Governance of Extractive Industries in Southeast Asia

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Institute for Essential Services Reform
IESR

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FOREWORD

This report of the scoping studies focusing on several of the extractive industries in the South East Asia region emphasizes the importance of good governance in oil, gas and mineral sector as a means to avoid the so called "resource curse" where countries rich in natural resources experience a "curse" rather than reaping benefits from their abundant natural wealth. There is extensive literature on the causes and description of the resource curse and they are not delved on in this study. Rather, this study looks at the governance of one or two natural resource in a country, focusing on the important aspects of governance that determine whether or not the resource curse will affect the country in question. Therefore, transparency and accountability, quality of regulations, and economic efficiency and equity are being used to define the governance and applies in the assessment for each case study.

The South East Asia region is not only rich in natural resources but is also a very diverse region in terms of democratic governments, with the modern city state Singapore on one end of the spectrum, and emerging democracies such as the countries of Myanmar and Cambodia the other end. This research paper analyzes the governance of the extractive industries in Indonesia, Malaysia, the Philippines, Vietnam, Cambodia, Timor Leste, and Myanmar via a case study approach. In general, the sectors covered include both fossil fuels, namely coal, crude oil and natural gas, and the non-fuel minerals of copper and gold.

The analysis focuses on the political economic considerations and governance of a specific sector in the extractive industries of each country: Indonesia is studied through the governance of its coal and copper industries, Malaysia and the Philippines are approached through the governance of their natural gas and gold industries, Vietnam is only seen through the governance of its coal industry, Cambodia and Timor Leste are have only the governance of their crude oil studied, while Myanmar has both the governance of its crude oil and its copper extractive industries scrutinized. This limitation in scope is the main weakness of this scoping study, which says nothing about Indonesia's oil and natural gas and gold, for example, although it is obvious that oil and natural gas and gold are important natural resources in Indonesia, with specific governance issues relating not only to the regulations governing them and the flow of revenues caused by their exploitation, but also to the externalities affecting local communities and regional governments.

Although the scope of this study could be extended to cover all the important extractive industries in each country studied, this presentation does successfully portray the general conditions of extractive industry governance in each country, for often the majority of regulations governing different minerals or oil and gas in a country are in general the same. If there is a problem with the so called "regulatory capture" in the governance of coal in Indonesia, it is a safe guess to say that the same situation would be existent in the governance of gold, or natural gas, or oil, and so there is the catch: however safe a guess is, that is exactly what it is, a guess.

This report implicitly urges the researchers reading it to look into each country's extractive industry in a more comprehensive manner, so that the readers may get a complete picture of the governance of the extractive industries in South East Asia. As it is, with the division of description and discussion in this study based on the extractive industry's commodity rather than the country as a whole, clarity of description demands that much information is repeated, especially in the discussion of countries that have their governance of more than one extractive industry commodity analyzed, such as Malaysia (natural gas and gold), Indonesia (coal and copper), and Myanmar (oil and copper). So, for example, the discussion of natural gas in Malaysia by necessity will look at regulations and social-political conditions that also will impact the governance of gold there, and because the division of this report emphasizes the commodity rather than the country, the same regulations and social-political conditions that affect the natural gas governance in Malaysia will be mentioned again when discussing its governance of the gold industry. While this might be an inconvenience to the reader who sits down and reads this report from cover to cover at one sitting, it is useful to the reader who reads this report chapter by chapter.

This report is also very time-limited, in the sense that in a few years in to the future could change the situations described in individual countries drastically. The governance of the extractive industries in a country is a very dynamic situation. As this report shows, in several countries there are laws waiting to be passed by parliament that will affect the extractive industries, as also there are specific political situations such as 'resource nationalism' that might be subject to manipulation by politicians, which potentially might drastically affect the governance of the extractive industries in the country discussed. The manner in which the powers that be in each country see the Extractive Industries Transparency Initiative (EITI) will also determine what will happen to that country's governance of the extractive industries in the future. Some countries, such as Timor Leste, appear to be more enthusiastic than others in becoming EITI compliant, so it might be safe to expect that once that country manages to overcome its handicaps (mainly in its human resources capacities) it will swiftly become a benchmark country in terms of extractive industry governance.

The temporary nature of this report will necessitate an update in the near future to accommodate any changes that occur in this dynamic field of extractive industry governance in South East Asia. A future study to continue and update this one might consider looking in to each country in more detail rather than into one or two particular commodities. This would make the future report more compact without the necessary repetition of information that occurs when the report is commodity based like it is in this present one.

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Executive Director

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LIST OF ACRONYMS

ACC	Anti-Corruption Commission
ASEAN	Association of Southeast Asian Nations
Bcm	billion cubic meters
BPK	Badan Pemeriksa Keuangan/ Supreme Audit Agency
CCOW	Coal Contract of Work
CIT	Corporate Income Tax
CNPA	Cambodian National Petroleum Authority
CoA	Commission on Audit
CoBE	Code of Conduct and Business Ethics
CoW	Contract of Work
DENR	Department of Energy and Natural Resources
DICA	Directorate of Investment and Company Administration
DILG	Department of Interior and Local Government
DMO	Domestic Market Obligation
DOE	Department of Energy
DPO	Domestic Processing Obligation
E&P	Exploration and Production
ECC	Environmental Compliant and Certification
EI	Extractive Industry

EIA	Environmental Impact Assessment
EIS	Environmental Impact Study
EITI	Extractive Industry Transparency Initiative
EMB	Environmental Management Bureau
EO	Executive Order
EPD	Energy Planning Department
ESI	Estimated Sustainable Income
FDI	Foreign Direct Investment
FIA	Foreign Investment Act
FoB	Fee on Board
FPIA	The Filipino Participation Incentive Allowance
FPIC	Free and Prior Informed Consent
FSRU	Floating regasification Unit
FTAA	Financial Technical Assistance Agreement
GDP	Gross Domestic Product
GOI	Government of Indonesia
GR	Government Regulation
GSEL	Geophysical Survey and Exploration Contract
HDI	Human Development Index
IEA	International Energy Agency
IESR	Institute for Essential Services Reform

IMA	Indonesia Mining Association
IMF	International Monetary Fund
IPRA	The Indigenous People Right Act
IUP	Ijin Usaha Pertambangan/Mining Business Permit
IUPK	Ijin Usaha Pertambangan Khusus/Special Business Permit
JDA	Joint Development Area
KP	Kuasa Pertambangan/Mining License
LGU	Local Government Unit
LNC	Liquefied Natural Gas
MACC	Malaysian Anti-Corruption Commission
MDTCA	Ministry of Domestic Trade and Customer Affairs
MGB	Mining and Geoscience Bureau
MICCL	Myanmar Invanhoe Cooper Company Limited
MITI	Ministry of International Trade and Industry
MJTA	Malaysia-Thailand Joint Authority
ML	Mining Law
MoE	Ministry of Energy
MoE	Ministry of Energy
MOGE	Myanmar Oil Gas Enterprise
MONRE	Ministry of Natural Resources And Environment

MPE	Myanmar Petrochemical Enterprise
MPI	Masyarakat Pertambangan Indonesia/ Indonesia Mining Association
MPPE	Myanmar Petroleum Product Enterprise
MPS	Ministry of Public Security
NCIP	National Commission on Indigenous People
NDPR	National Directorate of Petroleum Revenue
NEA	National Electrification Administration
NGO	Non-Governmental Organization
NPA	National Petroleum Authority
NPC	National Power Corporation
NSCB	National Statistical Coordination Board
NRE	Natural Resources and Environment
OECD	Organization of Economic Corporation and Development
PCR	Public Contracting Round
PECR	Philippines Energy Contracting Round
PETRONAS	Petroliam National Berhad/Malaysia's National Oil Company
PM	Prime Minister
PNOC-EC	The Philippines National Oil Company Exploration Corporation
PPI	Policy Potential Index
Prolegnas	Program Legislasi National/National Legislation Program

PSC	Production Sharing Contract
RIA	Regulatory Impact Analysis
RM	Ringgit Malaysia
Tcf	trillion cubic feet
TI	Transparency International
UNDP	United Nation Development Program
USGS	United States Geological Survey

EXECUTIVE SUMMARY

Extractive industry resources, such as fossil fuels (crude oil, natural gas or coal) and other non-fuel minerals (like copper and gold), are abundant in many developing countries including those in South-east Asia. The revenues from the export of these resources can account for a large share of the gross domestic product (GDP) of many developing countries, which can play a pivotal role in catalyzing and sustaining economic development. However, extractive industries are often characterized by the existence of high economic rents that can become a motivating source of corruption and misappropriation of public resources. Over-reliance on resource revenues can engender weak institutions that undermine sustainable and inclusive development and create an economy that is relatively more susceptible to severe distortions in the economy and poor economic growth. Persuasive empirical evidence suggests the existence of the so-called "resource curse", with mineral-rich countries generally performing worse than other countries in economic terms.

The governance of extractive industries is therefore critical in determining whether natural resources will benefit or harm the country. This research paper comprehensively analyzes the governance of extractive industries in the Southeast Asian region covering Indonesia, Malaysia, the Philippines, Vietnam, Cambodia, Timor Leste, and Myanmar via a case study approach. The sectors covered include both fossil fuels, namely coal, crude oil and natural gas, and the non-fuel minerals copper and gold. The analysis focuses on the political economy considerations and governance of the extractive industries in Southeast Asia. While there is considerable heterogeneity in how different extractive industries are governed in different countries – and this is reflected in the findings – there is in general significant room for improvement in transparency and accountability, regulatory design and implementation, and finally in the economic efficiency with which resource extraction is carried out.

Indonesia

This study looks into the governance of coal and copper in Indonesia. Indonesia is the largest exporter of thermal coal in the world (mostly of the low calorific value variety), consuming a small fraction of its coal output domestically. Since

2009, changes to regulations governing Indonesia's extractive industry have sought to reverse this phenomenon. Indonesia ranks as the eight largest copper producer globally and Asia's second-biggest copper producer after China. Since 1999, Indonesia began a decentralization program that that seeks to empower local communities. However, the devolution of power has made governance of the country's extractive industries much more difficult.

Regulations governing the extractive industry often lack clarity with Indonesia's latest mineral regulations lacking clarity on the penalties for non-compliance with the country's new divestment requirements, the basis for calculating the price to be paid to a divesting foreign investor, and the mechanism for priority divestment procedure amongst other issues.

While Indonesia's Ministry of Energy and Mining Resources has overall responsibility for regulating mining in the country, it is clear that there are coordination problems with other ministries. Regulatory uncertainty, wherein companies cannot be sure as to how regulatory laws will be interpreted and applied, is a major problem that investors face in Indonesia. Although Indonesian governance has been decentralized, regional governments not yet developed the institutional capacity to administer their new responsibilities and lack of accountability for their actions.

Economic efficiency considerations appear to be accorded lower priority than other socio-political considerations: small scale coal mining in Indonesia is an example. Small-scale mining lacks economics of scale and hence needs to be curbed. Indonesia's new mining law 2009 in principle agrees with this assessment but does not preclude small-scale mining. This complicates enforcement since illegal mining, which is usually carried out via small-scale operations, continues to affect the extractive industry. Also, awarding longer production–operation contracts would motivate mining license holders to set aside resources to search for additional mineral reserves within their license areas thus maximizing the value of the resource. However, Indonesia's new mining law has reduced the duration of mining leases.

The new mineral law also requires that raw materials will have to be processed in Indonesia, rather than being exported in an unprocessed state. This regulation is seen as a move to develop the country's downstream mining industry, increase domestic revenues, and ensure ava ilability of refined products for domestic use. However, in-country processing requirement are economically inefficient given the paucity of electricity to run the refining plants and the lack of know-how or forthcoming investments in the country.

Furthermore, the award of longer production–operation contracts would motivate mining license holders to set aside resources to search for additional mineral reserves within their license areas thus maximizing the value of the resource. However, Indonesia's new mining law has reduced the duration of mining leases. Revenue from mining in Indonesia is shared between the central and regional governments. Due to the lack of data, it is unclear whether this arrangement is optimal.

Indonesia has opaque systems in place along the entire mining value chain although these have marginally improved in recent times especially with regard to the drafting of new regulations. For instance, Indonesia has established a system whereby stakeholders are required to play an active role in the regulatory process. However, the recent roll-backs in mineral policy, such the mineral processing requirement, that were opposed by those outside government, raises concerns regarding the extent to which the public consultation process affects policy formulation.

As far as transparency of governance goes, Indonesia's decentralized governance structure has resulted in increased opportunities for regulatory capture as transparency and accountability are compromised. Overlapping authority and conflicts of interest between departments or even between the central and local governments in dealing with illegal mining problems have also played a part in its growth over the years. Indonesia still has a long way to go before she can have regulations and regulatory institutions that are world-class and that engender a more efficient and economically viable coal mining industry. Indonesia should raise the transparency with which the regulations are formulated. This will ensure that the variety of inputs received are able to identify the potential negative externalities generated via proposed regulations prior to their implementation however equitable they might appear in principal.

Indonesians civil servants involved in the regulatory process need to be adequately trained to ensure technical competence and compensated well enough to lower the possibility of being incentivized to game the system. An institution that coordinates the regulations that affect the Indonesia extractive industry should be set up. It should consist of technocrats from the energy, public finance, and planning ministries to ensure that the regulations are statically and dynamically efficient.

Indonesia has established a system whereby stakeholders are required to play an active role in the regulatory process. However, the recent roll-backs in mineral policy, such the mineral processing requirement, that were opposed by those outside

government raises concerns regarding the extent to which the public consultation process affects policy formulation. Indonesia's decentralized governance structure has resulted in increased opportunities for regulatory capture as transparency and accountability are compromised. Overlapping authority and conflicts of interest between departments or even between the central government in Jakarta and local governments in dealing with illegal mining problems have also played a part in the expansion of illegal operations over the years.

There is a need for very clear guidelines as to the extent of the local government's regulatory authority in Indonesia. Given the vast mineral resources in the country, delay in this regard will be costly as although decentralization is a way to devolve power and might be considered equitable, it has had a negative impact on governance of the country's extractive industry.

Malaysia

Despite its problems with accountability and transparency, Malaysia is one of the few examples of resource rich developing countries that have managed to avoid the "resource curse", and this stems from the strength of its largely judicious macroeconomic policies, but transparency and accountability are somewhat limited and there are indications that the current bipartite, centralized structure may not be equally effective in the future.

Malaysia is a significant producer of natural gas, with 61.8 billion cubic meters of bcm of gas production in 2011, or 1.9% of the world total. It is the 3rd largest gas producer in the Asia-Pacific region and among the major gas exporters in the world. The major industry player in the natural gas industry is Malaysia's national oil company, PETRONAS, which has exclusive ownership, exploration and exploitation rights of all petroleum resources in Malaysia.

Malaysia is a tiny gold producer on the global stage, but gold production has increased sharply between 2008 and 2010. Foreign companies dominate the gold mining industry, but the state governments are the key stakeholders, possessing and owning all minerals within their territory to the exclusivity of all others. In Malaysia, the key regulations underlying governance of the gold industry are State Mineral Enactments that give the states the authority to issue mining licenses, mineral prospecting and exploration licenses, and mining leases. Federal laws and regulations on gold mining appear to be fairly clear and coherent, and the use of

standardized State Mineral Enactments has led to consistency of regulations across states as well. Malaysia has had a fairly stable set of laws and regulations governing the mining industry, and frequent changes to regulations are uncommon. Thus regulatory uncertainty is limited.

There is however significant overlap of jurisdiction between the various agencies and levels of government in mining. Alignment between the federal government and state governments is a challenge, although Malaysia continues to attempt to resolve such coordination problems (for instance by the setting up of a National Mineral Council). Most seriously, law enforcement has recently been flagged as an issue in the gold mining industry in the state of Kelantan, where illegal gold mining has boomed in the last year.

The highly centralized governance structure of Malaysia's gas industry has meant that the level of transparency and accountability is not high. Malaysia ranks in the 2nd tier among countries whose extractive industries have been evaluated by the Revenue Watch Institute on the criterion of transparency.

While there is a relatively high level of transparency with respect to its sovereign wealth fund and how much gas revenue accrues to the government, there is little transparency with respect to how the government spends the revenue. Accountability in the governance of Malaysia's natural gas sector is very limited, since PETRONAS is not directly accountable to Malaysian citizens or the Malaysian Parliament and is bound by rules that it itself enforces, creating a potential conflict of interest. The relative lack of transparency and accountability has not yet led to a situation of regulatory capture, but the possibility of future divergence between the objectives of the decision-makers and the broader objectives of the Malaysian economy as a whole cannot be discounted.

The regulatory framework in Malaysia performs reasonably well in some respects but has some noticeable shortcomings as well. Internationally, PETRONAS generally has a good reputation for governance due to factors such as competent management, close alignment of the objectives of the company, the government and the economy, and its technical capacity. Federal laws and regulations on natural gas extraction appear to be fairly clear and coherent and Malaysia provides a favorable business environment for companies with low levels of regulatory uncertainty. But the absence of a distinct regulator has meant that many of the relevant procedures (e.g. the process for production sharing) are not encoded in law, contributing to a lack of clarity as to how the unregulated aspects of natural gas exploration and production are governed.

The state of transparency and accountability in gold mining is imperfect in Malaysia as well. Transparency in revenue sharing between federal and local governments is particularly limited, but there is somewhat more transparency with respect to operations data and publishing of mining legislation. Governance of the mining industry is characterized by decentralization, which enhances accountability. Provisions for direct public participation and consultation are, however, weak or non-existent, limiting accountability. Finally, corruption and regulatory capture exist to a moderate though not severe degree in Malaysia. In the gold mining industry, illegal mining operations have been an endemic problem in recent years in the jungles of Gua Musang and Jeli in the province of Kelantan.

Malaysia's strategies such as policies encouraging a high savings rate, setting up the National Trust Fund to function as a stabilization fund, macroeconomic policies to counter the Dutch disease (such as reserve accumulation and overseas investments), and economic diversification policies have enabled it to, for the most part, benefit economically from its natural gas resources. Natural gas production-sharing contracts in Malaysia appear to perform fairly well from the perspective of maximizing rent extraction from natural gas exploration and production, without noticeably diminishing incentives for investment in the sector. However natural gas revenues have also been used to support fuel subsidies, which are distortionary and have resulted in a significant fiscal deficit, while the absence of equitable revenue-sharing between the federal and state governments has emerged as a politically contentious issue.

Malaysia would benefit from increased transparency in how natural gas revenue is managed and spent, and in the gold industry, in particular with regard to the mining revenue received by different states and the revenue-sharing between the federal and state governments. In Malaysia, a regulatory body that functions independently from PETRONAS should be set up and some of PETRONAS's regulatory and licensing powers should be transferred to this body in order to overcome conflicts of interest and enhance accountability. Similarly in the governance of gold coordination issues between the federal and state governments could be addressed by setting up a consolidated governance regime applicable for the entire country, which can continue to retain some of the decentralized features of the current regime (e.g. state governments having the greatest say over policies implemented in their own states).

In Malaysia, with gold and other minerals owned by the individual states, the economic features of the regime are quite distinct. Because state and federal revenue are clearly distinguished at the outset, the question of equitable distribution

of mining revenues between the federal government and the state governments is less of an issue. A flexible royalty rate can increase investor uncertainty but Malaysia has implemented measures to encourage investment in the gold mining sector which have been generally effective. Mining generates environmental and social externalities, and there has been particular concern in recent times over the use of cyanide in gold mining and the consequent health effects. Malaysia has taken regulatory measures to tackle the negative environmental externalities of mining, but their effectiveness is diminished by the limited public participation in the EIA process.

Provisions for direct public participation and consultation in the governance should be improved, both to enhance accountability and to strengthen the environmental impact assessment process. Finally, a progressive royalty regime should be adopted to increase state rents from gold mining, and while a flexible royalty rate has some benefits, some guidelines limiting the extent to which they can be varied would be useful in order to address investor uncertainty.

Malaysia's governance of the gas industry has been largely effective with respect to economic efficiency considerations, but a more equitable revenue-sharing scheme between the federal and state governments is recommended, which can be done by increasing the royalty rate or specifying a share of the profit gas to accrue directly to the state governments. The federal government should also reconsider its policy of using gas revenues to support fuel subsidies, which are distortionary and have resulted in a fiscal deficit.

Philippines

In the Philippines, natural gas production is a comparatively new phenomenon and all of the gas produced consumed domestically. Gas production has increased steadily since 2001 when the Malampaya gas project began operating. The governance of the natural gas industry has in many ways started out well, in stark contrast to the country's mining industry, especially through the implementation of an effective and socially inclusive environmental impact assessment process. However, growing revenue in recent years has highlighted some of the weaknesses of the regulatory regime, such as limited revenue transparency and some ineffective economic provisions that reduce the benefits the country can obtain from natural gas production, and it remains to be seen how these will be resolved.

The Philippines is well-endowed with mineral resources, including gold, but remains a relatively small producer of gold. Recent years have been marked by the growing role played by foreign companies in the sector and increasing social tensions with respect to mining, putting increasing strain on the governance structures for the gold industry in the country. In the Philippines, minerals are owned by the federal government.

In the Philippines, while there is some degree of transparency, information on specific mining projects is confidential. Although multiple stakeholders are involved in gold mining governance, in practice the decision-making authority is concentrated in the central government. The lack of transparency and the concentration of governance have contributed to local government and indigenous community opposition to gold mining projects. The fact that groups excluded from the formal mining regulatory regime have been able to challenge the regime from the outside through the Local Government Code, civil society and the courts, and Indigenous Peoples' Right Act (IPRA) of 1997, however, does indicate that accountability of a different kind exists. Corruption and regulatory capture are general problems affecting government institutions in the Philippines, including those involved in gold mining governance such as the Department of Energy and Natural Resources (DENR).

The key regulation underlying the governance of gold mining in the Philippines is the 1995 Mining Act. The regulatory regime has numerous weaknesses, not least a lack of clarity given that at least twenty statutes and regulations govern various aspects of mining in the Philippines and property rights are often poorly defined. There is significant overlap of jurisdiction between the various agencies and levels of government in mining, and regulations governing gold mining often overlap and contradict with one other. Regulatory certainty has been cited by mining companies as a strong deterrent to investing in the Philippines, with frequent delays and lags in policy formulation and implementation a major source of uncertainty. In particular, a recent Executive Order has suspended the granting of new mineral agreements pending new legislation to replace the 1995 Act, and there is no certainty on when the new legislation will be instituted. Administrative capacity is limited, with local governments typically lacking the capability to estimate the projected benefits of mining and the DENR having limited administrative capacity.

In the Philippines, the natural gas industry is reasonably transparent with regards to transactions between the government and the mining companies, and transparency is enhanced by the use of public bidding procedures. The regulatory

process is characterized by a certain degree of accountability, with multiple stakeholders involved; a well-developed NGO movement exists in the Philippines; and public participation plays a central role in the environmental impact study (EIS) for natural gas projects. There is, however, a perceived lack of transparency and accountability in the collection and disbursement of revenue earned from natural gas production, and this has become an increasingly contentious issue in recent years. In addition, corruption and regulatory capture are general problems affecting government institutions in the Philippines, and institutions involved in natural gas governance have not been immune either.

Lack of clarity is not generally an issue with the regulatory regime in the Philippines and regulatory overlap is limited, but poorly defined property rights and territorial jurisdiction have sometimes been problematic. Regulatory certainty has been enhanced by broad stabilization provision in the model service contract specified in the 1972 Petroleum Exploration and Development Act as well as by the fact that the laws and regulations have not been subject to frequent changes. However this has constrained the flexibility of the government to adjust and tweak regulations. Delays and lags in policy formulation and implementation are also problematic in the Philippine context.

the revenue-sharing arrangement embodied in the service contracts in the Philippines is in some respects too generous towards the mining company (despite the fact that the majority of net proceeds still accrue to the government), due to a high cost recovery limit of 70% and a constrained ability of the government to increase its rent when profitability is high. There is evidence to suggest that the management of the Malampaya funds has not always been socially optimal, and a consistent framework for the distribution of natural gas revenues received by the government among the various stakeholders is lacking as yet. However a positive feature of natural gas service contracts in the Philippines is their provision of fiscal stability, which is likely to create positive incentives for investment in the natural gas production sector. An effective environmental impact assessment process also exists, which in the case of the Malampaya project led to significant net benefits from avoiding negative environmental externalities. The Malampaya Fund should be included in the National Budget and expenditures from the Fund should be recorded separately. Accountability should also be increased by introducing procedures for parliamentary oversight as to how the funds are spent.

A number of improvements could be made to the economic provisions under which the Philippines governs its natural gas industry. A progressive fiscal regime

should be adopted, whereby increasing profitability is accompanied by an increasing government share of net proceeds, allowing the government to capture the largest portion of the windfall from increased productivity. The cost recovery limit should be reduced from 70% so as to increase incentives for companies to limit operating costs. The Filipino Participation Incentive Allowance (FPIA) is unlikely to be effective as an incentive for Filipino participation due to design flaws and will result in a transfer of wealth largely to foreign contractors, and hence should be scrapped. While equity in revenue-sharing is emphasized in regulations such as the Local Government Code, equitable revenue-sharing should be implemented in practice as well and the dispute over how much of the Malampaya revenue should accrue to Palawan province needs to be rapidly resolved.

The relationship between mining companies, the federal government and local communities lies at the heart of evaluations of how economically efficient the current governance mechanisms for gold mining in the Philippines are. The revenue-sharing arrangements are skewed towards mining companies, with mining companies capturing 29% of total revenue as opposed to around 25% of revenue captured by the central government, local government, workers and managers, and indigenous people and local communities. This is sub-optimal from the point of view of maximizing state rents from mining.

Moreover, despite the numerous incentives for increased investment in the gold mining sector, the direct contribution of gold mining (and mining in general) to the economy has been limited, and spillover benefits are comparatively low. There are significant and legitimate concerns about the domestic sharing of benefits from gold mining, with few benefits accruing to local governments and indigenous communities affected by mining operations. There is also evidence that the negative environmental and social externalities of mining are significant. While there are procedures in place to ensure that such negative externalities are taken into account by mining companies, such procedures have not been very effective.

The governance process in the Philippine gold industry would benefit from increased transparency and a more devolved decision-making process for mining (such as with the Multi-Sectorial Mineral Council in the Mineral Resources Act proposed in 2009). Such measures would lead to accountability while avoiding conflicts between the central government and other stakeholders that impede regulatory effectiveness and create regulatory uncertainty. The process for the adoption of a new legislative framework to replace the 1995 Act needs to be accelerated as the current moratorium on the granting of new mineral agreements

has led to significantly greater investor uncertainty. The revenue-sharing arrangements in the Philippines should be modified so that the government captures a greater share of the mining revenue, as the present structure results in little contribution made by gold mining to the economy either directly or indirectly. Equity in revenue-sharing needs to be emphasized to a much greater degree, and the share of benefits accruing to local governments and communities affected by mining should be increased. This has to be done both by increasing the revenue share accruing to them and by strengthening the procedures in place to ensure that such negative externalities are taken into account in decision making.

Myanmar

In the recent years Myanmar has produced around 20,000 barrels of crude oil per day in recent years, but she has not yet been able to fully realize the full potential benefits from her oil resources, and a key role in this is played by the governance structures in place. Myanmar's copper output is small and falling. It produced 12,000 metric tons in 2010 which was nearly 69% of its 2006 level of 19,500 metric tons. Myanmar's mining regulations have not produced the desired investment in its minerals sector.

Corruption is a severe problem in the governance of the oil industries in Myanmar, with the countries ranking 180th out of 182 countries in Transparency International's Corruption Perceptions Index 2011. Corruption is compounded by the fact that there is little transparency or accountability in Myanmar; details of the contracts, revenue-sharing arrangements and signature bonuses are not disclosed, and revenue transparency is largely absent. Moreover, in Myanmar, the technique for recording oil revenues in the national budget significantly understates the amount of revenue received. Accountability is also extremely limited, in Myanmar due to the authoritarian governance structure (despite recent reforms). The risk of regulatory capture is thus significant in Myanmar, and is further accentuated by conflicts of interest at the higher level of the governance of the petroleum industry; for instance, special provisions are given to military spending of petroleum revenues in Myanmar.

Myanmar's regulations governing the extractive industry often lack clarity or contradict each other. Myanmar's mining law and its annexes are extremely short on standards of good mining practice; procedures to ensure their implementation; or

avenues for any public or individual recourse should practices fail. Mineral extraction policies in Myanmar are unified under the principle of revenue maximization. In that sense, the guiding principle lends support to coordination from the various government departments when framing legislation that would affect the mining industry.

Myanmar does not seem to have a systematic mechanism to develop, monitor, and evaluate regulations. There does not seem to be any centralized regulatory oversight body with 'whole of government' responsibility for regulatory policy. Such a situation makes for poor policy coordination especially in the case of environmental stewardship where the jurisdiction for environmental regulatory implementation is not clearly delineated between Myanmar's central and local governments.

Myanmar's government determines which category a mining project falls under: large-scale production, small-scale production, or subsistence production. Given that the government has the discretion on deciding whether a project is small or large-scale leaves open room for negotiations and bribery. This can reduce the economic efficiency of the extractive industry if the government's incentives are skewed towards deeming a large number of projects as small-scale. There is little evidence to suggest that the environmental impacts of copper mining have been accounted for by the authorities in Myanmar.

In fact, no duty is imposed on the holder of a mining permit to carry out an environmental and social impact study or report. Neither is there any procedure for the independent assessment of such reports, or their filing for public scrutiny or public hearings.

In the past, evidence of public consultations or opinions from stakeholders seemed missing in Myanmar. However, Myanmar has been seeking to make improvements in the manner in which it formulates regulations that govern the mining industry. Stakeholders are being asked for their opinions prior to the new mining law that is expected to be formulated this year. The vague nature of Myanmar's mining law allows for the mining sector to be plagued by several illegal practices. Also, the poorly worded mining law allows expropriation of privately-held land.

Myanmar's mineral law lays out the duties of the Chief Inspector of Mines, and allows her to assign the powers of the inspector to any suitable officer in the Department, or delegate her own powers to junior inspectors allowing inexperienced, untrained personnel to investigate major breaches of procedure or threats to people and the environment. This raises the possibility of regulatory capture.

The quality of the overall regulatory framework and governance in Myanmar is rather poor, and is made still weaker by the absence of any comprehensive and updated Petroleum Law. Regulatory clarity tends to be lacking because of the absence of a workable Petroleum Act, which has been a key barrier to foreign investment in the oil sector. The absence of a comprehensive legislative framework and the general lack of transparency create regulatory uncertainty and increase risks for investors. While the government has instituted laws that protect foreign investors, the contradictory articles within the law make for increased regulatory uncertainty.

The model oil production-sharing contract in Myanmar allows it to capture on average at least 59% of the oil revenue per barrel and is geared towards maximizing the rent accruing to the government through features such as progressive profit-sharing and limited cost recovery. Myanmar has chosen to emphasize maximization of the rent captured by the government, which comes at the cost of reducing the incentives for foreign investment in the sector. It is not clear whether incentives such as tax holidays and exemptions from export duties are sufficient to overcome this. There are also legitimate concerns that the petroleum revenue generated is not always equitably shared within Myanmar.

