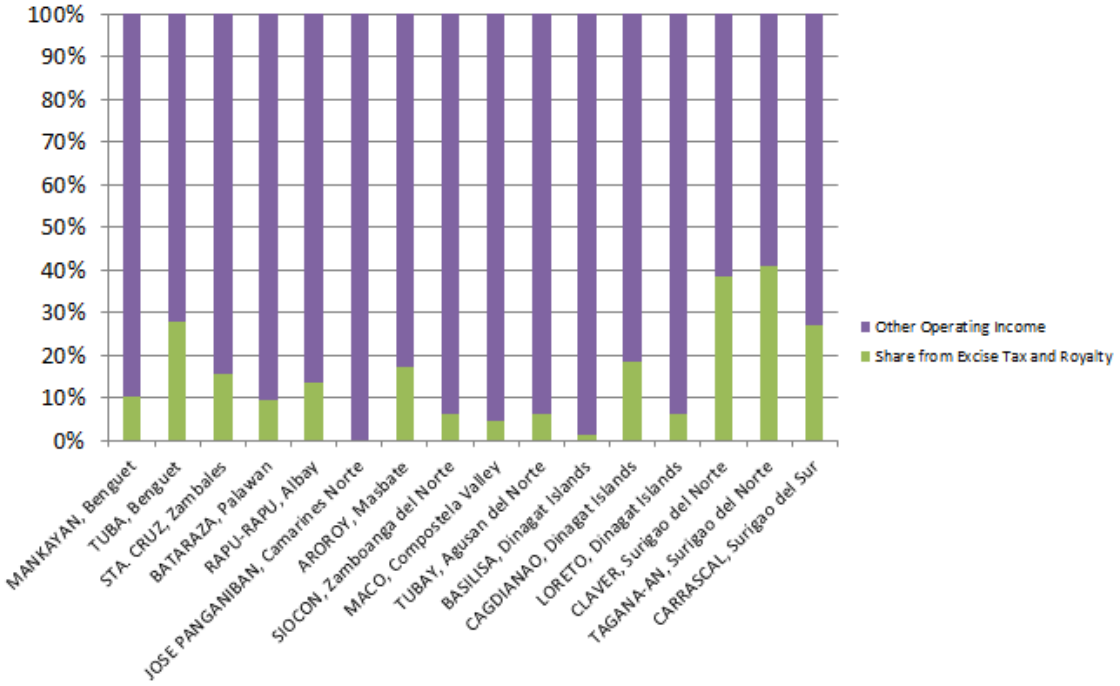
Figure 5. Share from National Wealth as Percentage of the Operating Income of Mining Provinces, 2012



Source: (BLGF, undated; Philippine EITI, 2014)

Figure 6 shows the share in national wealth of some mining municipalities as percentage of total income of the municipality in 2012. The impact of mining share on municipal revenue is larger compared to provinces. The percentage ranges from less than 1% to as much as 41% for some municipalities in Surigao del Norte.

Figure 6. Share from National Wealth as Percentage of the Operating Income of Select Mining Municipalities, 2012



Source: (BLGF, undated; Philippine EITI, 2014)

Given the limited contribution of mining to national and local economy, its enclave nature, the weak governance of the extractive sector and limited capacity in terms of managing the proceeds of the resources, taxation of the mining sector is the only significant benefit of the country from the extraction of its non-renewable resources. The socially optimal and equitable taxation system of mining sector in the country is the one that allows for fair share in the proceeds of extraction, discourages quick utilization of minerals to allow the government to improve its regulatory capacity, set up systems to ensure protection of rights of communities, establish transparency and accountability mechanisms to reduce corruption and manage the proceeds from extractives to ensure sustainable impacts and inter-generational benefits of extraction. The succeeding discussions will focus on assessing the current tax regime on this basis.