Myanmar should practice increased transparency in its governance of the oil industry, in particular with respect to how oil revenues are obtained, managed and spent. Increased parliamentary oversight and the use of public consultation procedures are recommended to increase accountability and assuage concerns about equitable sharing of the benefits of oil production. A comprehensive and updated legislative package is urgently needed to improve the quality of the regulatory framework and increase regulatory clarity and certainty. Given that considerable unexplored or partially explored petroleum resources still exist, Myanmar should consider increasing the revenue share of the contractor companies in the production-sharing contracts in order to achieve a significant increase in the scale of oil exploration and production activities in the country.

Myanmar needs to regularly revisit its regulatory policies to ensure that they are up-to-date and align with the country's developmental needs. The country should set-up a formal institution that ensures alignment of regulatory policies. This body should consist of members from the country's energy regulatory institutions as well as the planning agencies. The environmental impacts of mining practices need to be taken into consideration. Myanmar should consider the institution of environmental impact assessments that are adjudicated by independent agencies.

Myanmar should raise the transparency with which the industry is regulated. This will ensure greater participation from foreign investors whose presence in the industry is needed if the country is to meet its output potential.

Vietnam

Vietnam is the leading supplier of anthracitic coal, which has high heat content, in the Asia-Pacific region. Despite several reforms, Vietnam has had a reputation of being a difficult place to do business on account of lack of transparency and inconsistency in the interpretation of regulations. Whilst efforts are being made to improve these state of affairs, more can be done to raise the industry's efficiency and economic contribution to the country.

In Vietnam regulations governing the extractive industry and coal often lack clarity. There is a high degree of uncertainty concerning the administration, interpretation, and enforcement of existing regulations. This uncertainty can reduce investment appetite in the sector. Vietnam's recently drafted Mineral Law 2010 leaves much interpretative leeway in certain clauses. The various Vietnamese government agencies tasked with handling the different aspects of mining are unable to coordinate effectively. This results in regulations that conflict in their objectives and result in a duplication of effort. Vietnam's Mineral Law 2010 does not address the issue of uncertainty brought about by the devolution of authority between the center and the provinces.

Given the sometimes conflicting and inconsistent interpretation of regulations, the multiple levels of regulation and the uncertainty that this engendered did not augur well for the timely and effective progress of a mining project. Vietnam's regional governments lack the institutional capacity to administer their new responsibilities and lack of accountability for their actions.

Vietnam accords lower priority to economic efficiency considerations. For instance, the pertinence of ECONOMICS OF SCALE to mining efficacy has been acknowledged by Vietnam's new mineral law; however, ambiguity in the wording of the law diminishes its import. Also, Vietnam's coal price-setting mechanism, which is based on a mine's marginal cost of production, could lead to a welfare loss as the mining company is better informed of its costs than the regulator. Marginal cost pricing is an implicit subsidy to less efficient mines. Vietnam has been experimenting with different tax formulae in an attempt to optimize on revenues.

However, frequent changes in taxation policy can have a detrimental impact of investor confidence in the sector.

Vietnam has opaque systems in place along the entire mining value chain although these have marginally improved in recent times especially with regard to the drafting of new regulations. There is evidence that stakeholders in the mining industry had been consulted prior to the formulation of Vietnam's new mineral law 2010; however, it is unclear as to whether the critiques have been taken into consideration where the input has been provided.

Illegalities in the Vietnamese mining sector have become more visible in recent years, resulting from several factors which include unclear laws, poorly equipped local governments, collusion between provincial governments and mining companies, and corruption. Nevertheless, one area that has seen a marked improvement in transparency standards is the manner in which licenses are now handed out under Vietnam's new mineral law, which requires that exploration and mining rights are auctioned.

Vietnam still has a long way to go before she can have regulations and regulatory institutions that are world-class and that engender a more efficient and economically viable coal mining industry. Vietnam needs to have a formal process in place such that stakeholders in the country's extractive industry are consulted prior to the formulation a new regulatory policies. The country needs investments to raise the technical competence of the staff involved in the regulatory process and should consider opening up the industry to foreign miners in a bigger way. Regulatory authorities need to be compensated appropriately to lower the risk of regulatory capture. Regulatory coherence can be improved by setting up a formal institution that aligns policies with Vietnam's broader development objectives. The ministries of energy, public finance, and planning should be form a part of the institution.

Timor Leste

Timor Leste is the third country in the world to have been awarded Extractive Industries Transparency Initiative (EITI) status, and is the only country in South-east Asia to have done so. Timor Leste in 2001 had an output of approximately 83.7 thousand barrels of crude oil per day, but has not yet been able to fully realize the potential benefits from her oil resources, and a key role in this is played by the governance structures in place. Timor Leste has striven to enact laws and

regulations that enhance transparency and does look to public consultation before the enactment of its law. However, many organizations within the country do not have the capacity to effectively critique government proposals which limit their influence over government policy. More significantly, the benefits of transparency are to an extent eroded by high corruption levels, and the country has ranked very poorly on Transparency International's (TI) Corruptions Perceptions Index ranking 143rd out of 183 countries.

Regulations governing Timor's petroleum sector are quite intricate especially regarding revenue collection. This complexity makes adherence to the regulations difficult to follow as well as police. Furthermore, to date Timor-Leste has not yet enacted a law on expropriation, though the constitution does state that requisitioning and expropriation of property for public purposes will be followed by fair compensation. The justice system is in transition and the country's parliament has not yet completed enacting a full a set of national legislations. Hence, the legal foundations are an uncertain and changing mix of Portuguese, Indonesian, United Nations interim administration, and Timorese jurisprudence.

Finally, government employees often lack administrative experience.

Timor-Leste manages its petroleum wealth via a Petroleum Fund established in 2005. Over the past few years, growth in budget revenues has been financed mainly out of growth in the petroleum fund, which has increased with new oil and gas discoveries. With increasingly ambitious development goals, though, the Government has been overdrawing from the Petroleum Fund. The recent revision of the Petroleum Fund Law takes on more risk, weakening the sustainable spending rule.

Significant improvements need to be made to the governance of the oil industry in Timor Leste. While transparency underpins Timor-Leste's regulations, this should not be the only criterion used to judge good governance and a broader set of metrics is needed in order to gauge its performance. The reports that the country produces under its transparency initiatives need be produced in a timely manner and provide information in greater detail in order to allow for greater scrutiny by concerned groups. Timor-Leste needs to build up its regulatory capacity ensuring that personnel are technically adept at providing administrative support to the complex regulatory regime in place. The country needs to simplify its regulations to ensure that compliance cannot be circumvented due to lack of understanding on the part of companies or regulatory authorities. Finally, changes to the regulatory fund need to be deliberated over keeping in mind the guiding principles for creating the fund.

Cambodia

Cambodia does not possess a mature oil industry, but oil is of critical importance nonetheless although Cambodia does not produce any oil and production is not expected to commence before at least mid-2013. Cambodia has not yet been able to fully realize the full potential benefits from her oil resources, and a key role in this is played by the governance structures in place.

Corruption is a severe problem in the governance of the oil industries in Cambodia which ranks 164th 182 countries in Transparency International's Corruption Perceptions Index 2011. Corruption is compounded by the fact that there is very little transparency or accountability in the country. In Cambodia details of the contracts, revenue-sharing arrangements and signature bonuses are not disclosed, and revenue transparency is largely absent; because the Cambodian National Petroleum Authority (CNPA) is directly accountable only to the Prime Minister. The risk of regulatory capture is thus significant in Cambodia, and is further accentuated by conflicts of interest at the higher level of the governance of the petroleum industry.

The quality of the overall regulatory framework and governance in Cambodia is not high and not conducive to business operations. The 1991 Petroleum Regulations, for instance, are over 20 years old and outdated, especially in light of the creation of the CNPA in 1998. The Cambodian government has recognized the deficiency and (together with CNPA) plans to replace the 1991 Petroleum Regulations with a new legislative framework. However there is considerable uncertainty as to when the new legislative framework will be established, increasing risks for investors. Significant delays in the process for approval of production permits further increases uncertainty. There are legal and technical capacity constraints in the ability of the CNPA to directly regulate and govern the petroleum industry.

In Cambodia, the model production-sharing contract will allow it to capture on average at least 62% of the oil revenue per barrel. Nevertheless in many respects, the model PSC in Cambodia is skewed in favor of the investing company and the guaranteed revenue for the government is only 16% of gross production. In addition, the 1998 and 1999 amendments to the Petroleum Regulations have meant that open bidding has not been conducted at all since the initial 1991 bidding round. This leads to a lack of transparency and the awarding process fails to ensure that the best qualified companies will be selected to explore and produce oil.

Significant improvements need to be made to the governance of the oil industry in Cambodia. Cambodia should practice increased transparency in its governance of the oil industry, and in particular needs to emphasize transparency with respect to how oil revenues are obtained, managed and spent. This should be accompanied by increased parliamentary oversight and the use of public consultation procedures to increase accountability and limit the scope for corruption and regulatory capture.

In order to increase regulatory clarity and certainty, Cambodia needs to accelerate the process for adopting and implementing of the new legislative framework to replace the 1991 Petroleum Regulations. Given the context of limited oil resources, Cambodia should consider modifying the production-sharing contracts it awards so as to capture a greater share of the oil revenues and reduce the exposure to oil price volatility, for instance by reducing the cost recovery limit and increasing the royalty rate. It is also recommended that Cambodia return back to an open bidding process in the awarding of blocks so as to increase transparency and allow blocks to be awarded to companies best able to explore and produce oil.

Introduction

Introduction

INTRODUCTION

Extractive industry (EI) resources, such as fossil fuels (crude oil, natural gas or coal) and other non-fuel minerals (like copper, gold, etc.), are abundant in many developing countries. The revenues from the export of these resources usually account for a large share of the gross domestic product (GDP) of these countries; in some cases export earnings account for as much as 90% of government revenues.[1] The revenue stream generated by the monetization of a country's resource endowment can play a pivotal role in sustaining its development via the generation of jobs both directly and indirectly, and facilitating movement up the technological value chain. The revenue from EI can also help governments secure a strong financial base that can be used to fund projects, such as the development of infrastructure, that have strong multiplier effects.

EI are often characterized by the existence of high economic rents, i.e. the difference between the value of a scarce natural resource (the future supply of which cannot be rapidly adjusted upwards) and the cost of production.[2] The existence of these natural resource rents become a motivating source of corruption and misappropriation of public resources.[3] Analysts argue that the existence of EI in a country can engender weak institutions that undermine sustainable and inclusive development, leading to a concentration of benefits to a narrow beneficiary group and result in a concentration of valuable resource ownership and political offices.[4] This can result in lowering political competition and consultation among various constituencies in policy making and institutional design whilst increasing the potential for regulatory capture and bias.

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[1] See for instance, *Appendix 1 Resource-Dependent Countries: Descriptive Statistics* in T. Baunsgaard, M. Villafuerte, M. Poplawski-Ribeiro, C. Richmond (2012). Fiscal Frameworks for Resource Rich Developing Countries, IMF Staff Discussion Note, May 16, 2012, SDN/12/04

[2] R. M. Solow (1974). The Economics of Resources or the Resources of Economics, *The American Economic Review*, Vol. 64, No. 2, Papers and Proceedings of the Eighty-sixth Annual Meeting of the American Economic Association, pp. 1-1

[3] F. van der Ploeg (2011). Natural Resources: Curse or Blessing? *Journal of Economic Literature*, American Economic Association, vol. 49(2), pages 366-420, June; D. Acemoglu, T. Verdier (2000). The Choice between Market Failures and Corruption, *The American Economic Review*, Vol. 90, No. 1 (Mar., 2000), pp. 194-211.

[4] A. Bebbington, L. Hinojosa, D. H. Bebbington, M. L. Burneo, X.Warnaars (2008). Contention and Ambiguity: Mining and the Possibilities of Development, *Development and Change* 39(6): 965–992, Institute of Social Studies 2008. Published by Blackwell Publishing, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main St., Malden, MA 02148, USA

Concentration raises the salience of large a nd easily identifiable revenue streams, triggering struggles over their control.[5] Thus, resource wealth can lead to the entrenchment of autocratic regimes, the onset and persistence of civil conflict and the undermining of legal and constitutional norms.[6] Empirical evidence suggests the existence of the so-called "resource curse"[7] where countries that are well-endowed with natural resources are relatively more susceptible to severe distortions in the economy and poor economic growth.[8] Thus, sub-optimal development trajectories can arise from misallocating (fraudulently or otherwise) the revenue stream that derives from EI.

Several solutions to the "resource curse" have been proposed. These have included requiring transparency of negotiated outcomes, regulatory reform, stabilizing expenditures, using earnings for investment, introduction of special economic zones, direct distribution of resource rents to the population, creation of a sovereign wealth fund to invest in a portfolio of foreign assets (e.g. Qatar Investment Agency, Abu Dhabi Investment Corporation, etc.), and privatization of natural resource sectors (although this is relatively rare, since most countries outside the US do not allow private property rights in sub-soil resources and vest state authorities with control of all such mineral resources.[9] This paper will focus its attention on the impact of transparency initiatives and regulatory regimes that govern EI in the Association of Southeast Asian Nations (ASEAN) as a means of attenuating the misallocation of revenues.

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[5] Auty, R. and S. Gelb (2001). Political Economy of Resource-Abundant States, in R. Auty (ed.) *Resource Abundance and Economic Development*, pp. 126–44. Oxford: Oxford University Press.
[6] P. Le Billon (2001). The political ecology of war: natural resources and armed conflicts, *Political Geography* 20(5):561 – 584.
[7] The resource curse thesis, which gained momentum in the early 1990s, sought to explain two decades of poor economic performance in mineral-rich countries.
[8] See for instance, Auty, R. (1993). *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London: Routledge; Sachs, J. and A. Warner (1995). Natural Resource Abundance and Economic Growth. *NBER Working Paper Series No. 5398*. Cambridge, MA: National Bureau of Economic Research; T. L. Karl (1997). The Paradox of Plenty: Oil Booms and Petro-States, *Studies in International Political Economy*, University of California Press.
[9] Birdsall, N., A. Subramanian (2004). Saving Iraq from Its Oil. *Foreign Affairs* 83(4):77–89. 2; Davis, J., R. Ossowski, J. Daniel, S. Barnett (2001). Stabilization and Savings Funds for Nonrenewable Resources: Experience and Fiscal Policy Implications. *International Monetary Fund*; Weinthal, E., P. J. Luong (2006). Combating the Resource Curse: An Alternative Solution to Managing Mineral Wealth, *Perspectives on Politics* 4(1):pp. 35–53; Sandbu, M. E. (2006). Natural Wealth Accounts: A Proposal for Alleviating the Natural Resource Curse. *World Development* 34(7):1153–1170. 2; Humphreys, M., J. Sachs, J. Stiglitz (2007). Escaping the Resource Curse, New York: Columbia University Press.

As far as Southeast Asia is concerned, EI have seen rapid expansion in recent years. Private sector entities and national companies are pushing for exploration and prospecting in the region, ramping up capacity in the production of oil and gas and several precious metals and commodities. However, the EI is in differing stages of maturity within ASEAN. The extractive industries are well-established in the established resource-rich ASEAN members of Indonesia and Malaysia. The relatively newer member states such as Cambodia, Lao PDR, and Myanmar are still in relative infancy with the commercial viability and estimates of proven, probable and possible natural resource reserves subject to wide uncertainty. In essence the regulatory frameworks in the two groups of countries differ, reflecting their relative differences in stages of economic development and historical experience with foreign investment and indigenous technological expertise.

The ASEAN bloc has referred to the benefits that its member countries derive from the extractive industries. As part of ASEAN's larger commitment to economic integration and its stated goal of market integration by 2015, the Ha Noi Declaration at the ASEAN Ministerial Meeting on Minerals (2011) reaffirmed ASEAN's commitment to developing greater integration in the sector.[10] Accountability and transparency and best-practice regulation do not explicitly feature in the Declaration. Given the pitfalls associated with misuse of revenue's from the EI, it is crucial that these are considered. It is however likely that sensitive issues pertaining to domestic political and constitutional issues such as corruption will remain within the ambit of national sovereignty and not be subject to regional multilateral agreements.

This research paper will comprehensively analyze EI in the Southeast Asian region covering Indonesia, Malaysia, the Philippines, Vietnam, Cambodia, Timor Leste, and Myanmar via a case study approach. Essentially, certain energy/mineral sub-sectors will be analyzed for a subset of countries (see ***Table** 1.1* below).

[10] See for instance the Joint Press Statement from the Third ASEAN Ministerial Meeting on Minerals, 9 December 2011, Ha Noi, VietNam: http://www.aseansec.org/documents/111209%20-%20Joint%20Press%20Statement-AMMin-3-Finalfinal.pdf

Table 1.1 Case studies to be undertaken

Countries	Crude Oil	Natural Gas	Coal	Copper	Gold
Indonesia			x	x	
Malaysia		x			x
Philippines		x			x
Vietnam			x		
Cambodia	x				
Timor Leste	x				
Myanmar	x			x	

The analysis will focus on political economy considerations and governance of the EI in Southeast Asia. The analysis will cover the prevailing state of the extractive industry, identify the impact of regulations on the extractive industry, and detail initiatives to improve good governance in mineral and energy sectors. Finally, recommendations for developing a framework of good governance of extractive industries in the region will be provided.

The Role of Government, Regulatory Reform, and Transparency Initiatives

The study of political economy cites two characteristics of good governments: (1) that they represent and are accountable to the population they are meant to serve, and (2) that they are effective—that is, they ensure the security of property rights and supply other public goods.[11] In classical liberal theory, the requisite role of government has long been understood to include sound money, public goods such as standards for weights and measures, a system of justice, law and order (which makes the state a 3rd party enforcer of legal contracts) and national defense. In this picture of the classical liberal state, the state's authority is derived from its necessity to provide public goods; provided efficiently, the state can provide the regulatory and statutory environment to achieve the economy's inter-temporal efficiency frontier at a non-accelerating inflation rate of unemployment.[12]

[11] Levi, M. (2006). Why We Need a New Theory of Government, Presidential Address, Perspectives on Politics, Vol. 4/No. 1

[12] See for instance, Douglas North, "Structure and Change in Economic History (get full ref). For a full statement of the classical liberal constitution, see Hayek, "The Constitution of Liberty" (get full ref).

Regulations, which are an attempt by the government to alter the allocation of resources to achieve societal goals that might not otherwise occur, have been an important instrument for governments to achieve their welfare objectives. Regulations can be thought of as being an instrument whereby governments, or non-governmental bodies to which they have delegated regulatory powers to, set requirements on their citizens and businesses that are legally binding. This, regulations can encompass a wide range of instruments such as the setting of standards and the allocation of permits.[13] The use of regulation as an instrument of achieving economic and social policy objectives has increased dramatically since the 1940s making regulation ubiquitous.[14]

Regulations can be broadly classified into two categories: economic regulations and social regulations.[15] Economic regulations govern market entry and exit conditions, permissible competitive practices, the size of an economic unit, or the bounds on the prices that firms can charge. On account of their specificity, economic regulations usually, though not necessarily target a single sector of the economy (for instance, minimum wage laws). In contrast, the social regulations compel corporations to accept greater responsibility in areas such as product safety, the well-being of their employees, consumer rights and the negative consequences that accompany a firm's production processes by specific ("command and control" rather than market-based) regulations on performance, technology, social norms or other outcomes. Social regulations can often impose large compliance costs on firms, and hence they are highly contested. The existence of social regulations is often a function of the stage of development of an economy, its political norms, legal systems and governance structures.

All regulatory policies are based on a mix of economic, legal, and public-management principles.[16] Regulatory policy can have different connotations depending on the context and the issues under consideration. To some, it refers to the substantive policy content of regulation. To others, such as the Organization of Economic Cooperation and Development (OECD), regulatory policy refers to multifaceted programs of government to improve the use of regulatory policy

[13] Organisation of Economic Cooperation and Development (OECD) (2011). Regulatory policy and governance: supporting economic growth and serving the public interest, OECD Publishing.
[14] Jacobs, S., P. Ladegaard (2008). Regulatory Governance in Developing Countries, *Better Regulation for Growth (BRG) Program*, Investment Climate Advisory Services, World Bank Group
[15] *Ibid.*
[16] Malyshev, N. (2006). "Regulatory Policy: OECD Experience and Evidence," Oxford Review of Economic Policy, Vol. 22, No. 2.

with continued efficiencies expected in regulatory policies, tools, institutions, and processes.[17] The understanding of regulatory policy has gradually evolved from being considered a static, one-time intervention to a dynamic process whereby governments systematically and continually develop and implement tools and institutions to shape the use of their regulatory powers. This could include the integration of competition policy into the policy agenda or imbibing in its regulators the need for flexibility in regulatory policy.

The public interest theory of regulation is based on the assumption that competitive markets of classical liberalism often fail to achieve the socially optimal outcome. The economic rationale for this argument can be traced back to the microeconomic foundations of modern day economics.[18] The canonical Arrow-Debreu model of perfect competition resulted in the exposition of the first fundamental theorem of welfare economics. This theorem states that under certain conditions, the equilibrium that the market achieves would result in a Pareto-efficient allocation of resources.[19]

The conditions enumerated in the theorem are violated in certain circumstances such as imperfect competition in an industry, when the goods in question are public goods, when industries exhibit increasing returns to scale, and when externalities are present. It is the deviations from the idealized conditions in the real world that led to the notion that government intervention is essential to improve societal welfare. A student of traditional Pigouvian welfare economics would argue that government regulations are ubiquitous given that market failures are.[20]

The support for regulatory intervention rests on the implicit assumption that government failure does not occur or if it does, then it is of second order importance. This assumption has lost credibility in the past few decades.[21] The intellectual underpinnings of the argument for government intervention came under scrutiny starting with the work of Coase.[22] He argued that private voluntary markets exhibit contractual ingenuity in dealing with potential market failures. Given low enough transactions cost to bargaining and contracting and clear property rights,

[17] Jacobs and Ladegaard, *op. cit.*
[18] Schokkaret, E. (2004). "The Microeconomics of Market Regulation," *Tijschrift voor Ecobomie en Management*, Vol. XLIX, No. 2, Pgs. 209–216.
[19] Arrow, K. J., Debreu, G. (1954). "Existence of an equilibrium for a competitive economy," *Econometrica* **22**: 265–290.
[20] Pigou, A. C. (1938). "The Economics of Welfare," ed. London: Macmillan and Co.
[21] Shleifer, A. (2010). "Efficient Regulation," *Working Paper 15651*, NBER Working Paper Series.
[22] Coase, R. H. (1960). "The Problem of Social Cost," *Journal of Law and Economics*, 2:1-44.

externalities such as pollution or over-use of resources can be resolved by private contracting. The Coasean approach can be enforced by courts through appropriate legal solutions that assign property rights to resolve local externality problems. In this tradition, the space left for efficient regulation is limited to clear market failures. Yet it is also often observed that regulations are often evoked as populist responses to economic crises, introduced under public pressure whenever market outcomes are perceived as undesirable by powerful social or political constituencies, regardless of whether there are more efficient solutions.[23]

As evidence of regulatory failure began to accumulate over the years, many economists began to espouse the view that that political rather than efficiency concerns drive regulation. Under the most prominent version of this theory, industries or other interest groups organize and capture the regulators to raise prices, restrict entry, or otherwise benefit the incumbents.[24] Stigler thus brought attention to the possibility of "regulatory capture" when regulations might not be driven by the need to enhance efficiency but to meet political ends.[25]

Students of developmental economics find that issues of corruption, such as regulatory capture, tend to occur more frequently in less economically developed countries. While corruption can and does occur in richer and more developed economies, the existence of strong and independent legal and statutory institutions can play a key role in alleviating the worst excesses of corruption and "regulatory capture". In cross-country regression analyses, studies find that by far the most important determinant of corruption is economic development, measured by real GDP per capita. Causation runs from economic development to lower corruption, and from corruption to lower economic development (measured by GDP per capita).[26]

Some analysts contend that this is because economic development increases the spread of education, literacy, and depersonalized ('arm's-length') relationships.[27] The 'arm's-length' principle requires that personal relationships shall play no role

[23] Hart, Oliver. 2009. Regulation and Sarbanes-Oxley, *Journal of Accounting Research* 47(2): 437-445.
[24] Stigler, *op. cit.*
[25] Stigler. G. J. (1971). "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science*, 2(1): 3-21.
[26] Paldam, M. (1999a): "The big pattern of corruption: Economics, culture and the seesaw dynamics," *Working Paper* No. 1999-11, Department of Economics, University of Aarhus; Treisman, Daniel (2000): "The causes of corruption: a cross national study," *Journal of Public Economics*, vol. 76, pp. 399-457.
[27] Treisman, Daniel (2000): "The causes of corruption: a cross national study," *Journal of Public Economics*, vol. 76, pp. 399-457.

in economic decisions involving more than one party. Equality of treatment for all agents is essential for a well-functioning market economy. Rich countries are relatively efficient countries, where transactions have to be relatively easy to effect and transparent. Corruption is a break in the 'arm's length' principle, and makes transactions inefficient, slow and unpredictable.[28]

Practitioners have observed the costs of poorly designed or implemented regulations. Poorly designed regulations can negatively affect innovation, lower economic efficiency, and reduce investments resulting in real costs to the economy.[29] The obsolescence of regulations due to rapid evolution of the economy is a serious challenge to the continued efficacy of a regulatory regime. So although government intervention (such as regulation, information campaigns, etc.) could be required to address market failures, to achieve equity outcomes, or manage risk, care must be taken when framing the scope and degree of regulatory intervention.

Several countries have in the past few decades sought to reform regulatory frameworks in key industries with an aim of reducing the burden of regulation on economic agents and improving the cost-effectiveness of regulations. Despite the heterogeneity in the regulatory design and policies amongst various economies, best practice approaches as identified by multi-lateral organizations, such as the Organization of Economic Cooperation and Development (OECD), can facilitate more robust regulatory design.

Best practice approaches can be thought of as encompassing a set of principles and tools that enhance the efficacy of the regulatory process. The principles cover issues of the design of the regulatory framework whereas the tools refer to particular techniques or methodologies, such as regulatory impact analysis (RIA), to undertake various aspects of the regulatory task. The use of the best practice approach brings issues of regulatory costs and incentives effects into sharp focus whilst ensuring the effective review of existing interventions.

The best practice guides provide guidance as to the principles and tools to be used to ensure the efficacy of regulation.[30] These principles and tools can be broadly categorized as follows:

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[28] Shleifer, A., R. W. Vishny (1993): "Corruption", *The Quarterly Journal of Economics*, 108 (August): s. 599–617; Myrdal, G. (1968a): "Corruption as a hindrance to modernization in South Asia" in Asian drama: An Enquiry into the Poverty of Nations. Gunnar Myrdal, vol. II, New York: The Twentieth Century Fund, s. 937-951.

[29] Organisation of Economic Cooperation and Development (OECD) (1997). The OECD Report on Regulatory Reform: Synthesis, OECD, Paris.

[30] OECD (2011b). Draft OECD Recommendation on Regulatory Policy and Governance, OECD, Paris

- Open government approach
  Best practice guides cite the adoption of a transparent, user-centric approach to the regulatory process as a crucial ingredient of good regulatory practice. This means that stakeholders are consulted in the policy formulation process and the information is made available to them at minimal cost. Evaluation of the transparency of the policy formulation and administration process requires careful analysis as to its inclusiveness (i.e. real and informed participation of all stakeholders that are affected by the proposed regulation), information access, and ease of understanding.
- Regulatory coherence
  There is often a lack of coordination amongst government entities which result in regulations that conflict in their objectives and result in a duplication of effort. To circumvent this, clear objectives need to be set, the roles and functions of the regulatory authorities need to be specified, coordination mechanisms need to be in place to harmonize the regulatory process.
- Assessment of regulatory costs and benefits
  There are costs and benefits imposed by regulation. And these costs need to be balanced against the benefits in order to arrive at an efficient, mutually coherent set of regulatory policies. The resources at the disposal of a government are scarce. It is this scarcity that necessitates a careful analysis of the relative merits of regulation and the distributional impacts that they might have. Regulatory impact assessments are essentially cost-benefit analyses of the implications of regulations under scrutiny.
- Monitoring mechanisms to ensure regulatory efficacy
  There is a need to continuously monitor regulations to see whether they are valid given the fast-changing economic, technological, and political environment faced by the stakeholders. Monitoring mechanisms need to be in place such that regulations are evaluated on a regular basis which allow for a revision of regulations in light of these fluctuations.
- Risk management
  Some regulations are enacted as a means to tackle risk. When this is the basis for the enactment of a regulation, scientific principles ought to be drawn upon to estimate the risk involved.
- Regulatory capacity building
  There is a need to develop expertise in regulatory management at both the local and regional levels in order to ensure a coordinated regulatory effort.

- Administrative appeals mechanism
  Stakeholders in the regulatory process need to have access to appeal regulations if there is a perceived abuse of discretionary power on the part of the regulator. Best practice guides recommend that this process be an uncomplicated one, without excessive legal costs, yet cannot be abused by frivolous public interest petitions which block necessary regulations. These mechanisms are essential in order to have checks and balances on the regulatory authority.

GOVERNANCE OF EXTRACTIVE INDUSTRIES

The risk of poorly designed interventions, and the necessity for best practice approaches in governance and regulations, is particularly pertinent to the analysis of extractive industries (EI). As mentioned earlier, EI is often characterized by the existence of high economic or "resource" rents, i.e. the difference between the value and the cost of production.[31] The existence of these resource rents can lead to corruption and misappropriation on the part of favored or privileged stakeholders.[32]

An extensive literature has documented the "resource curse", with countries that are more abundant in natural resources performing relatively poorly in economic terms, including poor levels of economic growth, high inflation and unemployment, lack of export diversification, and greater corruption.[33] A variety of causal mechanisms have been proposed to explain the resource curse paradox. In part, there are intrinsic economic reasons why the extractive industry poses a developmental challenge: the volatility of world resource prices can have negative effects on economic growth and investment,[34] while a resource boom can lead to an

[31] R. M. Solow (1974). The Economics of Resources or the Resources of Economics, *The American Economic Review*, Vol. 64, No. 2, Papers and Proceedings of the Eighty-sixth Annual Meeting of the American Economic Association, pp. 1-14.
[32] F. van der Ploeg (2011). Natural Resources: Curse or Blessing? *Journal of Economic Literature*, American Economic Association, vol. 49(2), pages 366-420, June; D. Acemoglu, T. Verdier (2000). The Choice between Market Failures and Corruption, *The American Economic Review*, Vol. 90, No. 1 (Mar., 2000), pp. 194-211.
[33] Rosser, A. (2006). The Political Economy of the Resource Curse: A Literature Survey, Institute of Development Studies Working Paper 268.
[34] Philippe Aghion, Philippe Bacchetta, Romain Rancière, and Kenneth Rogoff (2009). Exchange Rate Volatility and Productivity Growth: The Role of Financial Development. *Journal of Monetary Economics*, 56(4): 494–513; Frederick van der Ploeg and Steven Poelhekke (2009). Volatility and the Natural Resource Curse. *Oxford Economic Papers*, 61(4): 727–60.

appreciation of the real exchange rate and worsening export competitiveness of the manufacturing sector, a phenomenon known as the 'Dutch disease'.[35]

However, there is a growing consensus among scholars that the role of governments is central to how well extractive industries contribute to development, and that the poor economic performance of resource-abundant countries can mostly be attributed to poor economic management on the part of governments, including the absence of policies to tackle export earnings volatility and the Dutch disease.[36] There is a myriad of explanations as to why governments have tended to mismanage their extractive industries. An abundance of resources can induce "over-exuberance" among national economic and political elites, leading to poor economic policy-making; [37] political elites may engage in rent-seeking behavior, looking to maximize their individual gains at the expense of long-term economic performance.[38] "Renter states" emerge in the context of resource booms and become geared towards the "political distribution of rents" rather than the promotion of productive investment and economic growth.[39] These varied causes of mismanagement point to the potential for government failure specifically when it comes to EI, and highlight the importance of effectively designed regulatory policies for this sector.

The fundamental building blocks to the Best Practice Regulations mentioned earlier are transparency, accountability, and public involvement. These are the very same principles on which the Extractive Industries Transparency Initiative (EITI) is founded. Launched by the erstwhile British Prime Minister, Tony Blair, at the World Summit on Sustainable Development in Johannesburg, in September 2002, the EITI is a coalition of governments, companies, civil society groups, investors, and

[35] Torfinn Harding and Anthony J. Venables (2010). "Exports, Imports and Foreign Exchange Windfalls." Unpublished.

[36] M. Ross (1999). The Political Economy of the Resource Curse. *World Politics,* vol. 51, No. 2: 297-322; Rosser, A. (2006). The Political Economy of the Resource Curse: A Literature Survey.

[37] P. Mitra (1994). *Adjustment in Oil-Importing Developing Countries: A Comparative Economic Analysis,* Cambridge: Cambridge University Press; L. Krause (1995). Social Capability and Long-term Economic Growth, in B.H. Koo and D. Perkins (eds), *Social Capability and Long-term Economic Growth,* Basingstoke: Macmillan: 310-27.

[38] Michael L. Ross (2001). *Timber Booms and Institutional Breakdown in Southeast Asia*. Cambridge; New
York and Melbourne: Cambridge University Press; J. Robinson , R. Torvik and T. Verdier (2002). Political Foundations of the Resource Curse. Centre for Economic Policy Research Discussion Paper Series No 3422.

[39] T. L. Karl (1997). *The Paradox of Plenty: Oil Booms and Petro-States*. Berkeley and London: University of California Press.

international organizations, which provides a robust yet flexible methodology for monitoring and reconciling company payments and government revenues at the country level enhancing transparency and raising welfare.

Transparency initiatives, such as EITI and the Chad Revenue Management Plan, have urged governments in mineral-rich states to disclose all their transactions with foreign extractive firms and their expenditures.[40] They have also sought to increase opportunities for public involvement in deciding how revenues will be spent through advocating improved human rights protection and encouraging a free press.[41] Proponents of transparency argue that it makes markets work more efficiently; enhances trust and cooperation; strengthens institutions; reduces corruption and mismanagement; enables people to hold others accountable for their actions; and increases the legitimacy of decisions and institutions.[42] These are general benefits to society, in the nature of public goods. The benefits and costs to individual actors may not be so positive, however, and governments and corporations often have strong incentives to maintain secrecy and reduce the accountability demanded by either markets or political systems in response to information disclosure. In general, however, transparency is viewed as a positive value.[43]

From an economic perspective, transparency plays the role of information provision. Economic research into the role of information in the decision-making process began gaining traction since the seminal work of Stigler (1961).[44] Since then, the economics of information has entered mainstream economic thought and provided insight as to the impact of information provision and acquisition on decision-making.[45] It is now

[40] Tsalik, S. (2003). Caspian oil windfalls: Who will benefit? *New York: Open Society Institute*, Caspian Revenue Watch; Gary, I., T. Karl (2003). Bottom of the barrel: Africa's oil boom and the poor, Catholic Relief Services.

[41] Ross, M. L. (2001). Extractive sectors and the poor: An Oxfam America report. Boston, MA: Oxfam America; Gary, I., T. Karl (2003). Bottom of the barrel: Africa's oil boom and the poor, Catholic Relief Services.

[42] Greif, A., D. Laitin (2004). "A Theory of Endogenous Institutional Change," *American Political Science Review* 98 (4): 633–652.; Gupta, A. (2006). "Problem Framing in Assessment Processes: The Case of Biosafety," In *Global Environmental Assessments: Information and Influence,* edited by Ronald Bruce Mitchell, William C. Clark, David W. Cash and Nancy M. Dickson, 57–86. Cambridge, MA: MIT Press.

[43] Haufler, H (2010). "Disclosure as Governance: The Extractive Industries Transparency Initiative and Resource Management in the Developing World," Global Environmental Politics, Volume 10, Number 3, August 2010, pp. 53-73 (Article), MIT Press.

[44] Stigler, G. J. (1961). "The Economics of Information," *The Journal of Political Economy*, Volume 69, Number 3, Pgs. 213 – 225.

[45] Stiglitz, J. E. (2002). "Information and the Change in the Paradigm in Economics," *The American Economic Review*, Volume 9, No 3, Pgs. 460 – 501.

recognized that information is imperfect,[46] obtaining information has its costs, information is asymmetric,[47] and information asymmetries affect the actions of firms and individuals.[48] Via the lens of the economics of information, the provision of transparency can be thought of as an information revealing mechanism that can reduce the costs of information acquisition by stakeholders, such as citizens or oil company workers, in the economic process.

While transparency is a necessary condition for reducing corruption in the extractive industry, it is not sufficient by itself: the effectiveness of increased transparency is conditional on citizens having both the ability to process the information, and the ability and incentives to act on that information. As such, accountability, or the extent to which other actors can hold public officials to account for corruption and mismanagement, is necessary if transparency is to have a significant impact.[49] Accountability can have a positive effect on the incentives faced by government ministries and agencies in designing regulations that govern EI and help ensure that special interests are not favored and changes to an inefficient status quo are not hindered. The nature of the information provided matters as well. Providing highly aggregate macroeconomic figures on revenues and expenditures, as opposed to more disaggregated data, is likely to result in collective action problems since individual incentives to act on the information will be weak.[50]

The governance of EI involves choices regarding the economic arrangements underlying resource extraction. A core issue is how the resource revenue is to be shared among the various stakeholders. Production-sharing contracts, which were originally pioneered in Indonesia in the 1960s during the development of its oil resources, have since been utilized in many developing countries, particularly when foreign companies are involved. In a typical production-sharing contract (PSC), the resource extraction company is responsible for providing capital, equipment and

[46] The imperfection of information implies that economic agents do not have costless access to information and so will be unable to know all things, about all products, at all times, and therefore always make the best decision regarding purchase.

[47] Information asymmetry implies that at least one party to a transaction is better informed than the other(s) involved.

[48] Economists such as Stiglitz, Spence, and Akerloff who made pioneering contributions to the field were awarded the Nobel Prize in Economics in 2001. See http://www.nobelprize.org/nobel_prizes/economics/laureates/2001/

[49] I. Kosltad and A. Wiig (2009). Is Transparency the Key to Reducing Corruption in Resource-Rich Countries? *World Development,* Vol. 37, No. 3: 521-532.

[50] Kolstad and Wiig (2009). Is Transparency the Key to Reducing Corruption in Resource-Rich Countries?

expertise and is required to bear the expense risk; the expenses are recovered from a portion of the resource production, and the remainder of the production (the resource profit) is divided among the host government and the company.[51] Production-sharing contracts can also include elements such as royalties levied by the government on gross production, while companies may also have to pay taxes on their share of the resource profit.[52] An alternative to production-sharing agreements is provided by service agreements. In a service agreement, the contractor provides the financing and equipment for the extractive process, but unlike a production-sharing contract the contractor is paid a cash fee to cover the expenses, and the host government owns both the entirety of the resources extracted and the risks of the enterprise.[53]

Effective resource extraction contracts allow host governments to capture economic rent from resource extraction while ensuring that adequate incentives for foreign investment remain in place for it to earn a competitive risk-adjusted return on investment. A disadvantage of production-sharing contracts as they are typically written is that they lead to a revenue stream for the host country that is even more volatile than the price of the commodity in question, [54] implying a lopsided risk-sharing arrangement between the host country and the foreign investor. The extent to which such contracts can result in technology transfer is also questionable. As such whether such contracts allow the host country to achieve a socially optimal outcome is likely to be case-specific, depending on the economic context and the details of how the contract is written.

Another basic choice is the process for the awarding of licensing rights and contracts to decide which companies are to be involved in the extraction process. Transparency in the bidding process is a precondition for socially optimal outcomes and in order to prevent corruption, rent-seeking behavior and misallocation. A number of alternative bidding systems might be utilized.[55] Negotiation on a first-come first-

[51] D. Johnston (1994). *International Petroleum Fiscal Systems and Production Sharing Contracts.* Pennwell Books; R. Fabrikant (1975). Production Sharing Contracts in the Indonesian Petroleum Industry, *Harvard International Law Journal,* Vol. 16: 303-51.; K. Bindemann (1999). *Production-Sharing Agreements: An Economic Analysis*, Oxford Institute of Energy Studies, WPM 25.

[52] K. Bindemann (1999). *Production-Sharing Agreements: An Economic Analysis*.

[53] D. Johnston (2006). How to Evaluate the Fiscal Terms of Oil Contracts, Initiative for Policy Dialogue Working Paper Series.

[54] N. Shaxson (2005). New Approaches to Volatility Dealing With the "Resource Curse" in Sub-Saharan Africa, *International Affairs,* Vol. 81, No. 2: 311-24.

[55] P. Cramton (2009). How Best to Auction Natural Resources. *Handbook of Oil, Gas And Mineral*

served basis, and other informal processes, lack transparency and are particularly susceptible to corruption. A strict first-come first-served rule, without discretion and without negotiation, is transparent but unlikely to result in rights/contracts being allocated to the companies best able to use them. A formal administrative process in which companies present their exploration and production plans (often known as a 'beauty contest') allows the government the flexibility to use a multitude of criteria in deciding who to allocate the contracts to, but there may be transparency issues with this process, particularly in a developing country context. Auctions are transparent and allow for a competitive bidding process, and are thus most likely to ensure that rights/contracts are allocated to the companies best able to extract the resources, though their effectiveness depends on how they are designed. The revenue-sharing arrangement adopted also affects the awarding process. When revenue sharing is primarily through the use of royalties, bidding tends to be over the bonus bid or the signature bonus, which is the payment made by the resource extraction company for the right to explore and develop the lot. When revenue sharing is primarily through the use of production-sharing contracts, companies tend to bid over the government's share of the resource profit, with companies offering the highest profit share to the government most likely to win the bid.

Resource revenue earned by the government also raises the issue of how best to spend and manage it. One strategy is to set up a natural resource fund comprising of resource revenue proceeds. A natural resource fund can function as a stabilization fund to cope with global resource price volatility.[56] Alternatively it can also function as a savings fund to spread out the earnings from a temporary resource boom over multiple generations, based on the permanent income hypothesis which posits that welfare is maximized by smoothing consumption over time. For developing countries facing capital constraints and high levels of foreign debt, though, a strategy of capital

Taxation. Ed. Philip Daniel, Brenton Goldsworthy, Michael Keen, and Charles McPherson. Washington, DC: International Monetary Fund, 2009; A. Prat and T. Valletti (2001). Spectrum Auctions Versus Beauty Contests: Costs and Benefits, *Rivista di Politica Economica*, vol. 91, issue 4: 65-114.

[56] L. Seymour (2000). East Timor's Resource Curse? *Far Eastern Economic Review*, 30; M. Skancke (2003). Fiscal Policy and Petroleum Fund Management in Norway, in J. Davis, R. Ossowski and A. Fedelino (eds.), *Fiscal Policy Formulation and Implementation in Oil-Producing Countries,* Washington, DC: International Monetary Fund: 316-18. Weinthal, E. and P. J. Luong (2006). Combating the Resource Curse: An Alternative Solution to Managing Mineral Wealth, *Perspectives on Politics* 4(1): pp. 35–53.

accumulation and debt cutting might be superior to having a savings fund.[57] In the absence of transparency, though, natural resource funds of any kind are prone to corruption and expropriation.[58] An alternative strategy therefore is to directly distribute a substantial proportion of the resource earnings to the citizens, so as to minimize opportunities for corruption and expropriation[59] and reduce the potential for cyclical booms and busts in government spending.[60] However, even in this case the state may continue to receive a significant share of the resource revenue through taxation,[61] so that the question of optimal revenue management remains.

Last but not least, effective governance of the extractive industry requires adequate institutional capacity.[62] As discussed earlier, the generation of a large revenue stream from the extractive industry can induce state institutions to become "distracted" by the question of how to distribute the revenue and hence erode the state's capacity to undertake long-term economic growth and investment.[63] Institutional capacity growth has thus been argued to be a key factor behind economic success, [64] including in particular the building up of legal and fiscal capacity.[65] At the same time, guarding against economic dimensions of the "resource curse" requires the state to have the administrative capacity to prudently manage the proceeds from the extractive industry (e.g. by setting up a stabilization fund to cope with global resource price volatility, or by engaging in cycles of saving and investment to

[57] F. van der Ploeg (2011). Natural Resources: Curse or Blessing? *Journal of Economic Literature*, American Economic Association, vol. 49(2), pages 366-420, June.
[58] Weinthal, E. and P. J. Luong (2006). Combating the Resource Curse: An Alternative Solution to Managing Mineral Wealth, *Perspectives on Politics* 4(1): pp. 35–53.
[59] X. Sala-i-Martin and A. Subramanian (2003). Addressing the Natural Resource Curse: An Illustration from Nigeria, National Bureau of Economic Research Working Paper 9804.
[60] B. Eifert, A. Gelb, and N. Tallroth (2003). The Political Economy of Fiscal Policy and Economic Management in Oil Exporting Countries, in in J. Davis, R. Ossowski and A. Fedelino (eds.), *Fiscal Policy Formulation and Implementation in Oil-Producing Countries,* Washington, DC: International Monetary Fund: 82-122.
[61] Michael L. Ross (2001). *Timber Booms and Institutional Breakdown in Southeast Asia*. Cambridge; New
York and Melbourne: Cambridge University Press.
[62] Rosser, A. (2006). The Political Economy of the Resource Curse: A Literature Survey, Institute of Development Studies Working Paper 268.
[63] T. L. Karl (1997). *The Paradox of Plenty: Oil Booms and Petro-States*. Berkeley and London: University of California Press.
[64] R. M. Auty, ed. (2001). *Resource Abundance and Economic Development*. Oxford and New York: Oxford University Press.
[65] F. van der Ploeg (2011). Natural Resources: Curse or Blessing? *Journal of Economic Literature*, American Economic Association, vol. 49(2), pages 366-420, June.

maximize long-term welfare from temporary natural resource windfalls, as discussed above). At a wider level, the absorptive capacity of the economy to handle revenue proceeds from extractive industries is a critical variable; for countries with limited absorptive capacity, for instance, a comparatively restrained investment strategy and monetary sterilization of resource revenues is often recommended even during boom periods.[66]

[66] Maria Sarraf and Moortaza Jiwanji (2001). Beating the Resource Curse: The Case of Botswana. World
Bank Environmental Economics Series 83.

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INDONESIA

COAL AND COPPER

COAL AND COPPER IN INDONESIA

Indonesia's mining sector has contributed a larger share to government revenue and GDP that any other Association of Southeast Asian Nations (ASEAN) countries.[67] Mining's contribution to Indonesia's GDP has become more pronounced in the past decade given the run-up in commodity prices. In 2000, approximately 3 percent of Indonesia's GDP could be accounted for by the mining sector. By 2007, this had increased to approximately 4 percent[68] rising to 12% by 2011.[69] Amongst her vast wealth in mineral resources, coal and copper are two particularly globally significant sectors: Indonesia is the world's largest exporter of thermal coal and the eighth largest copper producer, second in Asia's copper production only to China. This study concentrates on Indonesia's coal and copper because a look into the coal and copper sector in Indonesia can be expected to give a good sense of the whole of the extractive industries in the country.

Between 2001 and 2010, Indonesia's coal industry increased its output by 19.2 percent per year from 67 million tons in 2000 to 325 million tons in 2009, driven partly by strong growth in the region and increases in the price of steam coal over this period.[70] The value of coal output in 2006 was twice that in 2000.[71] In 2007, coal's revenue share was 70 percent of that year's US$6 billion total mining contribution. By this time, Indonesia supplied approximately 26 percent of the world's coal.[72]

Coal, the most polluting of the fossil fuels, is the world's most abundant fossil fuel with global proven reserves[73] of approximately 1,000 billion tones.[74] Coal also

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[67] Resosudarmo B. P, I. A. P. Resosudarmo, W. Sarosa, N. L. Subiman (2009). "Socioeconomic Conflicts in Indonesia's Mining Industry," in *Exploiting Natural Resources: Growth, Instability, and Conflict in the Middle East and Asia*, eds. R. Cronin and A. Pandya, The Henry L. Stimson Center.

[68] PricewaterhouseCoopers (PWC) (2008), "MineIndonesia 2007: Review of Trends in the Indonesian Mining Industry." Jakarta: KAP Haryanto Sahari & Rekan; CEIC Asian Data Base (Jakarta, 2008).

[69] Schonhardt, S (2012). "British Mining Firm Sues Indonesia for Asset Seizure," The New York Times.

[70] Agustina, C. D., E. Ahmad, D. Nugroho, H. Siagian (2012). "Political economy of natural resource revenue sharing in Indonesia," Asia Research Centre (ARC) London School of Economics & Political Science, Working Paper 55.

[71] US Commercial Service, "Indonesia: Coal Mining Equipment," available at http://commercecan.ic.gc.ca/scdt/bizmap/interface2.nsf/vDownload/IMI_8691/$file/X_4867069.pdf

[72] *Ibid.*

73 Proven reserves refer to reserves that can be extracted economically with existing technology.

[74] International Energy Agency (IEA) (2010). "World Energy Outlook 2010," *Annual Report*, OECD/IEA, Paris.

enjoys the status of being the most widely distributed fossil fuel.[75] Hence, despite its environmental drawbacks, coal has been a key fuel in the electricity generation mix across the world. Coal fuels approximately 40% of the world's electricity. In some large economies, the electricity sector's dependence on coal is much higher. For instance, South Africa Poland, China, India, and the United States (US) get 93%, 92%, 79%, 69%, and 49% of their electricity from coal as of 2010.[76]

The past decade has witnessed resurgence in the use of coal. From 2000 to 2011, the industry grew at a faster rate than any fossil fuel.[77] Furthermore, over this period, the international coal trade volumes doubled.[78] The most pertinent driver has been the macroeconomic performance of the non-OECD countries.[79] Fast-growing Asian countries, such as China and India, contributed significantly to the run-up in coal demand over the past decade given their growing appetite for coal-fired generation and inability to scale-up domestic coal production.[80]

This has led some analysts to believe that the growing needs of emerging economies are likely to ensure that coal remains a key component of the power generation mix in the foreseeable future, regardless of climate change policy.[81] However, others raise doubts as to coal's viability going forward. The biggest competition to coal's dominance in the electricity sector comes from natural gas, a much cleaner fossil-fuel.[82] Recent shale gas finds in the US have altered the economics of electricity production there.[83] These could be replicated in Europe and

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[75] *Ibid.*

[76] International Energy Agency (IEA) (2010). "Power Generation from Coal: Ongoing Developments and Outlook," *Information Paper*, OECD/IEA, Paris.

[77] Morse, R. K., L. Schernikau (2011), "Asia's Changing Landscape," World Coal, Special Report on the Potential for US Coal Exports to Asia.

[78] *Ibid.*

[79] The size of the Asian coal market is thrice that of Europe's. See Bayer, A. K., M. Rademacher (2012). "Seaborne steam coal market dynamics and future production costs," Resources Workshop, *Long-Term Costs and Reserves of Coal, Oil, & Natural Gas.*

[80] As of 2010, China and India account for 13.3% and 7% of global coal reserves respectively. See British Petroleum's Review of World Energy (2011), pg.30 (http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/pdf/statistical_review_of_world_energy_full_report_2011.pdf)

[81] IEA (2010), "Energy Technology Perspectives 2010," *Annual Report*, OECD/IEA, Paris; International Energy Agency (IEA) (2010). "World Energy Outlook 2010," *Annual Report*, OECD/IEA, Paris.

[82] Compared to the average air emissions from coal-fired generation, natural gas produces half as much carbon dioxide, less than a third as much nitrogen oxides, and one percent as much sulfur oxides at the power plant. See the US Environmental Protection Agency's (EPA) note on the subject: http://www.epa.gov/cleanenergy/energy-and-you/affect/natural-gas.html#footnotes

[83] Chediak, M., J. Johnsson (2012). "Electricity Declines 50% as Shale Spurs Natural Gas Glut," Bloomberg. http://www.bloomberg.com/news/2012-01-17/electricity-declines-50-in-u-s-as-shale-brings-natural-gas-glut-energy.html

Asia, notably in China, which is purported to have the largest shale reserves in the world.[84] Furthermore, coal producers, such as Indonesia, see a growing domestic demand for the commodity.

However, energy transitions occur on a generational time-scale. So although there are doubts as to the long-term future of the coal industry, coal will remain an important mineral resource in the short to medium term.

The Indonesian Mining Association (IMA) estimates the country's copper reserves to be approximately 68.96 million tons.[85] As of 2007, Indonesia had the seventh largest copper reserves in the world.[86] In terms of production, Indonesia ranks as the eight largest copper producer globally[87] and Asia's second-biggest copper producer after China.[88] This is in part due to the scale of production from the PT Freeport's Grasberg mine, the third largest copper mine in the world,[89] in Papua.[90] The majority of the copper deposits are found in Ertsberg and Grasberg, Papua and Sumbawa Island, West Nusa Tenggara.

[84] Hall, S. (2012). "Shale Gas May Hold Promise For China," The Wall Street Journal. http://online.wsj.com/article/SB10000872396390443437504577544910500662588.html

[85] Djoko W., A. Irwandy (2011). "The Indonesian Mineral Mining Sector: Prospects and Challenges," German-Indonesian Mining Technology Symposium 2011.

[86] Reserves refer to the resource that can be extracted economically with existing technology. This is distinct from the concept of mineral resources which indicate the geologically available quantities of a mineral.

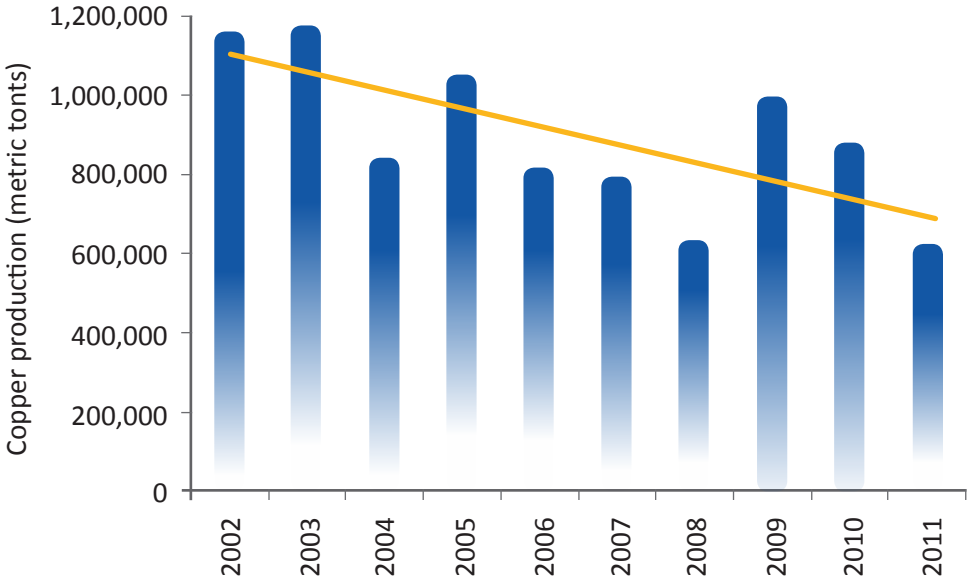
[87] Global Business Reports (2012). "Mining in Indonesia," Engineering and Mining Journal, July 2012.

[88] Rusmana, Y., F. Wulandari (2012). "Power Dearth Threatens Indonesia Smelter Bids: Southeast Asia," Bloomberg News, 23 July 2012. Accessed at http://www.businessweek.com/news/2012-07-22/power-dearth-threatens-indonesia-smelter-bids-southeast-asia.

[89] Copper ore was discovered in the area in 1936 (Please refer to http://earthobservatory.nasa.gov/IOTD/view.php?id=5718)

[90] Of the 818,000 metric tons of copper produced in Indonesia in 2006, 610,800 metric tons came from the Grasberg mine. See The Mineral Industry of Indonesia in 2010, United States Geological Survey (USGS) Mineral Resources Program, and "Grasberg Open Pit – Specifications," Mining Technology.

Figure 2.1 Annual Indonesian copper production (2002–2011)



Source: The Mineral Industry of Indonesia in 2010,
United States Geological Survey (USGS) Mineral Resources Program

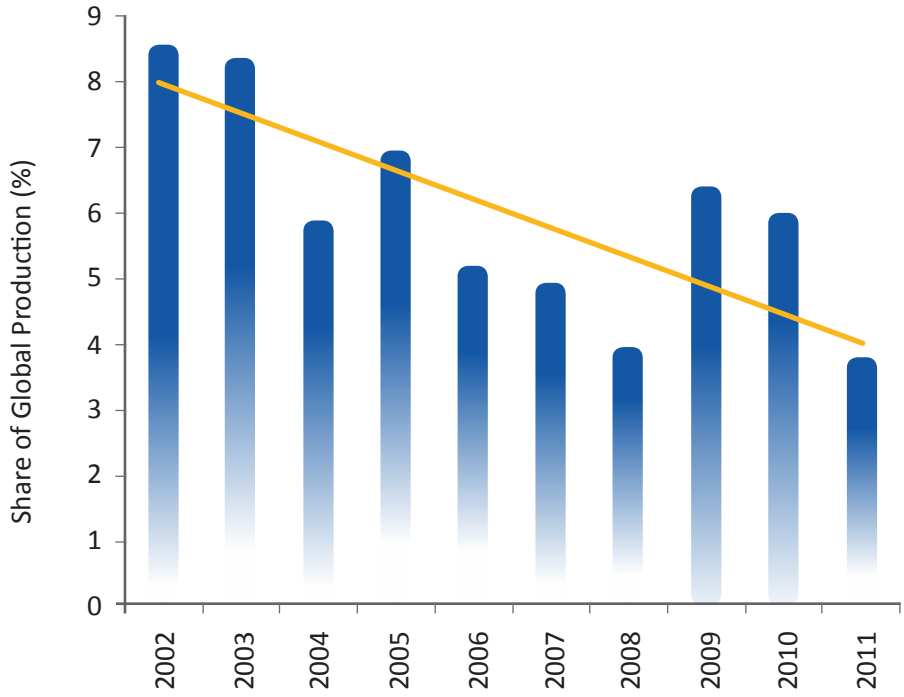
Between 2002 and 2011, Indonesia's copper output fell by nearly 54%, from 1,160,000 metric tons to 625,000 metric tons (see Figure 2.1 above). This implied a nearly 6.6 percent decrease in copper production per annum.[91] The targets of copper production for 2012 are set at 674,000 tones, according to data from the Directorate General of Mineral and Coal at the Energy and Mineral Resources Ministry.[92] This is in the region of copper production in 2011.

Over this period, world production of copper grew approximately 1.8% per annum.[93] This means that Indonesia's share in global copper production has been steadily declining over the last decade. In fact, Indonesia's share in global copper

[91] The Mineral Industry of Indonesia in 2010, United States Geological Survey (USGS) Mineral Resources Program; author's calculations.
[92] Antara News Agency (2012). "Indonesia's Copper Exports Projected At 431,000 Tonnes This Year," 29 June, 2012.
[93] United States Geological Survey (USGS), Mineral Commodity Summaries 2006, 2008, 2010, and 2012; author's calculations.

production has more than halved, being 8.5 percent in 2002 and 3.9% in 2011.[94] Akin to the situation in crude oil, Indonesia's status as a major global copper producer is diminishing.

Figure 2.2 Falling share in global copper production (2002–2011)



Source: The Mineral Industry of Indonesia in 2010, United States Geological Survey (USGS) Mineral Resources Program**; author's calculations**

HISTORY AND EVOLUTION OF THE INDUSTRY

Indonesia's mineral industry has had a long history with records of records of tin and diamond production dating back to the 18th century.[95] The foundations of the present-day industry were laid by the Dutch, who undertook exploration and

[94] *Ibid.*

[95] van Leeuwen, T. M. (1993). "25 years of mineral exploration in Indonesia," In: M. Simatupang and B.N. Wahju (Editors), Indonesian Mineral Development 1992. IMA, Jakarta, pp. 151-220.

development between the 1840s and 1930s.[96] Small quantities of coal were mined in Kalimantan and Sumatra to satisfy demand for steam ships.[97] When marine fuel switched to petroleum around the 1940s, Indonesia's coal industry suffered a steep decline. Indonesia's coal industry struggled with the effects of cheap oil post World War II and after gaining independence from the Netherlands in 1945, Indonesia's anti-Western government headed by President Sukarno (1945–1965), who was the leader of the country's independence struggle, sought to discourage foreign investment in the country.[98] The mineral industry did not make much progress in the absence of much-needed infusions of foreign capital in the sector.

The ousting of Sukarno in 1965 by General Soeharto came as a turning point for Indonesia's mineral industry.[99] The new government sought to enact laws and regulations to improve Indonesia's status as an investment destination. Amongst these changes that the new leadership instituted was the opening up of the mining sector to foreign investors. The first companies that came to the country as a result of the Soeharto regime's new investor-friendly policies were primarily interested in prospects and mineral districts identified by the Dutch, including the Ertsberg copper prospect in Irian Jaya. [100] It was during this period that porphyry copper deposits were being sought out via large-scale reconnaissance surveys.[101]

Two laws enacted in 1967 in particular affected the mineral industry: the Mining Law (ML) (Law 11/1967) and the Foreign Investment Act (FIA) (Law 1/1967).[102] At the outset, there were two types of licenses. The first was the Contract of Work (COW). This was a direct, bilateral agreement between the Government of Indonesia (GOI) and the locally registered foreign mining company. It provided the foreign mining

[96] The Dutch found copper in Sumatera, Java, Sulawesi and Timor, but none of these occurrences were of economic significance. See Van Bemmelen, R.S. (1949). "The Geology of Indonesia," Vol. II, Economic Geology. Govt. Printing Office, The Hague.