Comparison of Philippine fiscal regime in mining with other neighboring countries

Table 5 compares the key taxes on large scale mines and the incentives granted to them in the Philippines, Papua New Guinea, Indonesia and Vietnam. Indonesia's royalty varies with the type of minerals. Vietnam's corporate income tax varies depending on the industry. The government imposes higher corporate income tax rate on the extractive sector. Recent reforms in Indonesia also show that its fiscal policy governing mining is linked to bigger agenda of maximizing the benefit of extracting non-renewable resources by encouraging the development of downstream industries in the country. This is being done through the imposition of an export tax on raw ore and the requirement for foreign investors to divest if they are unable to set up downstream processing of minerals. Vietnam also collects 10% export tax on gold (Chury, 2012). Indonesia's tax on gold is a 3.75% share on quantity produced instead of the value of production as what is done for nickel and copper. Both the Philippines and Indonesia collect additional royalties from companies operating in mineral reservation areas. For the Philippines, the rate is 5% of the value of production while for Indonesia, it is 10% of profit.

Table 5. Comparison of Taxes and Incentives of Philippines, PNG, Indonesia and Vietnam

Taxes and Incentives		Philippines	Papua New Guinea	Indonesia	Vietnam
Corporate Income Tax		30%	37% [d] 40% [e] 2% [f]	25%	32-50%[n]
Mineral Taxes	Gold	2% [a]	2% [a]	3.75% [h]	15% [o]
	Nickel			4-5% [i]	10%
	Copper			4% [j]	10%
	Additional tax in mineral reservation areas	5% [b]		10% [k]	
	Tax to indigenous communities	1% [c]			
Export tax		-		20%	10%
Withholding tax on dividends		15%	15%	20%	-
Withholding tax on royalties		30%	10-15% [g]	20%	-
Withholding tax on interests		20%	10-15% [g]	20%	-
Fiscal Incentives/ Limitations					
Ring fencing		No	Yes	No	No
Income tax holiday		Yes[l]	Yes	Yes	Yes
Accelerated depreciation		Yes	Yes	Yes	Yes
Deduction of exploration expense		Yes	Yes	Yes	Yes
Carried forward tax losses		Yes	Yes	Yes	Yes
Thin capitalization limit[m]		No	No	No	No

a. 2 percent excise tax based on the market value of gross output applicable to all types of metallic minerals
b. 5% royalty based on the market value of gross output. Applies to mineral reservation areas
c. minimum 1% royalty based on the market value of gross output to be paid to indigenous communities in ancestral domain areas.
d. income tax for resident companies
e. income tax for non-resident companies
f. a 2 percentage point premium is added to the income tax rate if the company applies for fiscal stability which locks in the government and the company to the existing fiscal arrangements.
g. the rate depends on whether the company is resident, non-resident or has an existing treaty with PNG.
h. 3.75% of quantity of production for gold.
i. 4-5% of sales price of nickel
j. 4% of sales price applies for copper.
k. Additional royalty of 10% based on profit for IUPK/Special Mining Business License or license open to both foreign and nationals in specific WPN area (State reserve areas)
l. Only until 2012.
m. Thin capitalization limit is the limitation on interest cost based on a pre-determined maximum debt to equity ratio
n. Standard corporate income tax is 22%, to be reduced to 20% by 2016. Higher corporate income tax rate is imposed on oil and gas and mineral sector.
o. Natural resources tax is determined by the actual natural resources exploited, the unit price and the tax rate stipulated for the specific resources

Source: (Emerson & Kraal, 2014; KPMG International, 2015; PKF (UK) LLP, 2012; PricewaterhouseCoopers, 2010, 2014, 2015)

The natural resource tax rates in Vietnam are already higher than the Philippines, Indonesia and Papua New Guinea but there is still a pending proposal from the Minister of Finance to increase the rates further by 2-6 percentage points (Vietnam Briefing, 2015).

Total tax payments

One way of assessing the impact of fiscal systems is to calculate the total effective tax rate. This is a measure of the burden of all tax collected by the government from the mining operation. Many

developing nations impose an effective tax rate of between 40 to 60 percent (Land, 2009; J. M. Otto, 2000).

The total tax take of the Philippine government from mining is among the lowest in the world. A 2004 comparative study of selected mining countries showed the Philippines to be in the second lowest quartile in terms of total effective tax rate at 45.3% (J. Otto et al., 2006). Since the study was conducted, many countries have increased their tax rate on mining while the Philippines tax policy for the mining industry remains the same. Another estimate shows government take at 42% (Bauer, 2012). An estimate of average effective tax rates of an industry-commissioned study by Clarete and Adriano ranges from around 28 to 120 percent (Clarete & Adriano, 2014).