[97] Aspinall, C. (2001), "Small-Scale Mining in Indonesia," Mining Minerals and Sustainable Development, International Institute for Environment and Development, Volume 79; Friederich, M., T.M. van Leeuwen (2002), "Coal Exploration in Indonesia."

[98] Schwarz, A. (2000). "A Nation in Waiting: Indonesia's Search for Stability," Boulder, CO: Westview Press.

[99] *Ibid.*

[100] van Leeuwen, T. M. (1994). "25 years of mineral exploration in Indonesia," Journal of Geochemical Exploration 50 (1994) 13-90.

[101] *Ibid.*

[102] The ML opened the industry to foreign investment allowing foreign firms to export their products. The FIA protected the interests of the foreign investors from expropriation and allowed them to repatriate their earnings.

company special law status,[103] exempting holders of his license from any changes in Indonesian general law that might occur after the COW was signed. In essence, the rights of the foreign mining company were well protected by the COW.[104]

The second type of license was the Kuasa Pertambangan (KP) which allowed local investors to participate in the mining industry. The KP granted exclusive mining rights within a mining area for a specific stage of the mining program. A KP could be issued by any branch of government — regency (by the regency head), province (by the governor), or the central government (by the minister of energy and mineral resources). The KPs were transferrable to other parties if the original holder of the KP could prove that the other party had the necessary financial strength and technical capability to carry the mining activities into commercial production.

Given its investor-friendly nature, the COW system was quite well received by investors.[105] However, the COW system slowly evolved into a system whereby the applicant was subjected to more onerous provisions. Over time the *Lex Specialis* was removed, various taxes were changed, there was a gradual increase in the amount of security deposit to be paid to the government, and divestment rules were altered. Over the life of the COW system, then, the pendulum swung from a broadly investor-friendly approach to mining (in the first five generations of the COW system), to one that was far less attractive to them.[106]

There was also a shift in the regulatory framework over this time period with regard to environmental stewardship. The Environmental Law of 1997 (Law 23/1997)[107] and Government Regulation 27/1999,[108] supported by the Decree of the State Minister for Environmental Affairs (Decree 17/2001)[109] specified the procedures for completing environmental impact studies and related studies for

[103] This is also referred to as *lex specialis*.

[104] Between 1967 and 1971, only one First Generation COW for copper (Ertsberg area) was signed. Construction of an open pit mine (named "Gunung Biji", the Indonesian term for Ertsberg) began in 1970 and production started in late 1972. In all, seven generations of COWs have appeared since 1967, each one placing more onerous provisions on the applicant than the generation before. See O'Callaghan, T. (2010). "Patience is a virtue: Problems of regulatory governance in the Indonesian mining sector," Resources Policy 35 (2010) 218–225.

[105] PricewaterhouseCoopers (2008). "Mine Indonesia: 10th annual review of trends in the Indonesian mining industry."

[106] O'Callaghan, T. (2010), *op. cit.*

[107] See http://www.vertic.org/media/National%20Legislation/Indonesia/ID_Law_Environmental_Management.pdf.

[108] http://www.fao.org/fishery/shared/faolextrans.jsp?xp_FAOLEX=LEX-FAOC036671&xp_faoLexLang=E&xp_lang=en.

[109] See http://storage.jak-stik.ac.id/ProdukHukum/DalamNegri/17.pdf.

mining projects. Two years after the passage of the Environmental Law, the Forestry Law (Law 41/1999)[110] was enacted. It prohibited open-cut mining in areas designated as — forest conservation or protection areas.

Companies adjusted to the operational changes that the environmental regulations necessitated.[111] However, the political shift towards decentralization of governance, which gave provincial governments a greater share of both decision-making authority on natural resources and revenues derived from their development and sale, did not occur without costs.[112] These changes were the consequence of a regime change, which saw the resignation of President Suharto in 1998. Referred to as the "Big Bang" decentralization process, the aim was to end the governance of Indonesia from Jakarta and redistribute power more equitably between regions. This took the form of two laws, the Regional Autonomy Act of 1999 (Law 22/1999)[113] and Law on Fiscal Balance between the Central Government and the Regions (Law 25/1999).[114]

This legislation provided the provincial governments with a greater share of both decision-making authority on natural resources and revenues derived from their development and sale.[115] While the "Big Bang" process provided new opportunities for participatory democracy, the speed with which it occurred left sub-regional governments ill-equipped to administer their economic and social duties. The lack of supervision of the regional governments by the Centre and unclear demarcation between Central and regional jurisdictions exacerbated the mismanagement of the extractive industry allowing for low levels of sub-regional governmental accountability and transparency.[116]

On 12 January 2009, the GOI passed the Mining Law (Law 4/2009)[117] in an effort to provide regulatory certainty and to encourage new investment in the Indonesian mining sector. The Mining Law and the mandated implementing regulations

[110] See http://www.rightsandresources.org/documents/files/doc_1767.pdf.
[111] Lucareilli (2010), op. cit.
[112] Embassy of Indonesia, Ottawa (2010). "Decentralization in Indonesia since 1999 – An Overview," September 7, 2010. Accessed at http://www.indonesia-ottawa.org/page.php?s=2010background.
[113] See http://www1.worldbank.org/publicsector/LearningProgram/Decentralization/Hofman2.pdf.
[114] These laws issued by Suharto's former Vice President Bacharuddin Jusuf Habibie and executed by subsequent governments (The Asia Foundation (2003). "Indonesia Rapid Decentralization Appraisal," Washington, D.C.: The Asia Foundation)
[115] Embassy of Indonesia, Ottawa (2010), *op. cit.*
[116] Goff, J. (2010). "The Future of Indonesia: Development Forecast 2030," INTS4601: Development Forecasting, Joseph Korbel School of International Studies, University of Denver, Colorado.
[117] http://coropendekar212.wordpress.com/2011/05/27/general-mining-in-indonesia-under-law-no-4-of-2009/

issued over the last five years have introduced significant changes to the mining regime. The most significant change is the abolition of the "contract" and "mining authorization" regime and the adoption of a simplified licensing regime. The Mining Law reduced the myriad of different licenses and mining authorizations required to get a mine to production. It introduced a simplified licensing system in the form of mining business license (IUP). These are available to both foreign and domestic investors and will be the most common license referred to by listed companies. The Mining Law only requires two licenses, one for exploration and one for production.

New mining licenses are to be awarded through a competitive auction process and no longer through direct applications. However, once a company is awarded an IUP exploration, it is guaranteed the right to an IUP production without needing to go through a new tender as long as it has fulfilled the terms of its exploration permit. Under the new law KPs and CCOWs would continue to be honored subject to certain adjustments being made. Also, KPs would have to be converted into IUPs and holders of existing CCOWs would be required to enter into amendment agreements with the government.

The new law requires that minerals are processed and refined in Indonesia and thus impacts the copper industry more so than coal. The new law requires that existing COWs are to comply with this requirement within five years. In addition, IUP/ IUPK holders will be able to process and refine the minerals of other IUP/ IUPK holders. The processing requirement seems to be based on the principle that governments have a policy interest in requiring value added as a precondition of exporting natural resources. Indonesia has so far been known as an exporter of natural resources, where the added value has taken place overseas. [118]

On 21 February 2012, the GOI issued Government Regulation (GR 24/2012).[119] It limits foreign ownership in mining concession companies to 49% by the tenth year of production. This is a dramatic extension of the divestment obligation contained in Government Regulation (GR 23/2010), which stipulates a maximum foreign ownership threshold of 80% from the fifth year of production. The divestment has to be made to the following Indonesian entities, in order of priority: central

[118] This situation is quite apparent in the case of the copper industry. So whilst the cumulative copper concentrates annual production by the two copper producers PT Freeport Indonesia Co. and PT Newmont Nusa Tenggara was 1,100 metric tons in 2010, the smelting capacity of PT Smelting Co. was 210 metric tons. See United States Geological Survey (USGS), Mineral Commodity Summaries 2006, 2008, 2010, and 2012; author's calculations.

[119] Please refer to http://www.gbgindonesia.com/en/main/legal_updates/the_impact_of_gr_24_2012_on_the_mineral_and_coal_mining_industry_in_indonesia.php

government, provincial, regional or municipal government, state or regional-owned company or a private national business entity.

Government Regulation (GR 24/2012) provides an exception to the 2009 Mining Law's absolute restriction on the transfer or assignment to another party of a mining business permit/special mining business permit (IUP/IUPK). It permits a transfer or assignment of an IUP/IUPK to an entity whose majority shares (i.e. at least 51%) are held by the transferor. These transfer provisions may, however, be subject to challenge in Indonesian courts as they conflict with the 2009 Mining Law, which is a higher ranking piece of legislation.

Table 2.1 Key points of distinction between the old and new regulatory regimes

	New Regime (IUP)	Old Regime (KP/COW)
Method to obtain concession	• Tender	• KP and COW granted by request
Licensing authority	• Minister of Energy and Mineral • Resources: Cross-province or offshore more than 12 miles • Governor: Cross-sector areas of regency/city, or offshore 4-12 miles • Regent/mayor: Regency/city, or offshore up to 4 miles	• KP: Mining right granted by the Regent (Bupati) • COW: Contract between the Government of Indonesia and an Indonesian limited liability company (which includes an Indonesian company with foreign shareholder)
Issued to	• Business entity (including an Indonesian company with foreign shareholder) • Cooperative • Individual	• KP: Indonesian individual or wholly Indonesian owned company • COW: Limited liability company (including an Indonesian company with foreign shareholder)

Type of license	• Exploration IUP/IUPK (covers general survey, exploration, feasibility study) • Production IUP/IUPK (covers construction, mining, processing & refining, transport & sales)	KPs issued for: • general research/survey • exploration • exploitation • processing and refining • transportation and sales • One COW covers all mining activities
Term	Exploration: • Metals: 8 years • Coal: 7 years Production: • 40 years	KP: • Exploration: 5 years (3+2) • Exploitation: 50 years (30+20) COW: • Pre-operating phase: 8-12 years • Production: 50 years (30+20)
Maximum concession area	Exploration: • Metals: 100,000 hectares • Coal: 50,000 hectares Production: • Metals: 25,000 hectares • Coal: 15,000 hectares	KP: • 1,000–10,000 hectares COW: • Minerals: 250,000 hectares • Coal: 100,000 hectares

Source: Harsono Hermanto Strategic Consulting (2009), "Corporate Briefing," February 2009.

GOVERNANCE OF INDONESIA'S COAL & COPPER

Over the past five decades, Indonesia's coal industry has undergone substantial changes. The political mood also seems to have changed with a greater emphasis being place on domestic content or localization of the industry. The laws that govern the industry are seen to be altered[120] under public pressure when the outcome, which in the case of coal mining is the predominance of foreign firms, is seen as

[120] Gale, B. (2012). "The 2014 Election Effect on Indonesia's Mining Law," Straits Times, 11 September, 2012.

undesirable.[121] And the solution is seen as being replacing the foreign coal mining firms by local ones. This has led to the perception that Indonesia is gradually moving towards resource nationalism.[122] So whilst other countries struggle with defining the objective function, the laws and regulations that govern Indonesia's extractive industry seem to have a coherent objective, namely to maximize the local content of the industry. However, this objective seems to be misdirected. A more welfare-enhancing objective would be the dynamic maximization of mineral revenue.

Indonesia's reputation as a business destination has long been viewed with much suspicion internationally on account of a continuous stream of news of rampant corruption and complex regulations.[123] Indonesia scores poorly on a several metrics that measure perceptions on these criteria. For instance, in 2011, Indonesia ranked 100 out of 183 countries in the Corruption Perceptions Index.[124] In 2012, the Indonesia was placed 129 out of 183 assessed economies in the World Bank's Ease of Doing Business assessment, which examines issues such as starting a business, enforcing contracts, and dealing with construction permits.[125]

The relatively poor assessment of Indonesia business environment carries over to its mining sector. In the latest Fraser Institute Annual Survey of Mining Companies,[126] Indonesia was placed in the bottom 10 scorers along with Honduras, Guatemala, Bolivia, Venezuela, India, the Philippines, Kyrgyzstan, Ecuador, and Vietnam on the Policy Potential Index (PPI). The PPI is a composite index that measures the effects of government policies on exploration.[127]

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[121] Hart, Oliver (2009). "Regulation and Sarbanes-Oxley," *Journal of Accounting Research* 47(2): 437-445.

[122] Rondonuwu, O., M. Taylor (2011). "Indonesia's nationalist push could scare off miners," Reuters, 11 June, 2011. (http://af.reuters.com/article/energyOilNews/idAFL3E7H81M320110608?pageNumber=1&virtualBrandChannel=0)

[123] Kolesnikov-Jessop, S. (2010). "Indonesia Builds Trust and Fights Corruption," The New York Times, 26 October, 2010.

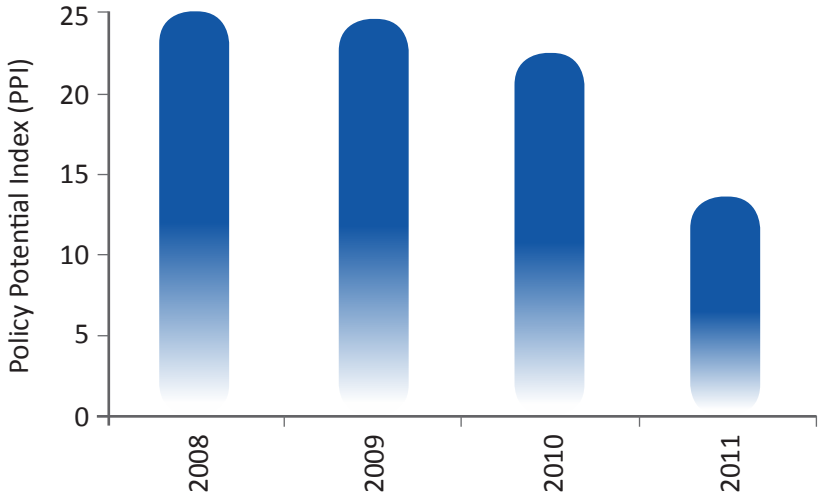
[124] The Corruption Perceptions Index ranks countries according to their perceived levels of public-sector corruption. The 2011 index draws on different assessments and business opinion surveys carried out by independent and reputable institutions. The lower a countries score, the greater is the perception of corruption in the country. Please see Corruption Perceptions Index (2011), *Transparency International* (Accessed at http://cpi.transparency.org/cpi2011/results/)

[125] For details of the methodology, please refer to http://www.doingbusiness.org/rankings.

[126] The Survey was sent to approximately 5,000 exploration, development, and other mining-related companies around the world. The survey, conducted from October 4 to December 23, 2011, represents responses from 802 of those companies.

[127] These include uncertainty concerning the administration, interpretation, and enforcement of existing regulations; environmental regulations; regulatory duplication and inconsistencies; taxation; uncertainty concerning native land claims and protected areas; infrastructure; socioeconomic agreements; political stability; labor issues; geological database; and security.

Figure 2.3 Indonesia's Policy Potential Index



Source: McMahon, F., M. Cervantes (2012). "Survey of Mining Companies," Fraser Institute Annual.

The PPI is an ordinal measure and calculated so that the maximum scores would be 100. [128] This means that the better the perception of a country's policy framework on exploratory activity the higher the rank. Figure 2.3 shows that Indonesia's PPI rank has been falling for four consecutive years. One can surmise from the graph Indonesia's new mining law has not been perceived as being especially positive with regards to exploratory activity.

In the following section, an assessment of the factors that affect the governance of Indonesia's coal and copper resources is undertaken.

QUALITY OF THE REGULATORY FRAMEWORK

LACK OF CLARITY

Regulations governing the extractive industry often lack clarity. Consider the case of Government Regulation 24 (GR 24/2012) which took effect on 21 February 2012. There is uncertainty as to whether this regulation applies only to new foreign investors, or to both new foreign investors and companies that already hold an IUP/IUPK. A crucial omission is the lack of transitional provisions that would provide

[128] McMahon, F., M. Cervantes (2012), *op. cit.*

definitive guidance on how GR 24/2012 impacts existing IUP/IUPK and CCOWs. Indonesia's Director General of Minerals and Coal stated that GR 24/2012 does not have retrospective application, in that it only applies to companies that hold IUP/IUPK issued after the issuance of GR 24/2012, and does not apply to existing contracts of work.[129] However, given the GOI's rapid change in divestment policies from that stated in Regulation (GR 23/2010), it is unclear as to whether such a statement will reassure investors.

The lack of clarity extends to GR 24/2012's silence on the penalties for non-compliance with the divestment requirement, the basis for calculating the price to be paid to a divesting foreign investor, and the mechanism for priority divestment procedure. Furthermore, clarity with regard to the new domestic market obligations (DMO) is lacking. A DMO is set for each calendar year as a percentage of total production that each mineral producer must make available to domestic customers. The actual DMO percentage is to be determined on an annual basis by the Ministry each June and made available to mining companies prior to the year in which it will be effective. Mining companies will need to incorporate the DMO percentage in their annual work program and budget, which must be submitted for the approval by the Ministry at the latest in November prior to the year it will be put into effect. However the main concerns surround the lack of contractual obligation on the part of buyers to take the DMO once offered and the lack of detail surrounding ore grade parameters. Also it has not establish a fixed tax regime for the life of the project, only stating that mining permit holders are subject to existing tax and royalty payments. This opens up the possibility that changes in taxation could become a major risk factor for mining companies.

REGULATORY COHERENCE

The alignment of policies in Indonesia has been a challenge. One reasons for this is that Indonesia "does not have a systematic mechanism to develop, monitor and evaluate laws/regulations or a centralized regulatory oversight body with 'whole of government' responsibility for regulatory policy."[130] The systems in place to promote alignment of policies in Indonesia are inadequate to coordinate policy among many central government agencies and potentially hundreds of local governments.[131]

[129] Fadillah, R. D. (2012). "Foreign mine ownership cap limited to new contracts," The Jakarta Post, 8 March 2012.
[130] OECD (2010), *op. cit.*
[131] Doshi, T. K., N. S. D'Souza, N. B. Zahur, B. Salim, R. Wong, T. Odgen, S. Mazouz (2012). "Regulatory

At a broad level this has contributed to the development of a large number of laws and regulations which are often overlapping, inconsistent, or conflicting. A case in point is Government Regulation 24/2012, which provides an exception to the 2009 Mining Law's absolute restriction on the transfer or assignment to another party of a mining business permit/special mining business permit (IUP/IUPK). These transfer provisions may, however, be subject to challenge in Indonesian courts as they conflict with the 2009 Mining Law, which is a higher ranking piece of legislation.

While the Ministry of Energy and Mining Resources has overall responsibility for regulating mining in the country, it is clear that there are coordination problems with other ministries. This is particularly the case with the Forestry Department.[132] Competing regulations and their interpretation continue to be a major problem for investors. This is evident from a recent Fraser Institute survey (2011) that rated Indonesia in the bottom ten for regulatory duplication and inconsistency.[133]

REGULATORY UNCERTAINTY

Indonesia is peculiar with regards to the manner in which laws and regulations are instituted. Typically, a ***law*** is first drafted. It is then followed by the ***implementing regulations*** that contain the specific details.[134] In many cases there is a time gap between the passage of the law and the accompanying implementing regulations. For instance, there is a space of three years between the passage of the Mining Law (Law 4/2009) and the Government Regulation (24/2012). Such a situation creates uncertainty for investors. There are dynamic welfare costs on account of an uncertain regulatory environment.[135]

Another example of regulatory uncertainty can be found in recent legislation. Under Mining Law (Law 4/2009), if the locally registered foreign companies operating under the COW want to extend their mining operations by a decade, the COW would have to be converted into a production permit six months prior to the expiration date of the COW. However, it not clear how such a transition will be treated by the Ministry of Energy and Mineral Resources given that under the COWs mining areas range from 25,000 and 140,000 hectares and under Mining Law

Reform: Case Studies on Green Investments," Policy Support Unit, APEC Secretariat, APEC.

[132] O'Callaghan, T. (2010), *op. cit.*

[133] McMahon, F., M. Cervantes (2012). "Survey of Mining Companies," Fraser Institute Annual.

[134] OECD (2010), *op. cit.*

[135] There is a substantial economics literature on the negative effect that uncertainty has on investment decisions. See Pindyck, R. S. (1990). "Irreversibility, Uncertainty, and Investments," MIT-CEPR 90-007WP, Massachusetts Institute of Technology.

(4/2009), companies operating under production permits will be limited to 15,000 hectares. Given the uncertainty as to how this will be resolved, the incentives of the companies under the COW to extend their operations would be quite low.

The recent Fraser Institute survey found that miners believe that there is a high degree of uncertainty concerning the administration, interpretation, and enforcement of existing regulations. [136] This view is also supported by an earlier survey conducted by the World Bank and the Asia Development Bank in 2003. This found that policy uncertainty was rated as the second most significant issue for investors in Indonesia.[137] In addition, decentralization has added new layers of bureaucracy into this complex picture.[138]

A good illustration of the uncertainty that companies face involves the Batu Hijau copper-gold mine operated by Newmont Mining Corporation's subsidiary company PT Newmont Nusa Tenggara (PT Newmont). The mine was owned by three companies: PT Newmont, Nusa Tenggara Mining Corporation, and PT Pukuafu Indah[139] with stakes of 45%, 35%, and 20% respectively.[140] Prior to production from the mine, the two foreign companies and the GOI agreed that the mine would be operated by the two foreign firms up until 2030, given that 51% of the mine was divested to Indonesian investors by 2010. It was also agreed that the GOI would be given the first offer to purchase the stake in the mine.[141]

When Newmont offered to sell 10% of PT Newmont to the GOI in 2006/07, the GOI declined the purchase citing a lack of funds. The local government then stepped in to purchase the stake; however, Newmont refused citing a lack of transparency as to the source of the funds. By 2008, since the requisite share of PT Newmont was not sold to Indonesian concerns, the GOI took the matter to the United Nations Commission on International Trade Law.[142] The Indonesian government had hoped that in arbitration Newmont would be found in breach of contract and would be required to turn over control of the company to the government without compensation. However, this did not happen. The United Nations Commission on

[136] McMahon, F., M. Cervantes (2012), *op. cit.*
[137] World Bank (2003). "Combating Corruption in Indonesia: Enhancing Accountability for Development," East Asia Poverty Reduction and Economic Management Unit, October 20, 2003.
[138] McMahon, F., M. Cervantes (2012), *op. cit.*
[139] This is an Indonesian firm.
[140] Wright, T. (2009). "Panel Affirms Newmont's Right to Run Indonesian Mine," The Wall Street Journal, 2 April, 2009.
[141] Selamat, F., E. Pranasidhi (2008). "Jakarta, Newmont Take Fight to U.N.," The Wall Street Journal, 4 March 2008.
142 *Ibid.*

International Trade Law declared that declared that Newmont would not have to turn over complete control of PT Newmont to the Indonesian government, but was still required to sell the 17% to the government (or a buyer designated by the government) as committed. Newmont was given 180 days to complete the sale.[143]

Another case from the coal sector that highlights the uncertainty that companies face involves the London-listed Churchill Mining[144] regarding its coal mining concessions in Busang, East Kutai regency in East Kalimantan. Churchill started exploring for coal in East Kalimantan in 2008, shortly after acquiring a 75 percent stake in four licenses awarded to the Ridlatama Group, an Indonesian company Churchill had worked with in exploring for thermal coal.[145] In May 2008, Churchill Mining found that it had found a substantial tranche of thermal coal, approximately 2.73 tons, making the site making the site the seventh-largest undeveloped coal mining asset in the world.

However, in a relatively short span of time after Churchill announced the project's substantial potential, Nusantara Group, a local company which originally held six licenses in the disputed area, was awarded extensions to these licenses, which Churchill believed had lapsed.[146] Churchill was then accused of conducted illegal logging activities in a forestry area and forging its mining licenses and holding licenses that overlapped with those previously issued to Nusantara.[147] Having exhausted all legal avenues available in Indonesia, Churchill brought the case to the International Centre for Settlement of Investment Disputes (ICSID) in Washington against the Republic of Indonesia. It is suing the GOI for US$ 2 billion in damages.[148]

Amid the allegations and counter-allegations, it is difficult to assess the validity of the claims of either the government or Churchill Mining. However, a reading through the chain of events does bring to mind another high profile case of the US firm Karaha Bodas, which was awarded more than $300 million from state oil firm PT Pertamina in 2007 after a prolonged legal battle over the termination of a

143 McDowell, R. (2009). "Newmont Told to Sell Shares in Indonesian Unit," Associated Press, 1 April, 2009.

144 Churchill has a market cap of about $19 million and listed on the London Stock Exchange's AIM in 2005. See Taylor, M. (2012). "Churchill Mining seeks $2 billion from Indonesia," Reuters, 12 April 2012.

145 Thermal coal is used in the production of electricity. Its demand has been rising recently on the back of increased demand from China and India. See Taylor, M. (2012). "Churchill Mining seeks $2 billion from Indonesia," Reuters, 12 April 2012.

146 Taylor, M. (2012). "Churchill Mining seeks $2 billion from Indonesia," Reuters, 12 April 2012.

147 Schonhardt, S (2012). "British Mining Firm Sues Indonesia for Asset Seizure," The New York Times, 6 June, 2012.

148 Siahaan, T. S. (2012). "Churchill Pursues Its Dreams of Coal Via Arbitration With Indonesia," Jakarta Globe, 27 September, 2012.

geothermal power plant project in the late 1990s.[149] Regulatory uncertainty is still a feature of Indonesian regulation.

Cases such as these highlight the issue of regulatory uncertainty, wherein companies cannot be sure as to how regulatory laws will be interpreted and applied. Attempts at expropriation can act as a dampener on investment in the mining sector.

ADMINISTRATIVE CAPACITY

The decentralization movement has not been a positive development for the governance of Indonesia's extractive industry. Decentralization has led to a greater number of civil servants coming in contact with the mining companies. This increases the probability of corrupt practices including bribes to facilitate approvals.[150] The increased autonomy has the effect of increased likelihood of illegal fees and taxes on mining companies. Decentralization has also given public officials access to provincial and local budgets. This has increased the prospect of officials acting inappropriately. Regional Autonomy Watch, for example, found a number of examples where local governments have been pursuing creative accounting practices.[151] Critics point out that regional governments lack the institutional capacity to administer their new responsibilities and lack of accountability for their actions.[152]

As a testament to a lack of administrative capability, there have been instances wherein local government officials issued export licenses to local entrepreneurs who lacked capability and experience, often without keeping any official record of the transaction.[153] Decentralization has resulted in several provincial and regency governments attempting to impose new official taxes and charges on miners

[149] Taylor, M. (2012). "Churchill Mining seeks $2 billion from Indonesia," Reuters, 12 April 2012.
[150] For instance, the governor of Papua granted PT Freeport, the operator of the third largest copper mine in the world, a permit in 1996 to use the rivers for its waste. This permit caused environmental damage that violated the criminal section of Environmental Law of 1997 (Law 23/1997). See Bonner, J. , J. Perlez (2005). "Below a Mountain of Wealth, a River of Waste," The New York Times, 27 December, 2005.
[151] Steele, A. (2004). "Indonesia's decentralisation law is causing headaches in Dusun Belido," Inside Indonesia.
[152] Fox, J., Adhuri, D., Resosudarmo, I. (2005). "Unfinished edifice or Pandora's box? Decentralisation and resource management in Indonesia," in *The Politics and Economics of Indonesia's Natural Resources*, ed. B. Resosudarmo, Institute of Southeast Asian Studies, Singapore: 92–108.
[153] Kosim, G., K. Haymon (2011). "A dream denied? Mining legislation and the Constitution in Indonesia," Bulletin of Indonesian Economic Studies, 47:2, 221-231.

operating in their administrative areas.[154] Lack of administrative capability is evident the number of overlapping licenses[155] awarded by local authorities. Local authorities also lack the capacity to supervise and ensure that regulations are being adhered to.

An investigative audit by the Supreme Audit Agency (BPK), which covered the state budget management for the 2010 fiscal year and the first half of 2011, was completed in December 2011. The audit covered coal mining activities and local administrations in South Kalimantan, East Kalimantan and Central Kalimantan. The audit revealed several overlapping concessions in Kalimantan that were primarily caused by lapses by the local administrations. As of March 2012, only 40.5 percent of 10,235 listed companies had received legally "clear and clean" statuses for their concessions. [156]

The audit revealed a lack of regulatory capacity, an essential feature of best practice regulation,[157] at the regional level to carry out supervisory duties. There were 329 mining companies on the island that had evaded paying royalties and permanent fees amounting to US$43.3 million and $10.4 million respectively in the 2010 fiscal year alone. With regard to the enforcement of environmental regulations, the audit found that 43 mining companies had not fulfilled technical and financial guarantees related to compulsory reclamation and post-mining rehabilitation.[158]

Combined with the limited capacity of regional governments to enforce mining regulations, the entry of unqualified investors lacking technological, technical, and financial competence[159] could result in sub-optimal exploitation of Indonesia's

[154] However, strong support from the Central government ensured that the new provincial and local tax laws were rescinded (see Lucareilli (2010), *op. cit.* pg. 48). However, this is not to say that the central government has not attempted to extract larger revenues from the industry. For instance, Government Regulation (GR 144/2000), which changed a long-standing government tax policy allowing coal producers to recover the VAT (value-added tax) that they paid for their inputs from VAT that they had previously charged to their customers.

[155] Licenses are said to be overlapping if a same concession has been awarded to different companies.

[156] Widhiarto, H. (2012). "No checks on coal exploitation," The Jakarta Post, 30 April 2012.

[157] OECD (2011). Draft OECD Recommendation on Regulatory Policy and Governance, OECD, Paris.

[158] *Ibid.*

[159] As per Government Regulation 23/2010, mining licence holders are deemed to be qualified if the satisfy the following three criteria: (1) they have a minimum of three years experience in the mining or coal industries, (2) they employ one mining and/or geological expert with a minimum of three years experience, and (3) they have annual working plans and budgets for four years of exploration activity. Essentially, a formal administrative process in which companies present their exploration and production plans (often known as a 'beauty contest') allows the government the flexibility to use a multitude of criteria in deciding who to allocate the contracts to. However, there may be transparency issues with this process, particularly in a developing country context.

mineral resources, extensive damage to the environment, and minimum revenue generation for the state.[160]

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Combined with the limited capacity of regional governments to enforce mining regulations, the entry of unqualified investors lacking technological, technical, and financial competence[164] could result in sub-optimal exploitation of Indonesia's mineral resources, extensive damage to the environment, and minimum revenue generation for the state.[165]

[160] Kosim, G., K. Haymon (2011), *op. cit.*
[161] Widhiarto, H. (2012). "No checks on coal exploitation," The Jakarta Post, 30 April 2012.
[162] OECD (2011). Draft OECD Recommendation on Regulatory Policy and Governance, OECD, Paris.
[163] *Ibid.*
[164] As per Government Regulation 23/2010, mining licence holders are deemed to be qualified if the satisfy the following three criteria: (1) they have a minimum of three years experience in the mining or coal industries, (2) they employ one mining and/or geological expert with a minimum of three years experience, and (3) they have annual working plans and budgets for four years of exploration activity. Essentially, a formal administrative process in which companies present their exploration and production plans (often known as a 'beauty contest') allows the government the flexibility to use a multitude of criteria in deciding who to allocate the contracts to. However, there may be transparency issues with this process, particularly in a developing country context.
[165] Kosim, G., K. Haymon (2011), *op. cit.*

ECONOMIC EFFICIENCY AND EQUITY CONSIDERATIONS

ECONOMICS OF SCALE

The Mining Law (4/2009) stipulates that mining licenses may be granted to "entities, cooperatives or sole proprietorships." Whilst the notion of equal opportunity is well-received, this policy is misdirected given the nature of mining. In particular, it needs to be understood that mining is a highly capital-intensive undertaking, subject to significant ECONOMICS OF SCALE . Such ventures are often risky, slow to yield results, and accompanied by significant social and environmental responsibilities. Only firms with considerable technical, economic and financial capability would be able to devise and carry out the long-term planning needed to mine a mineral deposit, or cluster of mineral deposits, efficiently.

The most efficient way to mine a large deposit is for a single management to draw up a long-term plan that covers the entire reserve, and that adheres to principles of sustainable development. Small-scale miners are unlikely to have the resources to formulate and commit to such a plan. So by keeping the inefficient producers and encouraging the participation by the most adept players the government will accelerate socio-economic development. This means relying on those investors that use state-of-the-art technology and that have access to the considerable amounts of capital that large-scale exploration activity requires.

For these reasons, it would seem sensible to limit the mining ventures of cooperatives and sole proprietorships to small, local deposits. Mining Law (4/2009) goes some way towards this, by allowing local residents, either as individuals or as groups, to obtain small-scale mining licenses over small areas of land, with limits on the amount of capital investment. However, the law should also preclude the possibility of large numbers of small-scale miners being allowed to exploit larger-scale deposits, as this would result in a failure to take advantage of scale economies. In fact, the issue of illegal mining, which is small-scale by nature, is a challenge in Indonesia.

DURATION OF PRODUCTION-OPERATION LICENSES

Mining Law (4/2009) stipulates that production–operation licenses are limited to an initial 20-year period, with the option of two 10-year extensions. This timeframe is 10 years shorter than was available under Mining Law (11/1967), introducing the possibility that the full value of a mineral deposit may not be recovered. A longer production–operation period would motivate license holders to set aside resources

to search for additional mineral reserves within their license areas. It would allow them to fully recover such deposits before reclaiming the land for other uses.

The shorter timeframe available to mining companies to maximize their returns from investment in exploration and development may prompt them to resort to the practice of "high grading," where the focus is on recovering only the highest-grade ore.[166] In most cases it is economic for mining companies to extract lower-grade ore in conjunction with higher-grade ore, given sufficient time to do so. Therefore, any move towards high grading would reduce the benefits from the mines in question for the Indonesian people. Precisely for this reason, this practice is prohibited in many countries through legislation that demands maximum economic recovery.[167]

A longer production–operation period would also enable mining companies to make longer-term commitments to local communities. A positive externality that can be obtained from a mining operation is that people living in adjacent areas benefit directly as a result of a mining company's corporate social responsibility projects, and through the development of forward and backward linkages with local businesses. Over an extended period, this type of community engagement can be a catalyst for socio-economic transformation in remote and less developed areas. In its current form, Mining Law 4/2009 does not sufficiently facilitate such long-term social transformation.

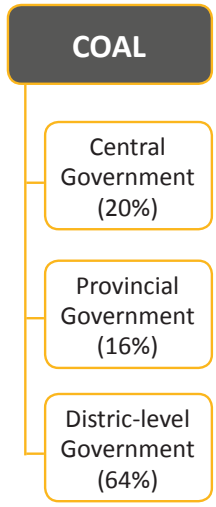
REVENUE MANAGEMENT

The fiscal decentralization framework in Indonesia requires the central government to share income from natural resources with the provinces and local governments. As per the Law on Fiscal Balance between the Central Government and the Regions (Law 25/1999),[168] the shared revenue from natural resources covers not only oil and gas, but also includes forestry, other general mining, geothermal, and fishery. In general, regional governments retain 80 percent of revenue from coal. Thus, there is an asymmetry between the revenue share going to the center and the local governments. See Figure 2.1.1 for the break-down in revenue sharing arrangement between the central and provincial governments.

[166] Lemieux, M. (2000). "Surface mine reserve definition and the high-grading fallacy," *Mining Engineering* 52 (2): 48–50.
[167] Hamilton, M. (2005). "Mining Environmental Policy: Comparing Indonesia and the USA," Ashgate, Aldershot.
[168] This laws issued by Suharto's former Vice President Bacharuddin Jusuf Habibie and executed by subsequent governments (The Asia Foundation (2003). "Indonesia Rapid Decentralization Appraisal," Washington, D.C.: The Asia Foundation)

Revenue from mining, particularly from land rent and royalty, is shared between central and sub-national governments. Of the land rent, 20 percent is allocated for central government, while the remaining 80 percent is shared by provinces (16 percent) and the producing districts (64 percent). The arrangement for the shared revenue from royalty is similar, with 32 percent for producing districts and 32 percent equally divided among the non-producing districts within the province. Aligned with the increase in mining revenue, revenue sharing from mining itself has been increasing over the years, reaching Rp 1.5 trillion for province and Rp 6.1 trillion for districts in 2010.[169]

Figure 2.4 Revenue sharing arrangement for coal



Source: Law on Fiscal Balance between the Central Government and the Regions (Law 25/1999)

In the case of coal mining especially, provinces have to play a role in monitoring and sanctioning illegal activities. When the revenue-shares accruing to districts and sub-districts are considered to be sufficient, illegal activities would be monitored and reported. However, the activities of local governments are not monitored with great stringency by the center.[170] Hence, there are incentives for local governments

[169] Agustina, C. D., E. Ahmad, D. Nugroho, H. Siagian (2012), *op. cit.*
[170] Widhiarto, H. (2012), *op. cit.*

to enter into "informal" contracts for mining activities. This usually translates into support for illegal mining by local governments who seek to maximize their revenues over and above what is accorded to them by law.

Coal producers have had to cope with unofficial tolerance by local governments of illegal mining activities within their coal concession areas. Illegal mining operations were estimated to have siphoned off 4 – 8 million tons per annum of coal from existing mines in 2004 and may have reached 20 mtpa between 2005 and 2008, with most of the illegally mined coal coming from operations adjacent to existing legal operations.[171] It would seem that a greater share in mining profits and regulatory capture sustain the existence of this activity. It is unclear as to whether greater asymmetry in revenue-sharing agreements between the center and the provinces will suffice to put an end to this practice.

DOMESTIC PROCESSING OBLIGATION (DPO)

Government Regulation (GR 24/2012)[172] issued by the Ministry of Energy and Mineral Resources prohibits the export of unprocessed raw materials or ore by IUP holders. Mineral raw materials will have to be processed in Indonesia, rather than being exported in a raw state. This regulation is seen as a move to develop the country's downstream mining industry, increase domestic revenues, and ensure availability of refined products for domestic use.[173]

The practical implications of the in-country processing requirement are challenging. At present Indonesia does not have sufficient smelters to process raw materials in-country, nor is it likely to have sufficient capacity by 2014. Herman Afif Kusumo, chairman of the Indonesia Mining Society (MPI), stated that given that it takes 4–5 years to construct a single smelting plant and its supporting infrastructure and large upfront capital expenditure, it was quite unlikely that plants operated either by mining companies or independent smelting firms would be ready to operate in 2014.[174]

Aside from the cost and time considerations to build the smelters, the lack of sufficient electricity generation capacity further militates against the DPO. In addition, there are technical issues related to building power plants for smelters given their operational characteristics. Smelting operations lead to sudden changes

[171] Baruya, P. (2009). "Prospects for coal and clean technologies in Indonesia," IEA Clean Coal Centre, CCC/148, June 2009, p. 33.
[172] Please refer to http://www.gbgindonesia.com/en/main/legal_updates/the_impact_of_gr_24_2012_on_the_mineral_and_coal_mining_industry_in_indonesia.php
[173] Harsono Hermanto Strategic Consulting (2009), "Corporate Briefing," February 2009.
[174] The Jakarta Post (2012). "Most miners unlikely to meet 2014 deadline," August 03 2012.

in electrical usage with sharp voltage fluctuations in a short period of time. Hence, a smelter needs to be powered by a specifically modified power plant. The head of the commercial division at state-run electricity company PT PLN noted that a mining company wanting to build a smelting plant outside Java would need an accompanying 100 megawatt power plant, which would cost a minimum of US$16 million to build and two years to complete.[175] It would seem that in some regions in the country, the lack of electricity to run smelters and the high upfront costs of building and operating smelters remain a serious issue even if the government were to provide fiscal incentives.

The DPO is thus turning out to be an expensive regulatory burden. The export restrictions imposed ahead of the 2014 export ban has caused a sharp decline in the country's nickel exports. In June 2012, for example, nickel ore export dropped by 80 percent to 572,106 tons from June 2012. Copper ore exports similarly declined 89 percent to 20,000 tons in June 2012. The Indonesian Chamber of Commerce and Industry (Kadin) has cited revenue losses of $106 million in revenues since the new mining regulations came into effect.[176]

TRANSPARENCY AND ACCOUNTABILITY

TRANSPARENCY

Best practice regulation requires that a transparent, user-centric approach to the regulatory process. This means that stakeholders are consulted in the policy formulation process and the information is made available to them at minimal cost. Evaluation of the transparency of the policy formulation and administration process requires careful analysis as to its inclusiveness, information access, and ease of understanding.

In the past, Indonesian regulations were not published in English, websites were out-of-date, and understanding the implications of the regulatory process was extremely difficult.[177] However, Indonesia has sought to make improvements and has established a formal law/regulation making framework through the National Legislation Program (Prolegnas).[178] Stakeholders are required to play an active role

[175] *Ibid.*
[176] *Ibid.*
[177] O'Callaghan, T. (2010), *op. cit.*
[178] The description of the steps involved in policy development is based on OECD (2010), "OECD

in this process. For example, relevant stakeholders such as political and civil society groups, academics, experts, and practitioners are invited to help prepare the text to support draft laws and regulations. Public comment is then sought on the draft proposal. The government has introduced more institutionalized public consultation processes for new policies and strengthened appeal processes.

However, many business associations do not have the capacity to effectively critique government proposals which may limit their influence over government policy.[179] In the case where input is provided, it not necessarily taken into consideration. A case in point is the drafting of the Mining Law (Law 4/2009). To improve investor confidence that fell with the increasing resource nationalism, the GOI responded proposed a new mining law. This move was enthusiastically welcomed by industry and actively supported the government's efforts to reform the mining regime. However, despite voluminous input from industry stakeholders and nearly six years of drafting (and an additional three and a half years of deliberation in parliament), Law 4/2009 does not satisfactorily address the many concerns of investors.[180]

ILLEGAL PRACTICES

Indonesia's Central Bureau of Statistics recorded average informal (or illegal) sector employment in mining from 1997 to 2002 as 324,000.[181] This figure was about 10 times higher than the average number of legal mining workers in the same period.[182] Overlapping authority and conflicts of interest between departments or even between the central and local governments in dealing with illegal mining problems have also played a part in this trend continuing over the years. For instance, in South Kalimantan, illegal miners received informal support from the district head (*bupati*).[183] One reason could be that the illegal miners have contributed more revenue to the region than the existing state-licensed mining companies. These

Investment Policy Reviews: Indonesia 2010," Paris.

[179] Otsuka et al. (2011), *op. cit.*

[180] Kosim, G., K. Haymon (2011). "A dream denied? Mining legislation and the Constitution in Indonesia," Bulletin of Indonesian Economic Studies, 47:2, 221-231.

[181] Heriawan, R. (2004). "Informal Sector Statistics and Supporting Surveys: Indonesian Experience," Paper presented at the 7th Meeting of the Expert Group of Informal Sector Statistics (Delhi Group), February 2–4, 2004, New Delhi.

[182] PricewaterhouseCooper (PWC) (2006), "mineIndonesia 2005: Review of Trends in the Indonesian Mining Industry," Jakarta.

[183] PricewaterhouseCoopers (PWC) (2008), "mineIndonesia 2007: Review of Trends in the Indonesian Mining Industry," Jakarta; CEIC Asian Data Base (Jakarta, 2008).

bupatis have openly granted mining authorization to local miners within the mining companies' concession areas.[184]

An example of the impact that illegal mining can have on production is the 40,000 tons of tin sand were produced by illegal mining in Bangka-Belitung in 2001, a similar amount to the production in the same year of a state-owned tin company, PT Timah.[185] With a world demand of 200,000 tons of tin per year, this illegal mining production certainly affected the stability of the world's tin prices and the company's financial performance.[186] This low productivity, illegal activity can thus substantially affect the finances of the State. Despite this, there is little being done to remedy the situation given poor incentives for local authorities to curb illegal mining.[187]

REGULATORY CAPTURE

In Indonesia, it would seem that political rather than efficiency concerns drive regulations and policy.[188] There is some evidence that regulatory capture as espoused by Stigler, [189] whereby industries or other interest groups organize and capture the regulators to raise prices, restrict entry, or otherwise benefit the incumbents, is rife in the country. A World Bank report asserted that Indonesia's forestry sector had been subject to "state capture." The report went on to say that bribes were paid to ignore rules related to forest over-exploitation and illegal logging.[190] As noted in the section on *Illegal Practices*, the local government heads (or *bupatis*), who serve as the regulators under the decentralized government set-up in Indonesia, are influenced by the revenue streams that illegal mining engenders. This makes them especially susceptible to capture.

Big mining corporations have been documented as seeking to indirectly influence regulators. For instance, Freeport-McMoRan, the operator of the Grasberg copper/

[184] Cronin, R., A, Pandya (2009). "Exploiting Natural Resources Growth, Instability, and Conflict in the Middle East and Asia," The Henry L. Stimson Center.
[185] Erman, E. (2007), "Rethinking of Legal and Illegal Economy: A Case Study of Tin Mining in Bangka Island," available at http://globetrotter.berkeley.edu/GreenGovernance/papers/Erman2007.pdf.
[186] *Ibid.*
[187] In Kalimantan, some NGOs criticized Indonesian police and military operatives for their support for and involvement with illegal mining under exploitative arrangements. See Murray, L. (2008). "Indonesia's army seeks to divest," Asia Sentinel.
[188] Gale, B. (2012). "The 2014 Election Effect on Indonesia's Mining Law," The Straits Times, 11 September, 2012.
[189] Stigler. G. J. (1971). "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science*, 2(1): 3-21.
[190] World Bank, (2003). "Combating corruption in Indonesia: Enhancing accountability for development."

gold mine in Papua, spent considerable effort to maintain good relations with the power that be in Indonesia. Current and former employees have noted that Freeport's erstwhile chairman, James R. Moffett, "assiduously courted" President Suharto and his team of advisors by having Freeport pay for their vacations, the education of their children, and involving them in deals that enhanced their private wealth.[191] It is this close relationship between the policymakers and Freeport[192] that led to the grant of a permit in 1996 that allowed Freeport to dump waste into the rivers during Suharto's regime. This permit caused environmental damage that violated the criminal section of Environmental Law of 1997 (Law 23/1997). The then Environment Minister took up the cause; however, in the absence of support from government agencies or cabinet members, the status quo was maintained.[193]

A factor that might exacerbate regulatory capture in Indonesia is its unique corporate landscape wherein a large proportion of companies are family owned. And the market value of these family concerns is amongst the highest in the world. In 1999, around 16.6 percent of the total market capitalization of the Bursa Efek Jakarta (BEJ)[194] was controlled by the Suharto family.[195] The likelihood of regulatory capture increases when such a concentration of wealth occurs.[196] Thus, a lack of transparency and accountability, the private interests of regulators/policymakers appear to take precedence in the formulation of policies that govern the mining industry rather than societal welfare.

Consider the case of London-listed Churchill Mining[197] and its coal mining concessions in Busang, East Kutai regency in East Kalimantan. A few weeks after Churchill had announced the massive size of its coal deposits, Nusantara Group, a

[191] Bonner, J. , J. Perlez (2005). "Below a Mountain of Wealth, a River of Waste," The New York Times, 27 December, 2005.

[192] Freeport was the first American company whose insurance had been cut off by the Overseas Private Investment Corporation (a United States government agency that insures American corporations for political risk in uncertain corners of the world) for environmental or human rights concerns in 1995.
It was a landmark decision, the first time that the agency had cut off insurance to any American company for environmental or human rights concerns.

[193] Bonner, J. , J. Perlez (2005), *op. cit.*

[194] Also known as the Jakarta Stock Exchange (JSX).

[195] Claessens, S., Djankov, S., Lang, L., (1999). "Who Controls East Asian Corporations," University of Chicago and World Bank.

[196] O'Callaghan, T. (2010), *op. cit.*

[197] Churchill has a market cap of about $19 million and listed on the London Stock Exchange's AIM in 2005. See Taylor, M. (2012). "Churchill Mining seeks $2 billion from Indonesia," Reuters, 12 April 2012.

local company which originally held six licenses in the disputed area, was awarded extensions to these licenses.[198] Accusations of illegal logging activities in a forestry area and forging its mining licenses were leveled at Churchill.[199] Nusantara Group is considered to be a politically connected group and one of its big shareholders is Prabowo Subianto,[200] the son-in-law of the former President Suharto.[201] He is considered as one of the front-runners in the 2014 presidential election.[202] Mr. Noor, the official who had extended Nusantra's expired licenses, did state that his friendship with the 2014 Presidential hopeful, Mr. Subianto, was not the reason he had revoked Churchill's licenses. He faulted Churchill for not having "developed a good working relationship with the local government."[203] Whilst establishing whether regulatory capture drove the actions against Churchill is difficult, the existence of close ties between the regulators and local businessmen raised the odds of it being a motivating factor.

Bumi Plc, which was listed on the London Stock Exchange in June 2011, was conceived by Nat Rothschild, corporate financier and scion of the Rothschild family, and Indra Bakrie, youngest of four siblings, owners of the Indonesian business group PT Bakrie & Brothers.[204] The Bakrie Group has business interests in agriculture (including palm oil), property, media, insurance, banking, trade, shipping, construction, manufacturing and mining.[205] Indra Bakrie's eldest brother, Aburizal Bakrie, is currently chairman of Golkar, the political party of the Suharto regime, and a potential presidential candidate for the Indonesian elections in 2014.[206]

The new mining law has brought about some difficult adjustments for the mining industry especially the foreign firms. Rules such as the divestment of majority control and taxes on exports of unprocessed minerals have been imposed raising the cost

[198] Taylor, M. (2012). "Churchill Mining seeks $2 billion from Indonesia," Reuters, 12 April 2012.
[199] Schonhardt, S (2012). "British Mining Firm Sues Indonesia for Asset Seizure," The New York Times, 6 June, 2012.
[200] Prabowo was the wealthiest presidential candidate in the 2009 election, with ownership of Rp 1.5 trillion (about US$ 150 million) and US$ 7.5 million. Please refer to http://mediacenter.kpu.go.id/berita/635-kpu-umumkan-harta-kekayaan-dan-dana-awal-kampanye-caprescawapres.html.
[201] Djojohadikusumo, Sumitro (2000). "Jejak Perlawanan Begawan Pejuang," Pustaka Sinar Harapan.
[202] The Jakarta Globe (2012)."Prabowo Receives Presidential Nod in 2nd Public Poll," 28 February 2012.
[203] Schonhardt, S (2012). "British Mining Firm Sues Indonesia for Asset Seizure," The New York Times, 6 June, 2012.
[204] London Mining Network (2012), *op. cit.*
[205] Jakarta Globe (2012). "Indra Bakrie lauds Bumi's London move," 19 November 2010.
[206] London Mining Network (2012), *op. cit.*

of doing business in the sector.[207] The argument put forth by the government is that it wants to add value to the mining sector by forcing companies to process locally. However, critics point out that no such requirement has been imposed on coal. Local processing of coal could improve its calorific content and thereby its value when sold on international markets. Bumi, by far the nation's largest coal exporter, would not be able to afford the investment required for local processing given the substantial debt obligations of the Bakrie conglomerate. Hence, the exclusion of coal from domestic processing obligations.[208]

[207] Please refer to http://www.gbgindonesia.com/en/main/legal_updates/the_impact_of_gr_24_2012_on_the_mineral_and_coal_mining_industry_in_indonesia.php

[208] Gale, B. (2012). "The 2014 Election Effect on Indonesia's Mining Law," Straits Times, 11 September, 2012.

1.1 COAL AND COPPER IN INDONESIA

Key Findings

- Indonesia ranks as the eight largest copper producer globally and Asia's second-biggest copper producer after China
- Since 1999, Indonesia began a decentralization program that that seeks to empower local communities. However, it has made governance of the extractive industries much more difficult.

Quality of the regulatory framework

- Regulations governing the extractive industry often lack clarity with Indonesia's latest mineral regulations lacking clarity on the penalties for non-compliance with the country's new divestment requirements, the basis for calculating the price to be paid to a divesting foreign investor, and the mechanism for priority divestment procedure amongst other issues.
- While the Ministry of Energy and Mining Resources has overall responsibility for regulating mining in the country, it is clear that there are coordination problems with other ministries.
- Regulatory uncertainty, wherein companies cannot be sure as to how regulatory laws will be interpreted and applied, is a major problem that investors face in Indonesia.
- Although governance has been decentralized, regional governments not yet developed the institutional capacity to administer their new responsibilities and lack of accountability for their actions.

Economic efficiency considerations

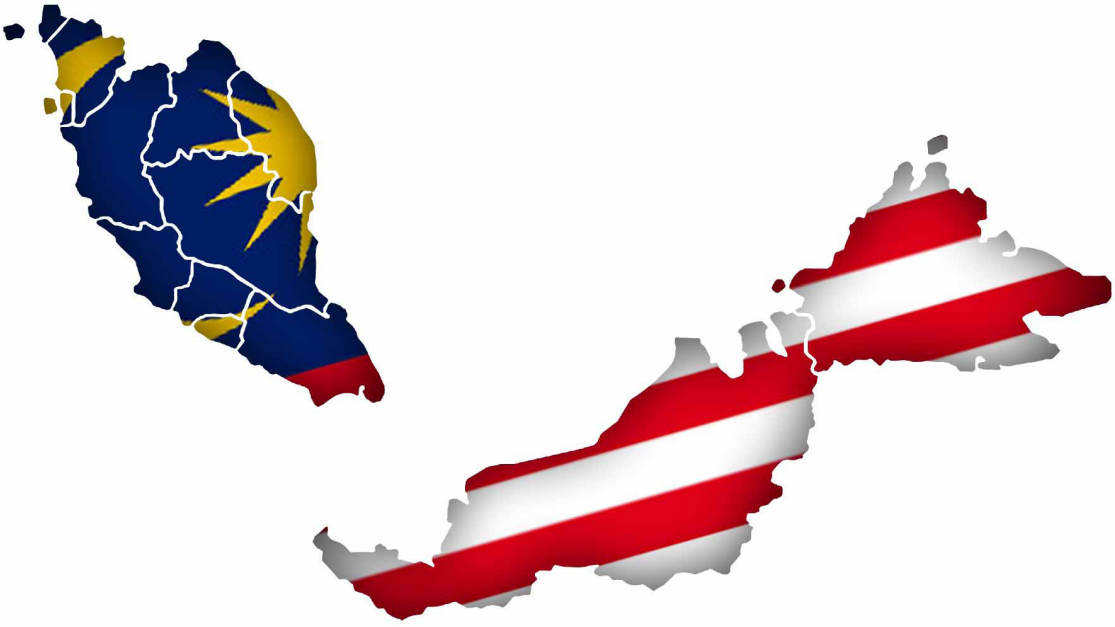
- Small-scale mining lacks ECONOMICS OF SCALE and hence needs to be curbed. The new mining law in principal agrees with this assessment but does not preclude small-scale mining. This complicates enforcement since illegal mining, which is usually carried out via small-scale operations, continues to affect the extractive industry.
- A longer production–operation period would motivate mining license holders to set aside resources to search for additional mineral reserves

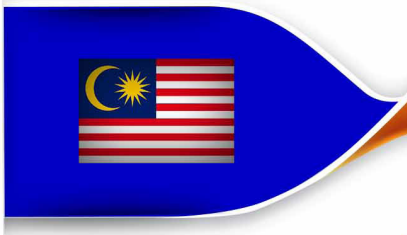
within their license areas thus maximizing the value of the resource. However, the new mining law has reduced the duration of mining leases.
- Revenue from mining is shared between the central and sub-national governments. Due to the lack of data, it is unclear whether this arrangement is optimal.
- Mineral raw materials will have to be processed in Indonesia, rather than being exported in a raw state. This regulation is seen as a move to develop the country's downstream mining industry, increase domestic revenues, and ensure availability of refined products for domestic use. However, in-country processing requirement are economically inefficient.

Transparency and accountability
- Indonesia has established a system whereby stakeholders are required to play an active role in the regulatory process. However, the recent roll-backs in mineral policy, such the mineral processing requirement, that were opposed by those outside government raises concerns regarding the extent to which the public consultation process affects policy formulation.
- Indonesia's decentralized governance structure has resulted in increased opportunities for regulatory capture as transparency and accountability are compromised.
- Overlapping authority and conflicts of interest between departments or even between the central and local governments in dealing with illegal mining problems have also played a part over the years

Recommendations
- Indonesia should raise the transparency with which the regulations are formulated. This will ensure that the variety of inputs received are able to identify the potential negative externalities generated via proposed regulations prior to their implementation however equitable they might appear in principal.
- Staff involved in the regulatory process need to be adequately trained to ensure technical competence and compensated well enough to lower the possibility of being incentivized to game the system.

- An institution that coordinates the regulations that affect the extractive industry should be set up. It should consist of technocrats from the energy, public finance, and planning ministries to ensure that the regulations are statically and dynamically efficient.
- There is a need for very clear guidelines as to the extent of the local government's regulatory authority. Given the vast mineral resources in the country, delay in this regard will be costly as although decentralization is a way to devolve power and might be considered equitable, it has had a negative impact on governance of the country's extractive industry.
- Regulations need to be clear and once in place, adhered to. Unevenness in the implementation of regulations will negatively affect investment in the extractive sector in Indonesia.





MALAYSIA

NATURAL GAS AND GOLD

NATURAL GAS AND GOLD IN MALAYSIA

Natural gas is the cleanest fossil fuel, a much cleaner fuel than coal.[209] Recent shale gas finds in the US have altered the economics of electricity production there.[210] These could be replicated in Europe and Asia, notably in China, which is purported to have the largest shale reserves in the world.[211] In 2011, world natural gas production grew by 3.1%, driven by rapid growth in production in the US.[212]

With concerns about climate change mounting, natural gas is fast emerging as the favorite fossil fuel of policymakers worldwide. The authoritative International Energy Agency (IEA), for instance, has predicted that the world may be entering a "Golden Age of Gas" in which natural gas plays an increasing role in the global energy mix, driven by the vast resource base, large unconventional resources and climate change concerns.[213] The IEA expects the share of natural gas in the global energy mix to increase to 25% by 2035, overtaking the share of coal by 2030. In the context of climate change, natural gas is viewed both as a "transition fuel" that can be relied upon as long as zero-emission technologies are not yet economically or technically feasible, as well as a "complement fuel" that can be used, for instance, as backup power for intermittent solar and wind power.

Within South-east Asia, natural gas is the main – and cleaner – alternative to coal in power generation. It is therefore critical for countries with natural gas resources to get their governance and regulatory regimes right. The two case studies we analyze here include Malaysia, which is one of the most important gas producers in the world, and the Philippines, which is a relatively small producer and essentially self-sufficient in gas. The lessons that can be drawn from a critical evaluation of their governance and regulatory regime are thus relevant for a wide spectrum of natural gas-producing countries.

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[209] Compared to the average air emissions from coal-fired generation, natural gas produces half as much carbon dioxide, less than a third as much nitrogen oxides, and one percent as much sulfur oxides at the power plant. See the US Environmental Protection Agency's (EPA) note on the subject: http://www.epa.gov/cleanenergy/energy-and-you/affect/natural-gas.html#footnotes

[210] Chediak, M., J. Johnsson (2012). Electricity Declines 50% as Shale Spurs Natural Gas Glut. Bloomberg. http://www.bloomberg.com/news/2012-01-17/electricity-declines-50-in-u-s-as-shale-brings-natural-gas-glut-energy.html

[211] Hall, S. (2012). Shale Gas May Hold Promise For China. *The Wall Street Journal*. http://online.wsj.com/article/SB10000872396390443437504577544910500662588.html

[212] BP (2012). BP Statistical Review of World Energy June 2012.

[213] IEA (2011). World Energy Outlook 2011: Are We Entering a Golden Age of Gas? Special Report.

Malaysia is a significant producer of natural gas, with 61.8 billion cubic meters of bcm of gas production in 2011, or 1.9% of the world total. It is the 3rd largest gas producer in the Asia-Pacific region after China and Indonesia. Malaysia is especially significant as an exporter of liquefied natural gas (LNG): in 2011, Malaysia was 2nd only to Qatar in terms of overall LNG exports. Malaysia also imported 2.0 bcm of gas from Indonesia in 2011. Gas consumption was 28.5 bcm in 2011; the remainder of the gas was exported either via pipeline to Singapore (2.3 bcm) or as liquefied natural gas (LNG) largely to Japan, South Korea and Taiwan (33.3 bcm).[214]

Unsurprisingly, the natural gas industry plays a fairly significant role in the Malaysian economy. The extractive industry accounted for 7.0% of the Gross Domestic Product (GDP) in 2010, and the sector's share of overall investment was 6.6%.[215] Most of this was accounted for by oil and gas exploration and production. The natural industry is especially critical as a contributor to government revenue, with PETRONAS, the national oil company in Malaysia which owns and administers all oil and gas resources in the country, contributing 35.4% of federal government revenue in 2007.[216] By 2011, PETRONAS accounted for up to 45% of federal government revenue.[217]

Table 3.1 Natural Gas production in Malaysia

Year	Production, billion cubic meters
2007	64.6
2008	64.7
2009	64.1
2010	62.6
2011	61.8

Source: BP (2012). Statistical Review of World Energy June 2012.

214 BP (2012). Statistical Review of World Energy June 2012.
215 Mines and Geosciences Bureau (2012). Mining Industry Statistics. September.
216 Centre for Public Policy Studies (CPPS) (2008). CPPS Policy Factsheet: Oil and Gas, August.
217 N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank. *Reuters*, 2 Jul.