Table 6 shows a rough estimation of the effective tax rate (ETR) of the Philippines given the 2% excise tax, 2% local business tax, 30% corporate income tax and the 5% royalty in mineral reservation areas. The model assumes 60% cost of operation.

Table 6: Estimation of the ETR in the Philippine Large-scale Metallic Mining Sector

	ETR	ETR in mineral reservations
Revenue from Sales	100	100
LESS: Ad Valorem Tax (Excise, Business)	4	9
Revenue to Investor (if sold domestically)	96	91
LESS: Operating Costs	60	60
Profit (Mining Net Revenue)	36	31
LESS: Corporate Income Tax	10.8	9.3
Net Profit after CIT	25.2	21.7
ROR on Capital Expenditure	42%	36%
Gross Government Share of Profit	14.8	18.3
LGU share (including business tax)	2.4	4.4
National Government share	12.8	16.3
Effective Tax Rate	37%	46%

The model shows an effective tax rate of 46% in mineral reservation areas, where a five percent royalty is collected. The effective tax rate in other mining areas is 37%. This is consistent with our estimation and the other estimates on the effective tax rate in the Philippines. Globally, the Philippines' effective tax rate is at the lower range of the spectrum. This is confirmed by the testament of Oceana Gold an Australian mining company and FTAA holder for a gold mining project in Nueva Viscaya. The company claimed that the project is "the lowest-cost gold mine on earth"(Ker, 2013).

The model is validated using the information from the 2014 Philippine EITI report, and the financial statements of companies submitted to the Securities and Exchange Commission (SEC). Table 7 shows an effective tax rate ranging from 10% to 30% for companies that applied for an income tax holiday, while effective tax rate for other companies ranges from 33% to 46%. The companies included in the table are operating for at least three years.

Table 7: Total ETR of Select Companies Using EITI Data

Company Name	Contract Approval	Net Income	TOTAL payment-EITI	ETR
Carmen Copper Corp.*	4/28/2005	3,320,335,147.00	556,974,000.00	14%
Carrascal Nickel Corp.*	7/17/2007	1,594,085,042.00	466,128,000.00	23%
Marcventures Mining & Devt Corp.*	7/1/1993	172,364,167.00	26,906,000.00	14%
Platinum Group Metals Corp.	7/30/2007	1,822,893,261.00	466,315,000.00	20%
SR Metals Inc.*	12/23/2009	197,812,312.18	80,099,000.00	29%
Adnama Mining Resources*	7/12/2007	1,281,162,608.00	147,663,000.00	10%
Berong Nickel Corp.*	6/8/2007	196,296,291.00	83,100,000.00	30%
Cambayas Mining Corp.	10/23/2009	12,979,973.00	6,381,000.00	33%
Eramen Minerals Inc.	4/19/2005	69,398,911.00	59,894,000.00	46%
Rio Tuba Mining Corp.	4/28/2005	1,477,055,891.00	737,647,000.00	33%
Taganito Mining Corp.	7/28/2008	1,064,805,951.00	712,263,000.00	40%
Greenstone Resources Corp.	4/21/2009	62,746,523.00	33,122,000.00	35%

*Applied income tax holiday
Source: (Philippine EITI, 2014), Securities and Exchange Commission

According to the Philippine EITI report, the mining industry contributed around Php 6 billion in total payment to the government. The following table shows the breakdown of the reported Php 6 billion total payment of the mining companies in 2012:

Table 8: Breakdown of Payments of Mining Companies in 2012

Collecting Agent	Revenue flows	Payment (in Php)	% of total payment
Bureau of Internal Revenues	Corporate Income Tax	1,973,169,747	32%
	Excise Tax	1,481,636,266	24%
	Withholding tax - Foreign shareholder dividends	268,662,720	4%
	Withholding tax - Royalties to claim owners and IPs	130,719,515	2%
	Subtotal	3,854,188,248	62%
Bureau of Customs	Customs duties	139,305,034	2%
	VAT on imported materials and equipment	582,617,618	9%
	Excise tax on imported goods	112,996	0%
	Subtotal	722,035,648	12%
Local Government Units	Community tax	247,003	0%
	Environmental fees	3,020,050	0%
	Extraction fees	2,182,566	0%
	Local business tax	198,263,617	3%
	Local wharfage fees	13,586,126	0%
	Mayor's permit	3,096,724	0%
	Mine wastes & tailing fees	46,870	0%
	Occupation fees	7,300,526	0%
	Real property tax – Basic	73,318,399	1%
	Real property tax – SEF	34,337,241	1%
	Registration fee	488,568	0%
	Regulatory/Administrative fees	73,725	0%
	Rental fees on mineral lands	75,712	0%
	Other LGU payments	34,253,141	1%
	Subtotal	370,290,268	6%
Indigenous Peoples	Royalty for IPs	258,603,651	4%
Mines and Geosciences Bureau	Royalty in mineral reservation	961,443,657	15%
	Others (e.g. penalties, fines, etc.)	3,144,490	0%
	Subtotal	964,588,147	15%
Philippine Ports Authority	Philippine Ports Authority	68,721,000	1%
TOTAL		6,238,426,962	100%

Source: (Philippine EITI, 2014)

Table 8 shows the detailed payments of companies. Local governments directly collect 6 percent of the total payments of companies. Indigenous peoples collect 4 percent of the total payment as their share in royalty. The bulk of the payments of the companies are collected by the Bureau of Internal Revenue and the Mines and Geosciences Bureau. In looking at revenue flows from the industry, the computation should exclude withholding taxes since this are not payments of companies. They only acted as withholding agents of the government. Penalties and fines for violating environmental regulations amounting to Php 3 million should also be excluded. These are not regular income flows. About 32 percent of the total payment made by mining companies was in the form of corporate income taxes. Excise taxes on minerals constitute 24 percent. Another 15 percent was from royalty on mineral reservations and 9 percent was from VAT on imported materials and equipment.

Using the actual 2012 EITI data and information from the Securities and Exchange Commission, the total tax take of the government in 2012 is only 18% of the industry's net income before tax. While the evaluation of the tax burden to companies should consider the whole life of the mine as operating cost changes depending on the stage of operation and total revenue moves according to the global prices of minerals, the 2012 PH-EITI data provides a snapshot of companies' payment and the government take as a percentage of the industry's net income.

Table 9. Government take as a percentage of industry's net income, 2012

	In Php
Total Revenue (estimated based on the excise tax payment which is 2% of gross value of production)	74,081,813,300.00
Operating Expense (total operating expense of companies that participated in PH-EITI based on the financial statements they submitted to the Securities and Exchange Commission)	38,545,372,181.41
Net Income (Total Revenue – Operating Expense)	35,536,441,118.59
Total Payment of the Mining Companies to Government	6,238,426,962.00
Government Take as % of Net Income	18%

The government could have collected Php 8 billion pesos from the mining companies in 2012. However, several companies applied for income tax holidays before the Bureau of Investment resulting in losses of at least Php 2 billion pesos.

Table 10. Estimated losses due to Income Tax Holidays in 2012

Company	Revenues	Total Expense (excluding income tax expense)	Income Before Income Tax	Actual Income Tax payment	30% income tax due	loss due to ITH
Carmen Copper Corp.	14,341,352,040.00	9,455,163,056.00	3,350,880,788.00	30,545,641.00	1,005,264,236.40	974,718,595.40
Carrascal Nickel Corp.	4,481,605,204.00	2,854,970,880.00	1,588,865,658.00	(5,219,384.00)	476,659,697.40	481,879,081.40
Marcventures Mining & Devt Corp.	697,491,039.00	526,157,277.00	171,505,039.00	(859,128.00)	51,451,511.70	52,310,639.70
SR Metals Inc.	1,991,829,186.97	1,745,027,976.05	211,642,728.51	13,830,416.33	63,492,818.55	49,662,402.22
TVI Resource Development Inc	3,955,065,992.00	3,496,217,380.00	(266,195,355.00)	1,498,507.00	1,498,507.00	
Adnama Mining Resources	3,160,680,716.00	1,877,325,423.00	1,281,441,900.00	279,291.00	384,432,570.00	384,153,279.00
Berong Nickel Corp.	1,189,715,630.00	969,845,239.00	221,445,019.00	25,148,728.00	66,433,505.70	41,284,777.70
APEX Mining Company Inc.	1,817,321,564.00	1,794,524,062.00	41,385,581.00	(15,432,581.00)	12,415,674.30	27,848,255.30
TOTAL						2,011,857,030.72