Table 3.1 illustrates how natural gas production in Malaysia has evolved over the last few years. Though Malaysia remains a significant gas producer, gas production has declined slightly in recent years, from a historic peak of 64.6 bcm in 2007 to 61.8 bcm in 2011. Malaysia is facing a slump of production at many of its gas fields in offshore Terengganu, offshore Sabah, and offshore Sarawak, while domestic gas demand is expected to rise in the future. Malaysia's current strategy for dealing with the gas shortage involves continuing to service its natural gas export obligations (for instance, in March 2012 Malaysia announced plans to build a 9th LNG train at the Bintulu LNG complex) while planning to import LNG starting from 2014 to make up for the gas shortfall.[218] Malaysia has already completed construction of a floating regasification unit (FSRU) at Melaka, and plans to further boost its regasification capacity within the next 4 years.[219]

The production of natural gas is supported by the existence of significant natural gas reserves. As of 2011, Malaysia's proved gas reserves amounted to 2.4 trillion cubic meters (tcm) which is equivalent to 86.0 trillion cubic feet (tcf). As such Malaysia accounts for 1.2% of the world's proved gas reserves, and had the 15th largest gas reserves in the world in 2011.[220] Much of these reserves are found in Eastern Malaysia, especially offshore Sarawak.[221]

The major industry player in the natural gas industry is Malaysia's national oil company, PETRONAS (Petroliam National Berhad), which owns and administers all of the petroleum resources within the country (including natural gas). Malaysia had 27 fields producing natural gas as of March 31, 2008; major fields include Murphy Oil's deep water Kikeh field in offshore Sabah and PETRONAS Carigali's Blocks SK-309 and SK-311 in offshore Sarawak. A significant proportion of the gas fields in Malaysia were solely operated by PETRONAS through its subsidiary, PETRONAS Carigali. Most of the remaining fields were operated by foreign companies that had signed production-sharing contracts (PSCs) with PETRONAS. Significant gas reserves also exist in the Malaysia-Thailand Joint Development Area (JDA), which is divided into three blocks and administered by the Malaysia-Thailand Joint Authority

218 T. K. Doshi and N. B. Zahur (2011). *Prospects for Transpacific Energy Trade*. Supplement to the State Of The Region 2011-2012, Pacific Economic Cooperation Council, Singapore;World Gas Intelligence (2012). Malaysia's Bintulu LNG Surprise. 28 Mar 2012, 1-2.

219 Reuters (2012). Malaysia's Petronas approves floating LNG plant. 4 June 2012.

220 BP (2012), op. cit.

221 K. A. Rahim, A. Liwan (2012). Oil and gas trends and implications in Malaysia. *Energy Policy* 50: 262 – 271.

(MTJA), with the ownership of the petroleum resources in the JDA area divided equally between Thailand and Malaysia.[222]

Malaysia has significant reserves of bauxite, coal, gold, iron ore and tin.[223] The extractive industry accounted for 7.0% of the Gross Domestic Product (GDP) in 2010, and the sector's share of overall investment was 6.6%.[224] Most of this though was accounted for by oil and gas exploration and production. The value of major minerals produced in 2011 was RM 6.18 billion (USD 2.02 billion), a considerable jump from the RM 3.99 billion (USD 1.31 billion) produced in 2010.[225] Even so, this was only about 0.7% of Malaysia's GDP in 2011.

Table 3.2 Mining of gold in Malaysia

Year	Gold, mine output, Au content (in kilograms)
2006	3,497
2007	2,913
2008	2,489
2009	2,794
2010	3,766

Source: USGS (2012). The Mineral Industry of Malaysia. *2010 Minerals Yearbook,* U.S. Geological Survey.

Table 3.2 illustrates how gold production in Malaysia has evolved over the last few years. Malaysia is a tiny gold producer on the global stage, accounting for only 0.14% of global gold production in 2010.[226] However, as Table 1 illustrates, gold production increased sharply between 2008 and 2010, increasing by 12.3% between 2008 and 2009 and by 34.7% between 2009 and 2010. In 2012 Malaysia's

222 Ibid.
223 DLA Piper (2012). Mining in the Asia Pacific: A Legal Overview.
224 Mines and Geosciences Bureau (2012). Mining Industry Statistics. September.
225 Business Times (2012). Malaysia's minerals sector set to grow. 24 August.
226 U.S. Geological Survey (2012). *Mineral Commodity Summaries*. January.

gold resources were valued at RM 2.6 billion (USD 0.85 billion) by the Malaysian Mineral and Geosciences Department.[227] Gold is considered the fastest growing mineral industry in Malaysia. Business Monitor International projects that the growth of the Malaysian mining industry over the next five years will be led largely by the gold mining industry.[228]

There are around 12 gold mines operating in Malaysia, all located in the states of Kelantan, Pahang and Terengganu; however, there are prospective gold deposits in several other states, such as Negeri Sembilan, Sabah and Sarawak. More than 90% of mined gold is from the state of Pahang, largely from the Penjom Gold Mine located in Kuala Lipis, Pahang. Penjom is the largest gold mine in Malaysia and produced 1.59 t of gold in 2010, over 40% of Malaysia's total gold production in the year. Formerly owned by Specific Resources Malaysia (which is a wholly owned subsidiary of Avocet Mining of the United Kingdom), Penjom is currently owned by Indonesian based PT J Resources Nusantara.[229]

Peninsular Gold of the United Kingdom is another major gold mining company in Malaysia. It operates a gold mining project at Raub in the state of Pahang, which has 6.3 tons of gold and produced 485 kg of gold in 2010 (about 13% of total gold production in Malaysia). Peninsular Gold has also received approvals for its applications for two new tenements in the state of Pahang: Kg. Tersang, Mukim Batu Talam, in Raub (believed to have 31.2 tons of gold) and Sg. Tenggelan, Mukim Telang, in Lipis.[230] The mine expected to become Malaysia's biggest gold mine in the future (as the reserves in Penjom are depleted) is Selinsing gold mine in Pahang, owned by Canadian-based Monument Mining, with 7.18 tons of indicative gold resources and 12.07 tons of inferred gold resources.[231]

It is evident that foreign companies dominate the gold mining industry. This is not unique to the gold mining industry: 70% of the overall mining industry remains under foreign control.[232]

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[227] Business Times (2012), op. cit.
[228] Business Monitor International (2012). Malaysia Mining Report 2012. May 2012.
[229] USGS (2012). The Mineral Industry of Malaysia. *2010 Minerals Yearbook,* U.S. Geological Survey; Malaysianminerals.com (n.d.). Mineral Resources: Gold, accessed at http://malaysianminerals.com/mineral-resources.html.

[230] USGS (2012). The Mineral Industry of Malaysia, op. cit.
[231] BMI (2012), op. cit.; Monument Mining (2011). Selinsing. Accessed at http://www.monumentmining.com/s/selinsing_exploration.asp?ReportID=455376.
[232] South East Asia Extractive Industries Watch (2012). Malaysia. Accessed at www.eiwatch.org/country-profile/malaysia/.

EVOLUTION OF NATURAL GAS AND GOLD INDUSTRY AND REGULATORY FRAMEWORK

Historically the mining industry has been a key sector in Malaysia, playing a major role in the economy through much of the 20th century. The dominance of foreign mining companies is partly a function of the historical context, in particular the British colonial era. Many British firms that had arrived in Malaysia in the 19th century remain in the country till the present date. Malaysia was the world's premier producer of tin until the 1970s, as well as a major producer of bauxite and copper.[233] However, after many years of production, minerals such as tin, copper, bauxite, iron ore and barite have either been significantly depleted or there has been a reduction in the capacity to produce them.[234] Gold presents a different story. Unlike other minerals, the gold mining industry is still in the nascent stage, and production of gold is expected to rise in the near future. Even in the case of gold, though, the increase in production is expected to be driven by new mines; with the biggest mine (Penjom) expected to be completely depleted by 2018.

Governance of the gold mining industry involves a number of major stakeholders. Malaysia is a federation of 14 states and the state governments are key stakeholders, possessing and owning all minerals within their territory to the exclusivity of all others.[235] At the federal level, the mining and quarrying sector comes under the purview of the Ministry of Natural Resources and Environment (NRE). The Minerals and Geoscience Department (MGD), a department of NRE, directly oversees the governance and regulation of the mining industry. The Government also established a National Mineral Council (NMC) in 1998 to monitor the development of the mining industry to ensure that it met policy objectives, as well as to coordinate relations between the Federal and State governments.[236]

Given that states have ownership of mineral resources, the key regulations are at the state level. Each state has the power to make laws on mining permits and licenses.[237] In general, states have proceeded to do this by adopting State Mineral Enactments. 10 states have adopted State Mineral Enactments, namely Melaka (2001), Pahang (2001, updated 2005), Perak (2002, updated 2008), Negeri Sembilan

233 Malaysianminerals.com, op. cit.
234 USGS (2012). The Mineral Industry of Malaysia, op. cit.
235 DLA Piper (2012). Mining in the Asia Pacific, op. cit.
236 Malaysianminerals.com, op. cit.
237 DLA Piper (2012). Mining in the Asia Pacific, op. cit.

(2002), Kelantan (2003), Johor (2003), Kedah (2004), Sarawak (2004), Terengganu (2005), and Selangor (2007).[238] The State Mineral Enactment gives the state the authority to issue mining licenses, mineral prospecting and exploration licenses, and mining leases. Depending on the kind of tenement issued, the state can determine a royalty to be paid by the holder of a mining license or a mining lease to the state authority, while holders of prospecting licenses or exploration licenses have to pay an annual holding fee.[239]

Under State Mineral Enactments, *mining licenses* can be issued to individuals. These licenses are non-renewable, non-transferable and issued for one year. There are three types of mining licenses.[240] Fossicking licenses are issued to individuals who carry out prospecting for recreational or other non-commercial purposes. The holder cannot use power-operated equipment and is prohibited from selling the minerals obtained or utilizing them for commercial/industrial purposes, but does not have to pay any royalty or license fee. *Dulang* licenses allow the holder to sell the minerals extracted, but the use of power-operated equipment is prohibited and a royalty has to be paid. Individual mining licenses are similar to *Dulang* licenses except that power-operated equipment is permitted.

Prospecting licenses are issued for areas of at most 400 hectares, and are issued for a term not exceeding two years, while exploration licenses are issued for areas of at most 20,000 hectares for a term not exceeding ten years. These licenses provide for the exclusive exploration of minerals and the right to obtain and remove samples from the licensed area. The licenses are transferable and renewable; an annual holding fee has to be paid, and there is also a fee for application/renewal/extension of the license. Holders of prospecting or exploration licenses are given priority for the granting of mining leases in the areas covered under their licenses.

Mining leases give the lessee exclusive rights to mine the leased land, and are granted for the maximum economic lifetime of the mining operation with a limit of twenty-one years. The lease may be renewed for up to another twenty-one years subject to the application for renewal being approved by the state authorities. There

238 Mineral and Geosciences Department (MGD), Malaysia (2012). State Mineral Enactment. Accessed at http://www.jmg.gov.my/en/business/download-documents/cat_view/15-legislation-and-policy/137-state-mineral-enactment.html

239 DLA Piper (2012). Mining in the Asia Pacific, op. cit.

240 Legislature of the State of Pahang, Malaysia (2001). Pahang Enactment No. 7 of 2001: An Enactment to provide for mineral tenements and for purposes connected therewith. Accessed at http://www.jmg.gov.my/en/business/download-documents/cat_view/15-legislation-and-policy/137-state-mineral-enactment.html

is no area limit on mining leases, but mining can only commence after approval of an environmental impact assessment (EIA), a mine feasibility study and a plan for rehabilitation (for large-scale mining leases).[241] The lessee has to pay annual rent for the leased land, and must royalties to the state government. The royalty can be set as either a percentage of the market value of the minerals extracted or as an amount payable on the basis of the volume or weight of the minerals extracted, with royalty rates depending on the mineral commodity in question and the assessment of each of the individual states.[242]

The major legislation governing the mining industry at the federal level is the Mineral Development Act of 1994, which came into force in 1998.[243] The Act defines the power of the Federal Government to regulate mineral exploration, mining, and related activities, including the authority to conduct inspections.[244] Mining companies are also required by the Act to comply with an operational mining scheme that they are required to submit to the Federal Government for approval, and comply with good and safe practices and environmental standards.[245] In 2009, the Malaysian government launched the second version of the National Mineral Policy (NMP2).[246] The goal of the NMP2 is "enhance the contribution of the mineral sector to the socio-economic development of the nation through the efficient, responsible and sustainable development as well as the optimal utilization of mineral resources." The NMP2 focuses on sustainable development and optimum utilization of mineral resources, promotion of environmental stewardship, enhancement of the mineral sector's competitiveness and advancement in the global arena, promotion of the use of local minerals and promotion of recovery, recycling and reuse of minerals and metals. The NMP2 also proposed the establishment of a Malaysian Mineral Development Board as an effective coordinating body.[247]

The taxation of mining operations is governed by the Income Tax Act 1967 (Act 53). The Act allows for prospecting expenditure incurred during the process of searching, discovering or winning access to deposits of minerals to be deducted

241 Legislature of the State of Pahang, Malaysia (2001). Pahang Enactment No. 7 of 2001, op. cit.
242 Legislature of the State of Pahang, Malaysia (2001). Pahang Enactment No. 7 of 2001, op. cit.; USGS (2012). The Mineral Industry of Malaysia, op. cit.
243 Malaysianminerals.com, op. cit.
244 USGS (2012). The Mineral Industry of Malaysia, op. cit.
245 Laws of Malaysia (1994). Act 525: Mineral Development Act 1994.
246 Malaysianminerals.com, op. cit.
247 Ministry of Natural Resources and Environment (NRE), Malaysia (2009). National Mineral Policy 2.

from taxation.[248] The environmental aspects of mining development are regulated by the Environmental Quality Act of 1974 (Act 127) and its subsidiary legislation.[249] Under the NMP2, a mining lease application is required to include an Environmental Impact Assessment and an environmental protection plan that is approved by the Department of Environment under NRE.[250] The NMP2 also calls for the implementation of a Mine Safety and Health Management Plan by each mining operation.[251]

The development of the gas industry in Malaysia has its origins in the discovery of abundant gas reserves in offshore Sarawak, Sabah and Terengganu in the 1970's.[252] Plans to export natural gas in the form of LNG began in 1978 when PETRONAS, Shell BV and Mitsubishi signed a partnership agreement to undertake Malaysia's first LNG project. The first LNG plant was completed in Bintulu in 1982, and LNG exports began the following year.[253] Domestic utilization of natural gas came somewhat later, with the commencement of the Peninsular Malaysia Gas Utilization Project in 1984.[254] The project was completed in 1998, giving Malaysia one of the most comprehensive natural gas pipelines in Asia.[255]

Gas production in Malaysia increased rapidly around the time of the development of LNG export capabilities and domestic pipelines, from only 0.2 bcm in 1983 to 14 bcm only 3 years later in 1986. Thereafter, gas production increased at a steady pace through the remainder of the 1980s, the 1990s and the first half of the 2000s, before the slight recent decline. Gas consumption has also increased steadily over the same period, with especially large increases between 1999 and 2000 (from 16.1 bcm to 24.1 bcm) and between 2004 and 2005 (from 24.7 bcm to 31.4 bcm), though gas consumption has declined somewhat in the aftermath of the 2008 financial crisis.[256]

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[248] Laws of Malaysia (2006). Act 53: Income Tax Act 1967- Incorporating all amendments up to 1 January 2006. Accessed at http://www.agc.gov.my/Akta/Vol.%202/Act%2053.pdf.
[249] Malaysianminerals.com, op. cit.
[250] Malaysianminerals.com, op. cit.; NRE (2009). National Mineral Policy 2, op. cit.
[251] NRE (2009). National Mineral Policy 2, op. cit.
[252] PETRONAS Gas Bhd. (2012). History. Accessed at http://www.petronasgas.com/Pages/History.aspx.
[253] Malaysia LNG (2011). Our History. Accessed at http://www.mlng.com.my/aboutus-ourhistory.aspx.
[254] A. R. Samsuddin and M. S. Mohamed (2001). Peninsular Malaysia Gas Utilisation Project-Challenges in Gas Supply Planning. Conference Paper presented at SPE Asia Pacific Oil and Gas Conference and Exhibition, 17-19 April 2001, Jakarta, Indonesia.
[255] K. A. Rahim et al. (2012), op. cit.
[256] BP (2012), op. cit.

Governance of the natural gas industry involves a number of major stakeholders. Malaysia's national oil company, PETRONAS, owns and administers all of Malaysia's natural gas resources. PETRONAS is fully state owned, the only such company in Malaysia.[257] Exploration and production of natural gas is carried out either by PETRONAS directly (through its exploration and production subsidiary, PETRONAS Carigali), or by other companies that have signed Petroleum Sharing Contracts (PSCs) with PETRONAS. The Energy Commission of Malaysia is a statutory body in charge of regulating the energy sector, in particular the electricity supply and piped gas supply industries.[258] The downstream natural gas industry is also regulated by the Ministry of Domestic Trade and Consumer Affairs (MDTCA) and the Ministry of International Trade and Industry (MITI).[259]

The major legislative act governing the upstream natural gas industry is the Petroleum Development Act of 1974.[260] The major contribution of the Petroleum Development Act 1974 is to vest the entire ownership and exclusive exploration and exploitation rights of all onshore and offshore petroleum resources in Malaysia in the hands of PETRONAS, under the direct purview of the Prime Minister.[261] The 1974 Act was followed by agreements signed by each of the States granting PETRONAS exclusive rights in petro-chemical and petroleum industries within their borders; the last of these agreements was signed with the state of Sabah in June 1976.[262] Under these agreements, the States in which petroleum is found are entitled to a royalty equal to 5% of the revenue.[263] Subsequently, in 1976, PETRONAS signed Production Sharing Contracts (PSCs) with all the oil companies that had been operating in Malaysia.[264] Under the PSCs, PETRONAS retains ownership and management control in the exploration, development and production of petroleum resources. The PSCs specify the management of expenditure and profits, with

[257] K. A. Rahim et al. (2012), op. cit.
[258] The Official Website of Suruhanjaya Tenaga (2012). Overview of the Energy Commission. Accessed at http://www.st.gov.my/v4/index.php?option=com_content&view=article&id=2388&Itemid=1690&lang=en.
[259] M. R. Abdullah and M. R. Basirun (2011). Chapter 22: Malaysia. In Global Legal Group and Ashurst LLP (2011). *The International Comparative Legal Guide to Gas Regulation 2011: A practical cross-border insight into Gas Regulation* work. London: Global Legal Group.
[260] K. A. Rahim et al. (2012), op. cit.
[261] Laws of Malaysia (1974). Act 144: Petroleum Development Act 1974.
[262] B. Gale (1981). PETRONAS: Malaysia's National Oil Corporation. Asian Survey. Vol. 21 (11): 1129-1144, November 1981.
[263] M. R. Abdullah et al. (2011), op. cit.
[264] B. Gale (1981), op. cit.

the contractors assuming all the risks and sourcing all the funds and receiving an entitlement through production.[265]

In addition, the taxation of petroleum operations is governed by the Petroleum (Income Tax) Act 1967 (Act 543).[266] The income tax rate for the petroleum industry is 38% of the total assessed income, which is higher than the standard corporate tax rate of 25% in Malaysia (that is applicable to, for instance, mining companies).[267] The environmental aspects of natural gas development are regulated by the Environmental Quality Act of 1974 (Act 127) and its subsidiary legislation.[268]

Prior to 1974, exploration and production of natural gas (and other petroleum resources) was governed by the Petroleum Mining Act 1966.[269] The Act specified that the Petroleum Authority that can issue exploration licenses and petroleum agreements was the state governor (in the case of onshore resources) and the Prime Minister (in the case of offshore resources). The Petroleum Authority had the right to issue exploration licenses and petroleum agreements. In effect, this arrangement amounted to a concession-based system, with petroleum companies having complete freedom in the management of petroleum resources, and only paying taxes and royalties to the state government in whose jurisdiction they operated. Once the 1974 Petroleum Development Act was passed, though, exploration licenses or petroleum agreements issued under the 1966 Act lapsed within six months unless extended by the Prime Minister.[270]

In the downstream industry, PETRONAS operates the Peninsular Gas Utilization system through its majority-owned subsidiary, PETRONAS Gas Berhad, which is also in charge of pipeline gas exports to Singapore. The downstream natural gas industry is regulated by the Gas Supply Act 1993. The Act provides local guidelines for the licensing of the supply of gas for domestic consumers and for the price, installation and appliances in gas transportation and gas consumption. The Energy Commission enforces the Act and in particular is in charge of ensuring that the interest of the consumer is safeguarded.[271]

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265 I. R. M. Razalli (2005). The Malaysian Oil and Gas Industry: An Overview. *Juretera: The Monthly Bulletin of the Institution of Engineers, Malaysia*. No. 1, January.
266 Laws of Malaysia (1967). Act 543: Petroleum (Income Tax) Act 1967.
267 M. R. Abdullah et al. (2011), op. cit.
268 Laws of Malaysia (1974). Act 127: Environmental Quality Act 1974; Malaysianminerals.com (n.d.). Policy. Accessed at http://malaysianminerals.com/mineral-resources.html.
269 Note however that in Sabah and Sarawak, the Act was only applicable to offshore petroleum resources. Laws of Malaysia (1966). Act 95: Petroleum Mining Act 1966.
270 B. Gale (1981), op. cit.
271 M. R. Abdullah et al. (2011), op. cit.

As noted, Malaysia's natural gas revenues (and more generally petroleum revenues) are substantial, with a large proportion accruing to the federal government. As such, Malaysia passed the National Trust Fund Act in 1988.[272] The Act established a National Trust Fund (or Kumpulan Wang Amanah Negara) to be managed by Bank Negara Malaysia. The Act specifically highlights contributions from PETRONAS as well as contributions from the different States from royalties earned from exploitation of petroleum and other depleting resources, suggesting that the National Trust Fund in effect functions as a natural resource fund. PETRONAS generally contributes about RM 100 million (or USD 33 million) a year into the Fund, which as of 2008 amounted to RM 3.8 billion (or USD 1.2 billion).[273] In 2011, however, in a year of high oil prices, PETRONAS contributed RM 1 billion (USD 370 million) into the fund, which as of December 31, 2011 stood at RM 4.8 billion (USD 1.8 billion).

GOVERNANCE
TRANSPARENCY AND ACCOUNTABILITY

TRANSPARENCY

The Revenue Watch Institute has constructed the Revenue Watch Index to measure and compare the information governments disclose about their oil, gas and mining industries, including payments to governments, contracts, regulations and related data.[274] Malaysia is among 41 countries whose extractive industries have been evaluated and ranked by the index. The overall country score for Malaysia is 48.4, and Malaysia ranks 22nd out of the 41 countries. This puts Malaysia in the second tier of countries (i.e. countries exhibiting only scant revenue transparency).[275]

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[272] Laws of Malaysia (1988). Act 339: National Trust Fund Act 1988.

[273] CPPS (2008). CPPS Policy Factsheet: Oil and Gas, op. cit.

[274] Revenue Watch Institute (RWI) and Transparency International (2010). *2010 Revenue Watch Index- Transparency: Governments and the Oil, Gas and Mining Industries*.

[275] In all the 41 countries selected, the extractive industry plays a major role in the economy. The countries are ranked and placed in three categories: countries with comprehensive revenue transparency, those with partial revenue transparency and those with scant revenue transparency. The countries with comprehensive revenue transparency are (in descending order of their index value) Brazil, Norway, Russia, Mexico, Chile, Colombia, Kazakhstan, Peru, Azerbaijan, Ecuador, United States, and Timor-Leste. The countries with partial revenue transparency are (in descending order of their index value) Iraq, Venezuela, Trinidad and Tobago, Yemen, Liberia, South Africa, Bolivia, Papua New Guinea, Indonesia, Malaysia, Nigeria, Botswana, China, Gabon, Cameroon, Zambia, Sierra Leone, Mongolia, Sudan, Iran, and Angola. The countries with scant revenue transparency are (in

The Revenue Watch Index is an average of each country's score in different categories; delving deeper into how Malaysia ranks in each of these categories provides further insights into transparency in the Malaysian extractive industry.[276] Malaysia scores particularly well on the criterion "natural resource funds", which captures transparency with respect to the assets and transactions of any sovereign wealth funds specifically designed to capture some share of oil, gas and mining revenue. In the case of Malaysia, this refers to transactions and assets with respect to the National Trust Fund. Information on assets and transactions of the National Transaction Fund is available from the Bank Negara Malaysia as well as from PETRONAS itself.[277] Although Malaysia's overall score (considering the oil, gas and mining industries) is also low on the criterion "institutional setting" which looks at whether governments publish detailed legislation for their extractive industries, this does not appear to be justified when it comes to the natural gas industry. The full texts of all the relevant legislation for the natural gas industry (e.g. the Petroleum Development Act 1974, the Petroleum (Income Tax) Act 1967 and the National Trust Fund Act 1988) are available from the website of the Attorney General Chambers of Malaysia (AGC).[278]

In the Revenue Watch Index, Malaysia also scores reasonably well on the criterion "generation of revenue", which is applicable to the receipt of revenue at the federal level. However, it is more transparent with respect to data on operations (e.g. reserves, production volumes, companies operating, exports etc.) as opposed to data on financial payments received from production-sharing contracts.[279] The evaluation of the transparency of the latter is mixed. On the one hand, in recent years, there has been an increase in transparency with respect to how much revenue accrues from PETRONAS to the federal government. Starting from 2010, PETRONAS has begun detailing its contributions to the federal government.[280] In a recent comparative analysis of the transparency of major oil and gas companies by

descending order of their index value) Saudi Arabia, Ghana, Kuwait, Tanzania, Algeria, Democratic Republic of Congo, Equatorial Guinea and Turkmenistan.

[276] The seven categories are 1) access to resources 2) generation of revenue 3) institutional setting 4) state-owned oil, gas and mining companies 5) natural resource funds 6) sub-national transfers 7) implementation of Extractive Industry Transparency Initiative (EITI) criteria.

[277] World Bank (2012), op. cit.

[278] The AGC website is http://www.agc.gov.my/.

[279] Revenue Watch Institute (RWI) and Transparency International (2010). *2010 Revenue Watch Index,* op. cit.

[280] N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank, op. cit.

Transparency International, PETRONAS scored a high 85% in its reporting of financial data, transfers to the Malaysian government and operating data.[281] Moreover, how much revenue the government receives every year from oil and gas is also reported in the official budget documents, which are publicly available.[282] On the other hand, there is much less transparency with respect to how the government spends the revenue it receives from PETRONAS. The government's official budget documents, which are publicly available, reports the amount of oil and gas revenues the government received every year. Reuters has recently reported that when it placed an official request for information on how the revenue received from PETRONAS is spent by the federal government, the accountant general's office refused to disclose the figures and said that it could disclose all budgetary figures apart from PETRONAS's contributions.[283] This highlights the insufficient transparency of the Malaysian government with respect to the spending of natural gas revenue.

A related criterion set by the Revenue Watch Index is that of "state-owned companies", which describes the transparency of state-owned oil, gas and mining companies. Malaysia has a relatively low score in this criterion.[284] Similarly, in the analysis by Transparency International, PETRONAS was evaluated as below average in the category of "organizational disclosure", which looks at transparency with respect to subsidiaries, partners, fields of operation and accounts reliability.[285] PETRONAS's transparency is somewhat helped by the fact that it lists 4 of its subsidiary companies on the stock exchange; PETRONAS itself, however, is not listed.[286]

Moreover, Malaysia ranks very low in the Revenue Watch Index on the criterion "sub-national transfers", which measures transparency in revenue sharing between federal and local governments as well as disclosure of revenues received by sub-national governments from extractive industries. Malaysia also ranks very low on the criterion "access to resources", meaning that Malaysia provides little

281 Transparency International and Revenue Watch Institute (2011). *Promoting Revenue Transparency: 2011 Report on Oil and Gas Companies*.
282 CPPS
283 N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank, op. cit.
284 Revenue Watch Institute (RWI) and Transparency International (2010). *2010 Revenue Watch Index,* op. cit.
285 Transparency International and Revenue Watch Institute (2011). *Promoting Revenue Transparency,* op. cit.
286 Revenue Watch Institute (RWI) and Transparency International (2010). *2010 Revenue Watch Index,* op. cit.

information to its citizens and little public disclosure of major investments in the natural gas industry.[287] Transparency International has noted that PETRONAS is especially opaque when it comes to disclosures about investments made abroad in countries such as Indonesia.[288]

ACCOUNTABILITY

Accountability in the governance of Malaysia's natural gas sector is very limited. The Petroleum Development Act 1974 vests the ownership and exclusive exploration and exploitation rights of all onshore and offshore petroleum resources in Malaysia in PETRONAS. As such, there is no separate government agency in charge of regulating the upstream gas sector, with PETRONAS setting and enforcing procedures and processes for upstream development (such as the production-sharing process). As a national oil company rather than a regulatory agency, PETRONAS is not directly accountable to Malaysian citizens or the Malaysian Parliament. Instead, according to the Petroleum Development Act 1974, PETRONAS is directly accountable only to the Prime Minister of Malaysia.[289] This arrangement considerably limits the accountability of natural gas governance. Moreover, the 1974 Act does not specify any alternative route for public participation and/or public consultation in the governance of the natural gas industry. The Centre for Public Policy Studies in Malaysia has suggested that PETRONAS be made accountable to the Parliament as well in order to increase accountability and oversight. This would also have the effect of enhancing the transparency of natural gas development in Malaysia.

A further issue that has been highlighted by the World Bank is that PETRONAS is both the enforcer of the rules governing the market as well as a participant bound by the rules.[290] This creates a potential for a conflict of interest between these two roles that is ever-present and reduces the accountability of the regulatory regime since the institution charged with regulating PETRONAS is PETRONAS itself. An intuitive solution to overcoming the conflict of interest and enhancing

[287] Revenue Watch Institute (RWI) and Transparency International (2010). *2010 Revenue Watch Index,* op. cit.
[288] Transparency International and Revenue Watch Institute (2011). *Promoting Revenue Transparency,* op. cit.
[289] Laws of Malaysia (1974). Act 144: Petroleum Development Act 1974, op. cit.
[290] S. Tordo, B. S. Tracy and N. Arfaa (2011). National Oil Companies and Value Creation. *World Bank Working Paper No. 218.* Washington D.C.: The World Bank.

accountability is to set up a regulatory body that functions independently from PETRONAS and transfer some of PETRONAS's regulatory and licensing powers to this body, and indeed this is the strategy that has been adopted by a number of other countries with national oil companies (including Mexico's Pemex and Kuwait's KPC). However, such a solution can come at a high cost if the result is intrusive regulation by the independent regulatory body resulting in reduced operational efficiency and entrepreneurial freedom of the national oil company.[291] There is a consensus among petroleum-producing countries that the regulatory role should be distinct from operations, but no consensus exists as to whether this should be achieved through having separate departmental responsibilities (e.g. separate divisions within the national oil company) or by setting up a regulatory body that is a separate organization in itself.[292]

Governance of the mining industry is characterized by decentralization: although the federal government regulates all mining activities to a certain extent, the primary task of entering into mining tenements and collecting royalties falls to the state governments. This decentralized arrangement leads to enhanced accountability, since state governments are more likely to be responsive to the demands and needs of communities directly affected by mining operations compared to central governments.

In general, though, provisions for direct public participation and consultation are weak or non-existent, and accountability is limited. State Mineral Enactments provide for the establishment of a State Mineral Resources Committee, but the members of this Committee are from either the State Authority or from federal institutions such as the MGD; there are no representatives from affected communities. The State Mineral Resources Committee makes a number of key decisions that are likely to be of considerable import to local communities, including the approval of rehabilitation plans for large-scale mining projects, the decision to grant the license or lease, and the implementation of a variety of regulations. In particular, if the leased land is already owned and the land-owner refuses to give permission to the mining company to conduct mining operations, the State Authority has the discretion to issue an "access order" granting the mining company the right to conduct exploration and/or mining activities anyway. Moreover, the decision of the State Authority on this is final: at most the owner of the land can challenge

[291] Ibid.

[292] G. Lahn, V. Marcel, J. Mitchell, K. Myers, and P. Stevens (2007). *Report on Good Governance of the National Petroleum Sector.* London: Chatham House (Royal Institute of International Affairs).

the terms of the compensation in court.[293] The scope for public participation in the environmental impact assessment (EIA) process is likewise limited, with decisions being made largely by an Environmental Quality Council, though this Council does feature members from various affected industries, academia and environmental NGOs.[294]

CORRUPTION AND REGULATORY CAPTURE

Corruption and regulatory capture exist to a moderate though not severe degree in Malaysia. In Transparency International's Corruption Perceptions Index 2011, Malaysia ranked 60th out of 182 countries, higher than all other ASEAN countries except Singapore. Malaysia's index score of 4.3 is in the middle range between 10 (indicating a country perceived to be very clean) and 0 (indicating a country perceived to be extremely corrupt).[295] Since 2003, Malaysia has been active in implementing concrete anti-corruption measures, including revitalization of the Anti Corruption Agency, but the level of corruption has not noticeably declined.[296]

In their comparative analysis of the transparency of international oil and gas companies, Transparency International also evaluated how transparent companies are with respect to anti-corruption programs.[297] PETRONAS scored at 30% in this category, somewhat below the average score of 43%. However, the low rating does not by itself indicate the absence of anti-corruption programs within PETRONAS, merely that such programs were not publicly disclosed at the time. In March 2012 (after the Transparency International report was published), PETRONAS announced that it was collaborating with the Malaysian Anti-Corruption Commission (MACC) on an anti-corruption initiative, and also disclosed that anti-corruption policies formed part of its Code of Conduct and Business Ethics (CoBE).[298]

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293 Legislature of the State of Pahang, Malaysia (2001). Pahang Enactment No. 7 of 2001, op. cit.
294 Laws of Malaysia (2006). Act 127: Environmental Quality Act 1974. Accessed at http://www.agc.gov.my/Akta/Vol.%203/Act%20127.pdf.
295 Transparency International (2011). Corruption Perceptions Index 2011. http://cpi.transparency.org/cpi2011/results/.
296 N. A. Siddiquee (2010). Combating Corruption and Managing Integrity in Malaysia: A Critical Overview of Recent Strategies and Initiatives. *Public Organization Review*, Vol. 10: 153-171.
297 Transparency International and Revenue Watch Institute (2011). *Promoting Revenue Transparency,* op. cit.
298 PETRONAS (2012). Petronas Announces Anti-Corruption Initiative With MACC. Media Releases-2012, 14th March. Accessed at http://www.petronas.com.my/media-relations/media-

The governance structure for the natural gas industry lends itself to a risk of regulatory capture, whereby capturing immediate short-term gains (often political) is accorded priority over the long term interests of the country. PETRONAS has exclusive rights and power over Malaysia's natural gas resources. As noted earlier, there is limited accountability in the system, with PETRONAS effectively functioning as its own regulator. Moreover, PETRONAS is fully state-owned and there is a "symbiotic relationship" between the federal government and PETRONAS,[299] creating the potential for regulatory capture.

However, the empirical evidence generally suggests that regulatory capture has not occurred. For instance, a World Bank analysis argues that PETRONAS has not used its exclusive authority over the country's petroleum resources to capture immediate gains to the detriment of long-term development. Instead, PETRONAS's economic strategies of aiding the creation of forward and backward linkages and promoting self-sufficiency in energy, among others, is argued to have played an important role in the Malaysian economy, and the policies PETRONAS are more consistent with a strategy of long term value creation conducted in partnership with the federal government.[300]

Nonetheless the possibility of a future divergence between the objectives of the decision-makers and the broader objectives of the Malaysian economy as a whole cannot be discounted. For instance, a sizeable portion of PETRONAS's revenues is used by the federal government to subsidize fuel prices, a policy that distorts the market and has contributed to large budget deficits. Significantly, the government's current reluctance to reduce such subsidies in the short-run (the government has announced plans to eventually "rationalize" prices) appears to stem at least in part from electoral politics and the desire to avoid making a potentially unpopular decision prior to the next general elections (to be held by mid-2013).[301] Thus it is unclear whether the current governance structure of the natural gas industry will continue to achieve social objectives in the future the same way it has done in the past.

In the gold mining industry, illegal mining operations have been an endemic problem in recent years in the jungles of Gua Musang and Jeli in the province of

releases/Pages/article/PETRONAS-ANNOUNCES-ANTI-CORRUPTION-INITIATIVE-WITH-MACC.aspx.

[299] S. Tordo et al.(2011). National Oil Companies and Value Creation, op. cit.

[300] Ibid.

[301] N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank, op. cit.

Kelantan. The Malaysian Anti-Corruption Commission (MACC) has detained a number of workers for carrying out illegal gold mining operations. Given the scale of the activities, however, there is a distinct possibility that government officials have been involved, with the Kelantan government stating recently that it has not ruled out the possibility that some of its officials are "on the take" in the illegal mining operations.[302]

QUALITY OF REGULATORY FRAMEWORK:

GOVERNANCE PERFORMANCE

Internationally, PETRONAS generally has a good reputation for governance.[303] In a World Bank working paper evaluating the governance and performance of national oil companies, PETRONAS did not rank particularly high on a quantitative governance scorecard, primarily due to the extent of government involvement in the company and the absence of external checks and balances. However, the authors noted that the shortcomings in the governance structure did not have a significant impact on the actual governance performance of PETRONAS, which they rated positively. Competent management, close alignment of the objectives of the company, the government and the economy, and technical capabilities were argued to be key factors behind the successful governance performance of PETRONAS.[304]

REGULATORY CLARITY AND COHERENCE

In general, federal laws and regulations on mining appear to be fairly clear and coherent. There are relatively few federal regulations having to do with mining, with the primary legislation being the Mineral Development Act of 1994. In cases where there is regulatory overlap, there tends to be clarity on which Act takes precedence. For instance, the Mineral Development Act of 1994 allows the NRE to prescribe environmental protection measures and environmental standards or mining, but only subject to the condition that these do not conflict with any

[302] The Star Online (2012). Kelantan has not ruled out officials 'on the take' in gold mine operations. 23 July; New Straits Times (2012). Armed task force to fight illegal mining. 23 July.
[303] Ibid.
[304] S. Tordo et al.(2011). National Oil Companies and Value Creation, op. cit.

provision of the Environmental Quality Act of 1974.[305] Regulatory coherence is also enhanced by the fact that the objectives of PETRONAS and the federal government have generally been closely aligned,[306] leading to a largely consistent and well-harmonized regulatory approach.

However, because the upstream natural gas industry does not have a regulator as such, many of the relevant procedures (e.g. the process for production-sharing) are not encoded in law. This contributes to a certain lack of clarity with respect to how the unregulated aspects of natural gas exploration and production are governed. The Petroleum Development Act 1974 itself is mute on these issues and does not set any regulations or guidelines on the process by which licenses or contracts should be awarded, how revenue or production should be shared and how environmental impacts should be accounted for. The general lack of transparency in the governance of the Malaysian natural gas industry means that PETRONAS's own procedures for dealing with such issues is not always completely clear.

Regulatory coherence is more of a problem with state level regulations. In theory each state has the right to set its own regulations for mining; as a result of this arrangement, there is an ever-present risk of lack of regulatory alignment between the state and the federal level, as well as the problem of mining companies facing completely different sets of regulations when operating in different states. The latter problem has been to some extent ameliorated by the use of State Mineral Enactments, which follow a fixed template and specify well-defined and consistent rules and guidelines for mining operations. While states are free not to adopt State Mineral Enactments or to adopt them with significant modifications, most states in Malaysia have chosen to adopt State Mineral Enactments with only slight modifications. As such, the essence of the regulatory regime facing mining companies in Malaysia (as described earlier) does not vary dramatically from state to state.

Alignment between the federal government and state governments continues to be a challenge. The Mineral Development Act gives the federal government the right to conduct inspections, mandate compliance with a number of guidelines that it can set and implement fees and penalties for various offences, yet under State Mineral Enactments, the state authority retains similar rights.[307] Thus, mining

[305] Laws of Malaysia (1994). Act 525: Mineral Development Act 1994, op. cit.
[306] S. Tordo et al.(2011). National Oil Companies and Value Creation, op. cit.
[307] Laws of Malaysia (1994). Act 525: Mineral Development Act 1994, op. cit.; Legislature of the State

companies face two sets of regulatory regimes, one at the federal level and one at the state level, and it is by no means clear how any overlap or conflict is to be dealt with.

Malaysia has attempted to resolve federal-state coordination problems, for instance by setting up a National Mineral Council in 1998 in part to coordinate relations between federal and state governments. The State Mineral Resources Committee set up in each state under the State Mineral Enactment also includes several representatives from federal government institutions including the Mineral and Geoscience Department, the Department of Environment, and the Forestry Department Peninsular Malaysia, which should lessen alignment problems. However, evidence that coordination problems continue to be an issue in the governance of mining comes from the fact that the National Mineral Policy 2 of 2009 has called for the establishment of an "effective coordinating body" such as the "Malaysian Mineral Development Board."[308]

REGULATORY UNCERTAINTY AND FLEXIBILITY

In general Malaysia provides a favorable business environment for companies with low levels of regulatory uncertainty. For instance, in the World Banks's annual Ease of Doing Business assessment, Malaysia ranked 18th out of 183 assessed economies, rising up by five places compared to 2011. The Ease of Doing Business assessment examines issues such as starting a business, enforcing contracts, and dealing with construction permits.[309] In addition, Malaysia has had a fairly stable set of laws and regulations governing the natural gas industry, and frequent changes to regulations are uncommon. As such the regulatory uncertainty facing oil and gas companies is relatively limited.

However, the flip side to maintaining a stable regulatory environment is that it may entail a lack of regulatory flexibility. For instance, although various states have argued for an increase in the royalty payments they receive from petroleum (currently set at a 5% rate), the Malaysian federal government has till now refused to review the oil royalty policy, in part stemming from its reluctance to force PETRONAS to renegotiate contracts that it has already signed with foreign oil companies.[310]

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of Pahang, Malaysia (2001). Pahang Enactment No. 7 of 2001, op. cit.

[308] NRE (2009). National Mineral Policy 2, op. cit.

[309] For details of the methodology, please refer to http://www.doingbusiness.org/rankings.

[310] P. Lee (2012). No increase in oil royalty. *FMT News.* 25 September 2012; accessed at http://www.

On the other hand, PETRONAS has the flexibility to set the terms and conditions of the production-sharing contracts. As discussed subsequently, PETRONAS has utilized that flexibility to introduce new and often innovative incentives to increase investment in the petroleum sector.

While *regulatory* uncertainty is limited, *policy* uncertainty does exist. At the federal level, the government has emphasized its goals of expanding the mining industry and increasing its global competitiveness in its National Mineral Policy 2, and welcomes foreign investment in mining.[311] These policy goals have not been uniformly reflected at the state level. Many states have reportedly been less than forthcoming with issuing or approving mining leases and exploration applications, particularly when foreign investment is involved.[312] As such the federal government has been encouraging the states to issue more mining licenses.[313]

ADMINISTRATIVE AND TECHNICAL CAPACITY

As the World Bank has pointed out, there can be significant administrative and technical capacity constraints in the ability of governments to directly regulate and govern the natural gas (and more broadly the petroleum) industry. Because the government does not itself conduct natural gas exploration and production, it is at an informational disadvantage to the private players it is overseeing and moreover typically lacks the technical expertise and knowhow. As such, one of the main motivations for forming national petroleum companies is to reduce information asymmetries and build up the capacity and expertise needed to adequately monitor and regulate the industry.[314]

This certainly appears to be true for the Malaysian natural gas regulatory regime. Prior to the Petroleum Development Act 1974, there was a severe lack of technical expertise in the federal government, with the Minister for Primary Industries admitting that this put the government at a disadvantage when negotiating with oil companies. This occasionally led to strategic mistakes in negotiations with international oil companies, with the royalty rates offered based on inaccurate estimates of the reserves present. At the time of its inception in 1974 PETRONAS

freemalaysiatoday.com/category/nation/2012/09/25/no-increase-in-oil-royalty/.

311 NRE (2009). National Mineral Policy 2, op. cit.; DLA Piper (2012). Mining in the Asia Pacific, op. cit.

312 DLA Piper (2012). Mining in the Asia Pacific, op. cit.

313 Malaysianminerals.com, op. cit.

314 S. Tordo et al.(2011). National Oil Companies and Value Creation, op. cit.

faced similar issues, but by the late 1970s PETRONAS was well established and on its way to building up its technical expertise following a major recruitment drive and through the operation of a crash program to train Malaysians in the petroleum business.[315]

PETRONAS is currently one of the biggest petroleum companies in the world, ranking 19th in total revenues, 24th in oil output and 10th in gas output among the 50 major petroleum companies in 2004. PETRONAS is heavily involved in not just the upstream oil and gas sector but in the downstream refining and petrochemicals industries and the shipping industry as well, and has extensive operations abroad; the breadth of its activities indicates the technical capacity it possesses. Moreover, between 1980 and 2004 PETRONAS's manpower rose from 2,116 to 30,000 and PETRONAS's ratio of employees to sales is superior to that of other major companies such as Gazprom, Sinopec and Lukoil. Thus, PETRONAS has a high level of administrative capacity as well, although the possibility that it might be overstretched by its breadth of operations remains.[316]

ENFORCEMENT OF LAWS

Adequate law enforcement has recently been flagged as an issue in the gold mining industry. Law enforcement with respect to gold mining has been particularly weak in the state of Kelantan. Illegal gold mining has boomed in the state in the past year, resulting in a substantial revenue loss for the state government, and was only uncovered recently by the Malaysian Anti-Corruption Commission (MACC). Moreover, just the day after the MACC raided an illegal mining operation in Gua Musang and detained eight men, fifteen MACC officers were attacked by an armed group of people, allowing two of the detainees to escape. Two more detainees had to be released following threats by the group, and subsequently the Kelantan

315 B. Gale (1981), op. cit.

316 F. R. von der Mehden and A. Troner (2007). Petronas: A National Oil Company With An International Vision. *The Changing Role of National Oil Companies in International Energy Markets*. The James A. Baker III Institute for Public Policy, Rice University.

government was forced to set up an armed taskforce to stop illegal mining.[317] Illegal mining and associated law enforcement inadequacies appear to be less of a problem in other states of Malaysia; the state of Pahang (which accounts for most of Malaysia's gold production) has taken a number of measures to combat illegal mining.[318]

ECONOMIC EFFICIENCY AND EQUITY

REVENUE-SHARING ARRANGEMENTS

Revenue-sharing in the Malaysian natural gas industry is by way of production-sharing contracts (PSCs), taxes and royalties. Under the PSCs, PETRONAS retains ownership and management control in the exploration, development and production of petroleum resources. The PSCs specify the management of expenditure and profits, with the contractors assuming all the risks and sourcing all the funds and receiving an entitlement through production.[319]

Table 3.3 illustrates how production is shared in a typical production-sharing contract for gas fields operating at the present. A royalty of 10% on gross production is charged and the royalties are divided equally among the state government and the federal government. The limit on cost gas is 60%, meaning that the natural gas produced will be used to cover costs amounting to at most 60% of production. The remainder of the gas produced is profit gas to be shared between PETRONAS and the contractor on a ratio that varies between 50-50 and 70-30 for shallow water blocks and between 40-60 and 60-40 for deep water blocks. Petroleum income taxes (of 38%) are charged on the profits made by both PETRONAS and the contractor company and accrue to the federal government.

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317 The Star Online (2012). Kelantan has not ruled out officials 'on the take' in gold mine operations. 23 July; New Straits Times (2012). Armed task force to fight illegal mining. 23 July.
318 Illegal-Logging.Info (2009). Pahang undertakes measures to prevent forest encroachment. Accessed at http://www.illegal-logging.info/item_single.php?it_id=3297&it=news.
319 I. R. M. Razalli (2005), op. cit.

Table 3.3 Typical production-sharing contract for natural gas, Malaysia

TYPE OF PSC	Shallow Water Blocks (<200m)	Deep Water Blocks (> 2000m)
State Royalties (% of gross production)	5%	5%
Federal Royalties (% of gross production)	5%	5%
Cost Gas (% of gross production)	≤60%	≤60%
Profit Gas (min) (% of gross production)	≥30%	≥30%
PETRONAS share of profit gas Contractor's share of profit gas	*50-70%* *30-50%*	*40-60%* *40-60%*
Income Tax Rate on Profit Gas	*38%*	*38%*

Note: Whether the split of profits between PETRONAS and the contractor is 50-50 or 70-30 (40-60 or 60-40 in the case of deep water drilling) depends on the volume of production.

Source: F. R. von der Mehden and A. Troner (2007). Petronas: A National Oil Company With An International Vision. *The Changing Role of National Oil Companies in International Energy Markets*. The James A. Baker III Institute for Public Policy, Rice University.

The implications of the typical production-sharing contract outlined in Table 3.3 for revenue-sharing among the key players- the federal government; the state government, PETRONAS, and the contractor- are illustrated by Table 3.4 below. As the table illustrates, natural gas production-sharing contracts in Malaysia appear to perform fairly well from the perspective of maximizing rent extraction from natural gas exploration and production. Even when costs are as high as 60% of overall production, the federal government, the state government and PETRONAS (which is fully state-owned) combine to capture at least 30.7% of production. In a more favorable scenario, with 40% cost gas and a 70-30 profit split in favor of PETRONAS, over 50% of gross revenues accrue to Malaysia. In terms of risk-sharing, note that state government revenues are invariant to variations in the cost, while

federal government revenues vary according to the cost share but less so than rents accruing to the companies since fixed royalties form part of the government revenue.

Table 3.4 Implications of production-sharing contract for revenue-sharing in a shallow water block

	Cost Gas = 40%		*Cost Gas = 60%*	
	50-50 profit sharing	*70-30 profit sharing*	*50-50 profit sharing*	*70-30 profit sharing*
1. State's share of gross revenue	5%	5%	5%	5%
2. Government's share of gross revenue	24%	24%	16.4%	16.4%
3. PETRONAS's share of gross revenue	15.5%	21.7%	9.3%	13.0%
4. Contractor's share of gross revenue	15.5%	9.3%	9.3%	5.6%
5. Rent captured as share of gross revenue (=1+2+3)	*44.5%*	*50.7%*	*30.7%*	*34.4%*

Maximal rent extraction, however, could conflict with the objective of optimal development and growth of natural gas production, which requires adequate incentives for oil companies to sign production-sharing contracts with PETRONAS. However, there is little evidence to suggest that natural gas resources are being underutilized due to insufficient investment brought about by the structure of the PSCs, given that Malaysia is one of the largest gas producers and exporters in the world and PETRONAS has signed over 60 PSCs with international oil and gas companies.[320] In addition, PETRONAS has revised its PSCs and increased incentives for investment over time as the most profitable reserves have dwindled and increased focus has been placed on marginal gas fields. The limit on cost gas been

[320] von der Mehden and Troner (2007). Petronas: A National Oil Company With An International Vision, op. cit.

increased from as little as 25% in the mid-1970s to 60%, while E&P of deep water gas fields has been encouraged by specifying a greater profit share for contractors for such fields (as seen in Table 3.3). Moreover, in 1997 PETRONAS launched new agreements based upon "revenue over cost", which rewarded increases in project profitability by increasing the contractor's share accordingly, thus creating an incentive for investments to flow into the most profitable gas fields.[321]

It is also instructive to analyze the revenue-sharing between the three domestic players: the state government, the federal government and PETRONAS. The 5% fixed royalty rate clearly works out to the disadvantage of the state governments, which earns much less than the federal government in every scenario (and this is without accounting for dividends paid by PETRONAS to the federal government). At the end of the 2007 fiscal year, for instance, the total payments made by PETRONAS to the federal government was RM 62.8 billion; by comparison, the combined amount paid in royalties to the states of Terengganu, Sabah and Sarawak was only RM 4.8 billion.[322]

The lopsided revenue-sharing arrangement is of special political significance due to the historical context. Prior to the 1974 Petroleum Development Act, petroleum resources were largely owned by state governments, who thus had the power to negotiate petroleum agreements directly with oil companies. Thus the 1974 Act and the revenue-sharing arrangements that followed have not been favorably received by many of the states, in particular petroleum-rich Sabah. The fact that in 1976 the state governments signed agreements giving PETRONAS exclusive power over petroleum resources was more a result of party pressure and financial inducements rather than any intrinsic benefits accruing to the states from the new regulatory regime.[323]

The issue of revenue-sharing between the center and the periphery remains a politically contentious one. In 2001, several states sought higher royalties or payments from oil and gas revenues, and the party governing the state of Terengganu filed suit after being deprived of direct control of oil and gas revenues and instead receiving only funds for specific projects.[324] More recently, the state

321 Ibid.; G. R. Layungasri (2010). Comparative Study of Indonesian PSC and Malaysian PSC: Challenges and Solution. University of Dundee- Centre for Energy, Petroleum and Mineral Law & Policy (CEPMLP). May 14, 2010.
322 CPPS (2008). CPPS Policy Factsheet: Oil and Gas, op. cit.
323 B. Gale (1981), op. cit.
324 von der Mehden and Troner (2007). Petronas: A National Oil Company With An International Vision, op. cit.

governments of Kelantan, Sabah and Sarawak have requested a review of the current royalty rate, with an MP in Sabah demanding an increase in the royalty rate from 5% to 20%. However, in September 2012, the Prime Minister announced that there would be no increase in the royalty, citing the 1976 agreements on the 5% royalty and the fact that a royalty hike would require re-negotiations of existing contracts.[325]

Finally, there is also the question of revenue-sharing between PETRONAS and the federal government. Table 5.1.3 shows that the federal government captures more of the revenue than PETRONAS; the extent of the difference, though, is understated by Table 3.4, since the federal government also earns dividends from PETRONAS (being its only shareholder). These dividends can be significant: nearly 55% of PETRONAS's net profits in the fiscal year that ended on 31 March 2011 have been taken up by the federal government as dividends, whereas the average amount paid by national oil companies around the world is 38%. Including taxes and export duties as well, PETRONAS has estimated that its total payments to the Malaysian government amounted to RM 65.7 billion (US$ 24.5 billion) in that fiscal year.[326] The revenue-sharing arrangement between the federal government and PETRONAS is significant even though they have historically shared a close relationship, since it has implications for how the revenue is spent.

INCENTIVES FOR INVESTMENT

Malaysia has implemented a number of measures to encourage investment in the natural gas sector, in addition to aforementioned incentives in production-sharing contracts. The Petroleum (Income Tax) Act 1967 allows for a 10% to 20% deduction of capital expenditure of certain activities in the course of petroleum operations.[327] Foreign investment inflows are encouraged by imposing no restrictions on foreign ownership of mining companies. Moreover the federal government provides a variety of incentives aimed at boosting investment in the natural gas sector. Selected companies may be awarded "Pioneer Status" by the

[325] P. Lee (2012). No increase in oil royalty. *Free Malaysia Today*, 25 September 2012; Hiew King Cheu (2011). Petroleum Development Act 1974 (Act 144): Meida statement by Dr. Hiew King Cheu in Kota Kinabalu on Friday, 24th June 2011. Accessed at http://dapmalaysia.org/english/2011/jun11/bul/bul4622.htm.

[326] N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank, op. cit.

[327] DLA Piper (2012). Mining in the Asia Pacific: A Legal Overview.

Malaysian Industrial Development Authority, which is the principal agency for the promotion and coordination of industrial development in Malaysia. Companies receiving Pioneer Status are eligible to receive tax exemptions for up to 100% of their statutory income for a period of 5 or 10 years. Companies may also be eligible for double deduction tax incentives, whereby expenses incurred on activities such as export promotion, employee training programs and freight charges can be deducted twice against taxable profits: this effectively amounts to a subsidy equivalent to the income tax rate. For projects adjudged to be of strategic or national importance, the federal government provides investment tax allowances and reinvestment allowances for 60% of the capital expenditure incurred.[328] There are also plans to reduce the hefty Petroleum Income Tax from 38% to 25%, to bring it more in line with the Corporate Income Tax applicable for other companies and businesses.[329] For projects adjudged to be of strategic or national importance, the federal government provides investment tax allowances and reinvestment allowances for 60% of the capital expenditure incurred. Other incentives granted specifically to the mining sector are zero export duties on most minerals and low or zero import duties on most raw materials.[330]

The introduction of these incentives has coincided with increasing investment in the mining sector. The extractive industry's share of overall investment in the economy has increased to 6.6% in 2010 from 3.2% in 2000 (though it should be noted that much of this increased investment is in the oil and gas sector rather than mining).[331] The number of approvals and renewals for exploration licenses and mining leases has also increased in recent years with 152 mining leases issued in 2010 and 50 leases issued in 2011.[332] Evidence that the increased investment is in part attributable to the federal incentives is provided by the Raub gold project in the state of Pahang. The Raub project has been awarded Pioneer Status by the Malaysian government, and Peninsular Gold, which operates the project, has stated that the tax incentives benefit the economics of the project to a substantial degree.[333]

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328 Malaysianminerals.com (n.d.). Mineral Resources, accessed at http://malaysianminerals.com/mineral-resources.html.

329 R. Abdullah (2012). Oil & Gas Industry – Opportunities and Challenges Ahead. Halliburton, 30 May 2012. Accessed at http://www.mida.gov.my/env3/uploads/events/InvestMalaysia2012/4-Oilngas_Halliburton.pdf.

330 Malaysianminerals.com, op. cit.

331 USGS (2012). The Mineral Industry of Malaysia, op. cit.

332 Business Times (2012), op. cit.

333 Peninsular Gold (2009). Gold Production at Raub. Accessed at http://www.peninsulargold.com/

However, the investment risk is increased by the fact that each state is free to set a distinct royalty rate for each mining project, meaning that prior to actually acquiring the mining lease, the mining company does not know with any certainty what the royalty rate is going to be. As such, the Malaysian Chamber of Mines has in the past recommended that the government of Perak adopt a flat royalty rate that is not benchmarked to price levels so as to boost mining investments,[334] though such a recommendation would also have implications for the amount of rent the state governments can extract from mining projects.

Coordination issues between the fiscal regimes of the federal and state governments could prove a discouragement to investment in the mining sector. In the absence of better coordination on fiscal issues between the federal and the state governments (for example by setting up a coordinating body as proposed in the National Mineral Policy 2), the possibility of "strategic" royalty-setting remains, whereby tax incentives at the federal level are matched by increases in royalty rate at the state level, resulting simply in a redistribution of mining revenues from the federal to the state level and reduced incentives for investment due to the perceived regulatory uncertainty.

MACROECONOMIC POLICIES AND REVENUE MANAGEMENT

In the literature on the political economy of resource abundance, Malaysia is often cited as one of the few examples of resource rich developing countries that have managed to avoid the "resource curse" and instead utilized its resources to advance economic development.[335] To explain why, it is necessary to analyze and evaluate Malaysia's strategies with respect to macroeconomic policymaking and management of revenues from petroleum production.

One of the reasons behind the resource curse phenomenon is over-spending by the government during a resource boom: a comparison of various resource-rich countries found that countries with high resource-adjusted saving rates were more likely to have avoided the "resource curse". Malaysia's average resource-adjusted

index-1.html.

334 USGS (2001). The Mineral Industry of Malaysia in 2001.

335 See, for instance, S. M. Murshed (2008). What Turns a Blessing Into a Curse? The Political Economy of Natural Resource Wealth. University of Birmingham, March 3, 2008 and V. Polterovich, V. Popov and A. Tonis (2010). Resource abundance: a curse or blessing? DESA Working Paper No. 93, June.

saving rate of 18.4% between 1972 and 2000 compares favorably with that of developed countries such as Australia (18%), Canada (15.7%) and the US (15.1%) and by far exceeds savings rates in countries such as Nigeria (-22%), Saudi Arabia (-21.5%) and Venezuela (-1.8%).[336]

The high savings rate is largely a function of frugal households and a compulsory savings scheme called the Employee Provident Fund.[337] However policies specific to the petroleum sector have also contributed to savings, in particular the establishment of the National Trust Fund in 1988. As the Centre for Public Policy Studies has pointed out, the size of the National Trust Fund is still small on an absolute scale.[338]: at RM 4.8 billion (US$ 1.8 billion) at the end of 2011, it is still only a small proportion of PETRONAS's annual payments to the government that, in the fiscal year ending 2011, were as much as RM 65.7 billion (US$ 24.7 billion). But recent policy changes to the rules governing PETRONAS's contribution to the National Trust Fund are likely to enhance its effectiveness a savings fund that can provide a buffer against the resource curse. PETRONAS now contributes to the National Trust Fund on a progressive scale depending on the weighted average real price (WARP) of oil for the year. The annual contributions are as low as RM 100 million when the WARP is less than 70 USD per barrel, and as high as RM 1 billion when the WARP is higher than 100 USD per barrel.[339] Effectively, by forcing increased savings during times of high oil prices, when PETRONAS earns high revenues not just from oil but natural gas production as well (given that gas prices are typically oil-linked), the National Trust Fund can function as a stabilization fund to mitigate the effects of global oil and gas price volatility on the volatility of the Malaysia's petroleum revenues. This reduces the likelihood of the cyclical booms and busts in government spending that often afflict resource-rich countries.[340]

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[336] The resource-adjusted savings rate is defined as the national savings rate with the net extraction of oil, gas, minerals and timber resources subtracted from it. See R. Torvik (2009). Why do some resource-abundant countries succeed while others do not? *Oxford Review of Economic Policy*. Vol. 25 (2): 241 – 256.

[337] M. Z. Abidin (2001). Competitive Industrialization with Natural Resource Abundance: Malaysia. In R. M. Auty (ed.). Resource Abundance and Economic Development. Oxford, Oxford University Press.

[338] CPPS (2008). CPPS Policy Factsheet: Oil and Gas, op. cit.

[339] World Bank (2012). *Malaysia Economic Monitor* April 2012, op. cit.