Source: (Philippine EITI, 2014), Securities and Exchange Commission

Clearly, the effective tax rate of the country is definitely competitive, being in the lower end of the spectrum of the total tax takes of governments. With low tax rates, the government captures very little revenue from mining. The current fiscal regime also encourages the quick utilization of the mineral resources. This is reflected by the thousands of mineral applications pending before the Mines and Geosciences Bureau.

Given the Philippines' weak regulatory capacity, voluntary transparency and accountability mechanisms, limited opportunities to address issues of human rights violations, and limited policies on the management of proceeds from natural resource extraction, and limited economic linkages, the

government should impose higher tax rates on mining companies. This will discourage the quick utilization of mineral resources and will provide time for the government to fix the governance of the sector and improve its capacity to allocate and manage the proceeds from mining. Higher taxes will also ensure that the Philippine government gets enough returns from the extraction of these non-renewable resources to finance development. Obviously, the current fiscal regime is not socially optimal and equitable for the country.

IV. Analysis and Policy Recommendation

The extraction of non-renewable resources must ensure that it contributes to the sustainable development of the country. One view is that the government's main goal is to attract investment in the mineral sector. Because of the risky nature of the business, capitalization is limited and countries have to compete to attract these investments. Therefore, tax rates should be comparable to other countries and incentives should be given to investors. This paradigm suggests that mining companies committed to contribute to sustainable development can have significant impact in the local economy. Aside from increasing cash flow to the country, the mining operations in remote areas can trigger economic activities. The employment that the operations will create can increase the demand for consumer goods and encourage the establishment of micro and medium enterprises. The samples frequently cited are the experiences of Canada and other developed countries engaging in mining.

However, the UNCTAD, IMF and other international non-government organizations suggest that the mining model in developed countries cannot be applied to developing countries. Mining is capital intensive and does not create a lot of employment. If there is employment, the local communities are not capable of providing because the level of human resource capability of the country does not match the demand of the operation. In most cases, all of the ore extracted in the country are process and utilized elsewhere unlike in developed countries where a portion of the extracted minerals are utilized locally. Downstream industry is not present in poor developing countries. Companies may engage in social development in their host communities. However, the main objective of these activities is to improve the social acceptability of companies rather than to ensure equitable social and economic development. Therefore, the main source of economic benefit a developing country can get from mining is the revenue from taxation.

The mining context in the Philippines is similar to the experience of mineral-rich developing countries. The host economies of mining activities are among the poorest in the country. The GDP contribution of the industry remains low at less than 1%. There is no significant employment creation and downstream industry.

The social and economic activities mining companies conduct in their host communities is not sufficient to bring sustainable development to the communities or to the country in general. Mining is not an employment generator. It is a highly mechanized industry. It is also unlikely that companies will ensure equitable distribution and access to resources and social services. Mining companies do their social development programs to increase their political acceptability, not promote development and social justice. Thus, government has an important role in ensuring that Filipinos benefit equitably from the proceeds of mining.

Mining is also an enclave economy. The minerals that are extracted are exported for the use of other countries. There are very limited downstream processing stages in the country. Given that nature, large scale mining industry provides limited opportunities for employment creation and local linkages. Mining for development should develop the downstream industry. A number of countries are already implementing policies towards this direction. Indonesia, for example, implemented a ban on the export of

raw ore and is now requiring companies to set up downstream processing. In the short run, while the Philippines is not doing any downstream processing, income from taxation is the only major benefit the government can get from mining.

The fiscal policy of the Philippines is competitive with other countries. In fact, the total effective tax rate of the country which is around 40-46% is at the lower limit of the range of the effective tax rates in other countries which is 40-60%. Global experience suggests that the race to the bottom approach in making countries compete for investment in mining is not effective in ensuring countries get the fair share in the exploitation of their non-renewable resources. The tax regime of the country should instead reflect the actual cost of extracting these minerals. The country is known to be among the richest in terms mineral resource and biodiversity as well. The extraction of mineral resources poses cultural, social and environmental damages to the country. The current tax regime is not socially optimal and equitable. It does not reflect the actual costs of extraction to the country. Furthermore, while the State owns the mineral resources of the country, the government does not collect a separate payment for the extraction of these non-renewable resources.

The Philippines can benefit from a hybrid model that combines an ad valorem tax and a windfall tax that is imposed when the profits of an operation exceeds a certain threshold. These taxes should be imposed on top of the regular taxes imposed to industries by the government. The ad valorem tax has to reflect the cost of mining in the country. The imposition of an ad valorem tax will guarantee the government payment from the extraction of its mineral resources and a windfall tax can ensure that the country gets a share when profits are high. Both forms of tax require strong monitoring and regulation of the sector.

A country's tax rate should factor in the decision to accelerate the extraction of minerals. If a state decides to do so, it should keep the tax rate to a low level to maximize the present value of the minerals. It can increase the tax rate and limit extraction in such a way that only the really profitable projects are pursued. This is important given that many of the mineral deposits are found in country’s small islands. The country is also one of the most vulnerable to climate change and richest in biodiversity.

To maximize the benefit of mining in the country, the mining fiscal policy of the country should be tied to a development plan similar to Indonesia. There is no downstream industry in the Philippines. The minerals are exported in raw form. The problem with this situation is that the country gets the payment for the main mineral that is exported but not for all the other minerals that come with the ore. In effect, the minerals that are extracted from the Philippines are undervalued. What the country has are two operating refinery refineries for nickel and one copper smelter which import all the copper it is processing. The development of downstream industry will contribute to increasing economic activities in the country and proper valuation of the minerals extracted. There is limited discussion on how the country is going to strengthen and expand backward and forward linkages of the industry.

Lastly, mining taxation should reflect the state of governance where mining is being done. On the governance side, EITI remains voluntary and some companies still refuse to participate and disclose information. Making EITI mandatory will greatly improve transparency and accountability of the sector. There is also very limited discussion on plans to utilize the proceeds from extractives. While the Local Government Code of 1991 mandate local governments to spend the share from extractives to livelihood and social services, there is currently no mechanism to monitor this and hold LGUs accountable. Proceeds from energy projects like coal mining should be used to reduce the cost of energy. If the Malampaya fund is any indication of our capacity and appreciation on how the proceeds from the extraction of these none renewable resources should be utilized, then there is still a lot of policy reforms to be done to ensure greater benefits from the proceeds of extractive industry.

The mining industry in the Philippines should be taxed high enough to promote slow utilization of minerals to give time for the Philippines to put in place policies and build capacities to improve the governance of the sector, its regulatory capacity, its capacity to manage the proceeds from mining and promote forward linkages and diversification are in place. This will ensure the extraction of minerals contribute to sustainable development. The current system does not allow for the maximization of benefits from mining.

V. Conclusion

The Philippines is one of the most mineral-rich countries in the world. While there are existing mining operations in the country, it has yet to realize its full potential in terms of extracting these resources. An important consideration in extracting these resources is the assurance that the extraction of minerals contributes to the sustainable development of the country.

Based on the experiences of mineral-rich developing countries and given the Philippine context, a policy on minerals extraction should ensure that there is strong governance of the public and extractive sectors. Transparency and accountability mechanisms are a must. The serious implementation of international agreements like the EITI and the UN General Principle on Business and Human Rights will contribute to improving governance. The government must be capable of regulating the industry and ensuring that the impact of mining to the environment and the communities are minimized. Lastly, the government should receive the fair compensation for the extraction of minerals through taxation. The tax should reflect the payment for the extraction of minerals and the actual cost of extraction of minerals in the country. The payment should also ensure that the country gets a share from windfall gains. Getting fair share from the extraction of minerals is not a guarantee of sustainable development for the country. The returns from extraction have to be properly utilized to ensure that it benefits the present and future generation. The government should consider adopting policies that will earmark the proceeds from natural resources to programs and projects that will contribute to sustainable development and to create natural resource funds that will help in managing the proceeds.

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