[340] Setting up a stabilization fund is one of the most highly recommended strategies for managing the effect of resource windfalls on the economy. See, for instance, L. Seymour (2000). East Timor's Resource Curse? *Far Eastern Economic Review*, 30; M. Skancke (2003). Fiscal Policy and Petroleum Fund Management in Norway, in J. Davis, R. Ossowski and A. Fedelino (eds.), *Fiscal Policy Formulation and Implementation in Oil-Producing Countries,* Washington, DC: International Monetary Fund: 316-18. Weinthal, E. and P. J. Luong (2006). Combating the Resource Curse: An

The phenomenon of a resource boom leading to an appreciation of the real exchange rate and resulting in worsening export competitiveness of the manufacturing sector is what is known as the 'Dutch disease'.[341] Malaysia has pursued a number of macroeconomic and revenue management policies that have effectively amounted to an effective strategy to prevent the 'Dutch Disease'.[342] A key element of Malaysia's strategy for utilizing its petroleum resource revenues has been to increase its direct investments abroad. In the case of PETRONAS, its strategy of increasingly expanding its global operations in the last two decades has been motivated by a number of factors, prime being the desire to become a leading player in the global oil and gas business and the objective of securing new energy supplies abroad in the face of dwindling domestic oil and gas reserves.[343] As a result of this policy of pursuing overseas investments, though, the nominal exchange rate has remained fairly stable over time, with the inflows of foreign currency from oil and LNG exports counter-balanced by the outflow of overseas investment funds. Reserve accumulation by Bank Negara Malaysia further reduced the supply of foreign currency and thus curbed the upward pressure on the exchange rate. Malaysia's policy of increasing reliance on low-skill foreign workers has also countered another mechanism through which the Dutch disease can lead to reduced competitiveness of the manufacturing sector, namely increased wages.[344]

At the same time, Malaysia has pursued policies designed to develop the remainder of the economy and reduce the reliance on the petroleum industry alone. Malaysia has used the revenue from its oil and gas industry to invest heavily in infrastructure and human capital. Between 1978 and 1987, spending on economic infrastructure accounted for at least half of Malaysia's total investment. By 1991, spending on education by 1991 accounted for 5.5% of GDP, higher than in developed countries such as Japan (4.7%) and USA (4.3%).[345] In conjunction with the buildup of physical and human capital, Malaysia has pursued twin policies of open trade and competitive industrialization, leading to export-oriented industrialization of the economy, increased economic diversification and reduced reliance of the economy on commodity (in particular natural gas and oil) exports.[346]

Alternative Solution to Managing Mineral Wealth, *Perspectives on Politics* 4(1): pp. 35–53.

[341] Torfinn Harding and Anthony J. Venables (2010). Exports, Imports and Foreign Exchange Windfalls. Unpublished.

[342] World Bank (2012). *Malaysia Economic Monitor April 2012*, op. cit.

[343] von der Mehden and Troner (2007). Petronas: A National Oil Company With An International Vision, op. cit.

[344] World Bank (2012). *Malaysia Economic Monitor April 2012*, op. cit.

[345] Abidin (2001). Competitive Industrialization with Natural Resource Abundance: Malaysia, op. cit.

[346] Ibid.

One of the more significant and controversial uses of oil and gas revenue has been to support extensive fuel subsidies. The amount PETRONAS pays every year to support fuel subsidies is around RM 18-20 billion (US$ 6.7 – 7.4 billion), a significant amount by any measure and around 10% of the annual revenue accruing from PETRONAS to the federal government.[347] As a result, consumers enjoy end-use gasoline prices that can be 30% lower than the market price.[348]

It is important to note that fuel subsidies have in some ways had a beneficial effect. For instance, they have helped curb inflation, another risk from having abundant resources and high government spending; Malaysia's inflation rates have been low by regional standards.[349] However, subsidies are distortionary, leading to over-consumption of energy and hence reduced energy security for Malaysia, especially in the context of reduced production of oil and gas. The money spent on fuel subsidies has also resulted in a significant fiscal deficit for the Malaysian government and has proven a drag on PETRONAS, with the federal government taking up more than 50% of PETRONAS's net profits in the last fiscal year.[350] In the 2012 World Gas Conference, Shamsul Abbas, chief executive of PETRONAS, criticized the government's policy of subsidizing fuel subsidies, a policy for which PETRONAS pays between RM 18-20 billion (USD 6.7-7.4 billion) a year, arguing that a wiser use of PETRONAS's earnings would be to spend on foreign oil and gas acquisitions at a time when they are generally cheap.[351]

While the establishment of PETRONAS effectively gave it monopoly powers over Malaysia's petroleum resources, it can actually be viewed as an attempt to introduce competition into the system. As noted, prior to the 1974 Act, states with limited administrative capacity and lack of technological knowhow had to negotiate directly with large and experienced international oil companies. It was only following the creation of PETRONAS that there was anything approaching parity in the negotiations over production-sharing contracts.[352] A more symmetric distribution of bargaining power is less likely to result in anti-competitive outcomes (especially anti-competitive outcomes that favor the foreign company at the expense of Malaysian interests).

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347 N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank, op. cit.
348 World Bank (2012). *Malaysia Economic Monitor April 2012*, op. cit.
349 Ibid.
350 N. Koswanage and E. Kaiser (2012). Special Report: Petronas chafes at its role as Malaysia's piggy bank, op. cit.
351 Ibid.
352 B. Gale (1981), op. cit.

However, the result is that at the domestic level, PETRONAS has no competitors. PETRONAS fully owns 27 domestic subsidiaries in addition to 15 foreign ones.[353] Notable subsidiaries include PETRONAS Dagangan Berhad, which holds 40% of the market share of refining, and PETRONAS Gas Berhad, which operates the Peninsular Gas Utilization System.[354] However, the welfare losses from the fact that PETRONAS is a monopoly may not be significant. Since PETRONAS is fully state-owned, its ability to reduce domestic energy supply and increase domestic prices is severely constrained; indeed it is required to provide the financial support for energy subsidies that have exactly the opposite effect. Other potential negative effects of a lack of competition such as reduced innovation, reduced efficiency and complacency are unlikely to happen with PETRONAS given that it is actively engaged in international operations where it does have to compete against many other companies.

EXTERNALITIES

Mining generates environmental and social externalities i.e. costs that are typically not fully taken into account by the mining company in their decision-making process. The negative externalities of mining in Malaysia include air, water and land pollution, soil erosion, landscape alteration, destruction of river banks and premature exhaustion of mineral resource.[355] There has been particular concern in recent times over the use of cyanide in gold mining and the consequent health effects. A number of grassroots groups have protested the use of cyanide in the Raub gold mine in Pahang and argued that there have been adverse health effects on the residents in the area.[356] However, a legal challenge to the 1997 environmental impact assessment issued to the mine was dismissed by the Federal Court in September 2012.[357]

Malaysia has taken policy and regulatory measures to tackle the negative environmental externalities of mining. The National Mineral Policy 2 formulated in

[353] von der Mehden and Troner (2007). Petronas: A National Oil Company With An International Vision, op. cit.
[354] Ibid.; M. R. Abdullah et al. (2011), op. cit.
[355] A. Ali (2009). Implications of Trade Liberalisation to Malaysia's Mining Industry. *Bulletin of the Geological Society of Malaysia,* 55: 1-6.
[356] The Malaysian Insider (2012). Raub residents revive bid to close down gold mine. 25 June.
[357] The appeal was dismissed because appeals to the environmental impact assessment are required to be made within 40 days of the original approval. See The Malaysian Insider (2012). Activists lose last court battle in bid to block Raub gold mine. 06 September.

2009 puts particular emphasis on sustainable mining and environmental stewardship in mining.[358] The State Mineral Enactments require that an environmental impact assessment report be submitted by the mining company and approved before mining can commence, while large-scale mining companies are also required to formulate a plan for rehabilitation and set up a rehabilitation fund that at the minimum fully covers all the costs of rehabilitation. However, as highlighted earlier, public participation in the environmental impact assessment process is limited. As such, there is no guarantee that all the relevant negative externalities will be adequately internalized by the mining company when conducting its operations, leading to the potential for sub-optimal outcomes. In the case of the Raub gold mine, for instance, the approved environmental impact assessment could only be legally challenged by the public within 40 days of its initial approval, whereas in practice the negative health impacts only became apparent to the residents in 2006, 9 years after the approval of the environmental impact assessment.[359] The 40-day limit puts further constraints on the ability of the public to influence the environmental impact assessment process and thus creates a greater risk of significant environmental externalities not being accounted for or compensated.

Within Asia, Malaysia is one of the few countries with internationally recognized good environmental practices in its petroleum industry. In a recent evaluation of environmental governance of 32 oil-producing countries by the World Bank, Malaysia was considered the "benchmark" against which other countries in the East Asia and Pacific/Europe and Central Asia region would be rated, namely Afghanistan, Azerbaijan, Cambodia, China, Indonesia, Kazakhstan, Papua New Guinea, Philippines and Thailand. Key features of good environmental governance include a strong legal, regulatory and contractual framework, adequate institutional capacity, environmental information systems, the quality of environmental impact assessments (EIA) and public consultation and disclosure.[360] It should be noted that procedures for public consultation and disclosure are not strong in the Malaysian natural gas industry, as discussed before. Nevertheless, the presence of laws such as the Environmental Quality Act 1974, and more importantly the ubiquity of good environmental practices have meant that externalities are accounted for to some extent.

[358] NRE (2009). National Mineral Policy 2, op. cit.
[359] The Malaysian Insider (2012). Activists lose last court battle in bid to block Raub gold mine, op. cit.
[360] World Bank (2010). Environmental Governance in Oil-Producing Developing Countries. *Extractive Industries for Development Series #17, June 2010.*

ECONOMICS OF SCALE

The State Mineral Enactments do not specify any limits on the area for which a mining lease can be granted. This should allow for mining operations to take advantage of ECONOMICS OF SCALE . However there is a policy dissonance here, as exploration licenses are issued for areas of at most 20,000 hectares. This has the effect of negating the ECONOMICS OF SCALE benefits of having no area limits for mining leases, since a mining company can realistically only mine for resources within an area that it has already explored. The policy dissonance is particularly puzzling given that ECONOMICS OF SCALE are especially relevant in the exploration phase. Exploration rights granted over large areas increase the probability that the mining company will find some deposit.[361] As such, the risk of conducting costly exploration activities without finding any deposit is reduced, increasing the incentive to carry out mining exploration activities and thus increasing the likelihood that mining deposits that are optimal to develop from society's point of view will in fact be developed.

Malaysia also encourages small-scale traditional mining (without the use of power-operated tools) by distinguishing between *Dulang* licenses and individual mining licenses. Traditionally women miners, known as *Dulang* washers, have recovered mineral resources from streams or worked-out mines using panning techniques. Issuing *Dulang* licenses, with low fees (around RM 5 or USD 1.64 per annum), allows the rural poor to carry out panning and supplement their income without reducing the state's ability to extract royalties from other individual miners who use power-operated equipment and are likely to be better off.[362]

[361] G. M. Bautista (2009). Economics of Philippine Mining: Rents, Price Cycles, Externalities, and Uncompensated Damages. *The Loyola Schools Review Social Sciences vol. 8*, page 97-124.
[362] K. Lahiri-Dutt and M. Macintyre (2006). *Women Miners in Developing Countries*. Aldershot, England: Ashgate Publishing, May; CASM-Asia (2006). Small-Scale Mining in Malaysia & Some Technological Issues. Bandung, Indonesia, 27 November. Accessed at http://psdg.bgl.esdm.go.id/makalah/SMALL-SCALE%20MINING%20IN%20MALAYSIA%20&%20TECHNOLOGICAL.pdf.

2.1 NATURAL GAS AND GOLD IN MALAYSIA

Key Findings

- Malaysia is a significant producer of natural gas, with 61.8 billion cubic meters of bcm of gas production in 2011, or 1.9% of the world total. It is the 3rd largest gas producer in the Asia-Pacific region.
- The major industry player in the natural gas industry is Malaysia's national oil company, PETRONAS (Perbandam Petroleum Nasional). The major legislative act governing the upstream natural gas industry is the Petroleum Development Act of 1974, which vests the entire ownership and exclusive exploration and exploitation rights of all onshore and offshore petroleum resources in Malaysia in the hands of PETRONAS, under the direct purview of the Prime Minister.
- Malaysia is a tiny gold producer on the global stage, although gold production increased sharply between 2008 and 2010. Foreign companies dominate the gold mining industry.
- The state governments are the key stakeholders, possessing and owning all minerals within their territory to the exclusivity of all others. The key regulations are State Mineral Enactments that give the states the authority to issue mining licenses, mineral prospecting and exploration licenses, and mining leases. The major legislation governing the mining industry at the federal level is the Mineral Development Act of 1994.

Transparency and accountability

- Malaysia ranks 22nd, or in the 2nd tier, among 41 countries whose extractive industries have been evaluated by the Revenue Watch Institute on the criterion of transparency. Malaysia scores particularly well on the criterion "natural resource funds", which captures transparency with respect to the National Trust Fund, and transparency with respect to how much revenue accrues from PETRONAS to the government has been increasing. There is however much less transparency with respect to how the government spends the revenue.
- Accountability in the governance of Malaysia's natural gas sector is very limited, since PETRONAS is not directly accountable to Malaysian citizens or the Malaysian Parliament and PETRONAS is both the enforcer of the rules governing the market as well as a participant bound by the rules.

- Corruption and regulatory capture exist to a moderate though not severe degree in Malaysia. In the gold mining industry, illegal mining operations have been an endemic problem in recent years in the jungles of Gua Musang and Jeli in the province of Kelantan.
- PETRONAS has however increased its anti-corruption efforts and become more transparent with respect to such efforts.
- Governance of the mining industry is characterized by decentralization, which enhances accountability. Provisions for direct public participation and consultation are, however, weak or non-existent, limiting accountability.
- The governance structure for the natural gas industry lends itself to a risk of regulatory capture, but the empirical evidence generally suggests that regulatory capture has not occurred. However it is unclear whether the current governance structure of the natural gas industry will continue to achieve social objectives in the future the same way it has done in the past.

Quality of the regulatory framework

- Internationally, PETRONAS generally has a good reputation for governance due to factors such as competent management, close alignment of the objectives of the company, the government and the economy, and its technical capacity.
- Federal laws and regulations on natural gas extraction appear to be fairly clear and coherent, but the absence of a distinct regulator has meant that many of the relevant procedures (e.g. the process for production-sharing) are not encoded in law, contributing to a lack of clarity as to how the unregulated aspects of natural gas exploration and production are governed.
- Malaysia provides a favorable business environment for companies with low levels of regulatory uncertainty, but this may sometimes entail a lack of regulatory flexibility.
- As a national oil company with widespread international operations, PETRONAS conducts an extensive range of activities across the oil sector,

which (together with its large size) is indicative of its administrative and technical capacity. Federal laws and regulations on gold mining appear to be fairly clear and coherent, and the use of standardized State Mineral Enactments has led to consistency of regulations across states as well.

- There is significant overlap of jurisdiction between the various agencies and levels of government in mining. Alignment between the federal government and state governments is a challenge, although Malaysia continues to attempt to resolve such coordination problems (for instance by the setting up of a National Mineral Council).
- Malaysia has had a fairly stable set of laws and regulations governing the mining industry, and frequent changes to regulations are uncommon. Thus regulatory uncertainty is limited, though there is some policy uncertainty since not all states are as enthusiastic about encouraging investment in gold mining as the federal government.
- Law enforcement has recently been flagged as an issue in the gold mining industry in the state of Kelantan, where illegal gold mining has boomed in the last year. Such problems exist to a lesser extent in other states.

Economic efficiency considerations

- Natural gas production-sharing contracts in Malaysia appear to perform fairly well from the perspective of maximizing rent extraction from natural gas exploration and production, without noticeably diminishing incentives for investment in the sector.
- The domestic revenue-sharing arrangement is lopsided in favor of the federal government at the expense of the state governments and has become a politically contentious issue. The revenue-sharing arrangement between PETRONAS and the federal government is also tilted towards the latter.
- Malaysia is one of the few examples of resource rich developing countries that have managed to avoid the “resource curse” and instead utilized its resources to advance economic development. Malaysia’s strategies such as policies encouraging a high savings rate, macroeconomic and revenue management policies to counter the Dutch disease, and economic diversification policies have enabled it to avoid the resource curse. However

oil and gas revenues have also been used to support fuel subsidies, which are distortionary and have resulted in a significant fiscal deficit.

- Within Asia, Malaysia is one of the few countries with internationally recognized good environmental practices in its petroleum industry, despite the fact that procedures for public consultation and disclosure are not strong in the Malaysian natural gas industry. The flexible royalty regime benefits the State government by allowing it to extract the maximum rent possible, although it can increase investor uncertainty. A shortcoming is that the royalty regime specified by the State Mineral Enactments is non-progressive, meaning that the royalty rate is the same for highly profitable and less profitable projects.
- Because state and federal revenue are clearly distinguished at the outset, the question of equitable distribution of mining revenues between the federal government and the state governments is less of an issue than in other South-east Asian countries such as the Philippines.
- Malaysia has implemented measures to encourage investment in the mining sector which have been effective in increasing investment in the gold mining sector as well as gold production.
- Mining generates environmental and social externalities, and there has been particular concern in recent times over the use of cyanide in gold mining and the consequent health effects. Malaysia has taken regulatory measures to tackle the negative environmental externalities of mining, but their effectiveness is diminished by the limited public participation in the EIA process.
- While ECONOMICS OF SCALE are more significant at the exploration rather than the production stage, State Mineral Enactments specify maximum areas for exploration rather than production.

Recommendations

- The governance process would benefit from increased transparency, in particular with regard to how the sizeable revenue from natural gas production is managed and spent by the government.
- A regulatory body that functions independently from PETRONAS should be set up and some of PETRONAS's regulatory and licensing powers

should be transferred to this body in order to overcome conflicts of interest and enhance accountability. This should be complemented by introducing provisions for direct public participation and consultation in the governance should be improved in order to enhance accountability particularly with regards to management of natural gas revenue.

- The Petroleum Regulations should be modified to include guidelines on many of the relevant procedures (e.g. the process for production-sharing) that are currently not encoded in law. This will increase regulatory clarity and reduce uncertainty.
- A more equitable revenue-sharing scheme between the federal and state governments is recommended, which can be done by increasing the royalty rate or specifying a share of the profit gas to accrue directly to the state governments.
- The federal government should reconsider its policy of using gas revenues to support fuel subsidies, which are distortionary and have resulted in a fiscal deficit.
- Provisions for direct public participation and consultation in the governance should be improved, both to enhance accountability and to strengthen the environmental impact assessment process.
- Coordination issues between the federal and state governments could be addressed by setting up a consolidated governance regime applicable for the entire country, which can continue to retain some of the decentralized features of the current regime (e.g. state governments having the greatest say over policies implemented in their own states).
- A progressive royalty regime should be adopted to increase state rents from gold mining, and while a flexible royalty rate has some benefits, some guidelines limiting the extent to which they can be varied would be useful in order to address investor uncertainty.
- Instead of specifying maximum areas for exploration and not production, State Mineral Enactments should specify area limitations for the production phase and relax the limitations on area for the exploration phase (where economics of scale are especially important).

PHILIPPINES

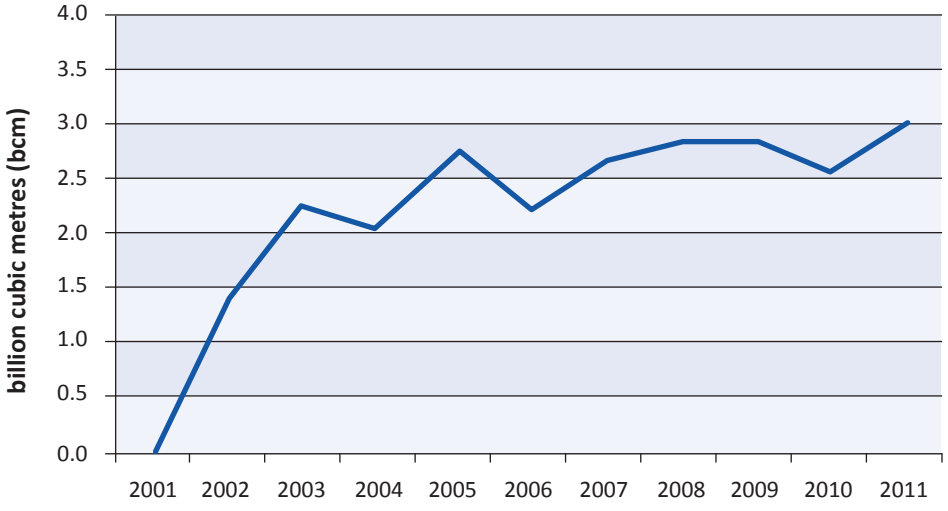
NATURAL GAS AND GOLD

NATURAL GAS AND GOLD IN THE PHILIPPINES

The Philippines neither imports nor exports natural gas, so all of the gas it produces is consumed domestically. Gas production in the Philippines was 3.6 billion cubic meters (bcm) in 2011.[363] Within the ASEAN region, therefore, the Philippines ranks a distant seventh behind Indonesia, Malaysia, Thailand, Brunei, Myanmar and Vietnam in terms of gas production, and accounts for less than 1% of total natural gas production in the Asia-Pacific region.[364]

Before 2001, prior to the development of offshore reserves, gas consumption in the Philippines was at negligible levels. A joint venture with Shell and Chevron was formed in 2001 to tap reserves at Malampaya.[365] Since then, as Figure 4.1 illustrates, gas consumption has steadily increased, from only around 0.1 bcm in 2001 to 3.6 bcm in 2011.

Figure 4.1 Natural gas consumption in the Philippines, 2001-2011



Source: BP (2012), Statistical Review of World Energy June 2012.

[363] BP (2012). Statistical Review of World Energy June 2012.

[364] The Asia-Pacific region as defined here encompasses Oceania and all of Asia except for the Middle East and the countries that were formerly part of the Soviet Union (such as Kazakhstan, Turkmenistan and Uzbekistan).

[365] Rein, Adam and Cruz, Karen (2011), "Philippines Energy Policy and Development," *The Journal of Energy and Development*, Volume 34, Number 1.

Proven gas reserves were earlier estimated to be around 3.8 Tcf.[366] Offshore reserves at the Malampaya gas field, located northwest of Palawan island, amount to 2.7 Tcf.[367] Onshore reserves exist at the San Antonio gas field in Echague, Isabela, with estimated reserves of 2.7 Tcf, as well as at the Libertad Gas Field (0.6 Bcf).[368] These three fields alone account for gas reserves of around 5.4 Tcf, meaning that total reserves are at least 5-6 Tcf. A second offshore field at Sampaguita has reserves of 4.66 Tcf and could potentially double or triple reserves, but is located in a disputed area of the South China Sea.[369]

However, the Department of Energy (DoE) estimates that proven reserves account for only a small proportion of the total natural gas resources in the Philippines. If hypothetical (mapped) resources of 8.1 Tcf and speculative (unmapped) resources of 16.6 Tcf are included as well, the Philippine's total gas resources increase to 28.5 Tcf.[370]

In conjunction with the upstream gas extraction industry, a downstream industry has also sprung up in the Philippines. Gas from the Malampaya gas project is pumped via a sub-sea pipeline to Luzon to fuel 2.7GW of electricity production; in 2008, gas accounted for one-third of electricity production.[371] Decisions on extraction are inevitably linked to infrastructure development at the downstream level; for instance, development of the disputed offshore field at Sampaguita is contingent on the construction of an LNG facility.[372]

Relative to its land area, the Philippines is well-endowed with a range of mineral resources, including gold. In terms of the density of deposits per square kilometer of land area, the Philippines ranks third in the world in gold deposits, in addition to being fourth in copper reserves, fifth in nickel and sixth in chromites.[373]

The mining sector is still relatively small compared to the rest of the economy, contributing 1.0% of the Gross Domestic Product (GDP) in 2010 and 2011.[374] An estimated 210,000 people were employed in the mining industry in 2011, constituting

366 J. T. Tamang (n.d.). The Philippine Natural Gas Industry. Natural Gas Office, Department of Energy, Philippines.
367 Rein and Cruz (2011), op. cit.
368 Department of Energy (DoE), Philippines (n.d.). Domestic Gas Supply. http://www.doe.gov.ph/DNG/gas_supply.html
369 Business Inquirer (2012). Philippine gas field in China-claimed sea 'bigger'. 25 April 2012.
370 J. T. Tamang (n.d.) The Philippine Natural Gas Industry, op. cit.
371 Rein and Cruz (2011), op. cit.
372 Rein and Cruz (2011), op. cit.
373 V. Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines. *Minerals & Energy - Raw Materials Report*, 23(3): 127-43.
374 Mines and Geosciences Bureau (2012). Mining Industry Statistics. September.

only around 0.6% of total employment.[375] The contribution of mining to export revenues is comparatively larger, with mineral exports accounting for roughly 5-6% of overall export revenue between 2006 and 2009, a significant increase from the 2-3% share seen in the early 2000s.[376] In 2011 mining exports were valued at $2,836 million, 6% of total exports.[377] Mining makes a significant contribution to foreign direct investment (FDI), accounting for $277.5 million or 32.7% of the total FDI in 2010.[378]

The combination of abundant reserves and comparatively subdued levels of production and exports suggests that there has been under-utilization of the Philippine's mining resources, which is also the view of some scholars[379]; whether that represents a sub-optimal state of affairs, in particular in the case of gold, is a question that will be discussed later.

Table 4.2 Mining of gold in the Philippines

Year	Gold, mine output, Au content (in kilograms)
2006	36,141
2007	38,792
2008	35,726
2009	37,047
2010	40,847

Source: Y. Fong-Sam (2012). The Mineral Industry of the Philippines. *2010 Minerals Yearbook,* **U.S. Geological Survey.**

Table 4.2 illustrates how gold production in the Philippines has evolved over the last few years. Production increased by 10.3% from around 37 tons in 2009 to 41 tons in 2010, though this is still small in relation to global gold production that was 2,560 tons in 2010.[380] The majority of gold is produced through small-scale

375 Ibid.
376 Mines and Geosciences Bureau (2010, 2011). Mining Industry Statistics.
377 Mines and Geosciences Bureau (2012), op. cit.
378 Y. Fong-Sam (2012). The Mineral Industry of the Philippines. *2010 Minerals Yearbook,* U.S. Geological Survey..
379 See, for instance, J. Otto (1992). The Philippines: The effect of an interim regulatory system on foreign mineral investment. In: Otto, J., Waelde, T., (Eds.), *Mineral Investment Conditions in Selected Countries of the Asia-Pacific Region*. United Nations Economic and Social Commission for Asia and the Pacific, New York.
380 U.S. Geological Survey (2012). *Mineral Commodity Summaries*. January.

mining, with production at 25.2 tons in 2010 (down from 26.1 tons in 2009). Major mining operations include the Masbate gold project, which yielded 5,536 kg of gold in 2010, and the Padcal mine, which has an annual production capacity of 5,000 kg. A number of new gold mines are at various stages in their pre-production phase, according to the U.S. Geological Survey[381]; together with expansion plans at existing mines, these could represent an increase of 8,500 kg in the annual production of gold, or 20.8% of existing production.[382]

Notably, foreign companies play a significant role in large-scale mining of gold in the Philippines along with domestic companies, as Table 4.1.2 below illustrates. Among the 5 largest gold mines in the Philippines, the Padcal Mine and the Victoria and Teresa Mines are domestically owned, while the Masbate Gold Project, the Rapu-Rapu Mine and the Canatuan project are owned by foreign companies. There has been a recent trend towards increasing foreign investment in the gold mining industry; for instance, the largest gold mine, the Masbate Gold Project, only started operations in 2009, while the vast majority of new gold finds and upcoming gold mining projects (as reported by the U.S. Geological Survey) are owned by foreign companies from countries such as Australia and the United Kingdom.[383]

Table 4.3 Major Gold Mining Operations in the Philippines, 2010

Mining operation	Major operating companies and equity owners	Annual capacity (kg)
Masbate Gold Project	CGA Mining Ltd. (Australia)	6,000
Padcal Mine	Philex Mining Corp. (Philippines)	5,000
Victoria and Teresa Mines	Lepanto Consolidated Mining Co (Philippines)	2,000
Rapu-Rapu Mine	Lafayette Mining Ltd., 75% (Australia); LG International and Korean Resources Corp, 25% (S Korea)	1,500
Canatuan project	TVI Resources Development Philippine Inc. (Canada)	500

Source: Y. Fong-Sam (2012). The Mineral Industry of the Philippines. *2010 Minerals Yearbook,* U.S. Geological Survey.

381 Y. Fong-Sam (2012). The Mineral Industry of the Philippines, op. cit.
382 Authors' calculations based on Y. Fong-Sam (2012). The Mineral Industry of the Philippines, op. cit.
383 Y. Fong-Sam (2012). The Mineral Industry of the Philippines, op. cit.

EVOLUTION OF NATURAL GAS AND GOLD INDUSTRY AND REGULATORY FRAMEWORK

NATURAL GAS:

The first discovery of natural gas in the Philippines was the San Antonio marginal gas field by the Philippine National Oil Company Exploration Corporation (PNOC-EC).[384] PNOC-EC began production from the field in 1994.[385] Currently PNOC-EC is looking to further develop the field to supply gas to a 3-MW plant principally for rural electrification.[386] However production from the field has thus far been comparatively insignificant, with the initial development of the project mostly serving as demonstration project to enhance the Philippine's experience in extracting and producing natural gas.[387]

The natural gas industry has only recently become significant in the Philippine context. In 1989, Occidental Philippines discovered the Camago natural gas well in a deep-water located in northwest off-shore Palawan. Subsequently, Occidental transferred ownership of the Geophysical Survey and Exploration Contract (GSEC) No. 47 under which it was operating to Shell, which discovered the Malampaya gas field in 1991. By 1998, Shell had taken over full ownership of the project from Occidental, but in 1999 45% of the stake was acquired by Texaco. After 3 years of development and construction, the Malampaya project was finally commissioned in October 2001, with the gas produced from the field transported via a sub-sea pipeline to an on-shore gas plant in Batnagas.[388]

A number of major stakeholders are involved in the governance of the natural gas industry. The key rule-makers in the Philippines are the House of Representatives and the Senate, the President and the Supreme Court. The Department of Energy (DoE) is the main agency for the development of the natural gas industry. The Department of Energy Act of 1992 created the DoE and abolished the Office of Energy Affairs and the Energy Coordinating Council. In addition, it placed the

384 Department of Energy (DoE), Philippines (n.d.). San Antonio Gas Field. Available at the DoE website, http://www.doe.gov.ph/DNG/gas_supply_sanantonio.html.
385 J. T. Tamang (2008). Natural Gas: The Fuel of the Future Dialogue with Region 7 (Plenary). PEP 2008-2030 Public Consultation Series, Cebu City, July 2009.
386 Department of Energy, Philippines (n.d.). Natural Gas Policy Paper. Available on the DoE website, http://www.doe.gov.ph/DNG/NatGas%20Policy%20Paper%20%28Executive%20Summary%29.pdf.
387 DoE (n.d.). San Antonio Gas Field, op. cit.
388 Department of Energy (DoE), Philippines (n.d.). Malampaya Deep Water Gas to Power Project. Available at the DoE website, http://www.doe.gov.ph/DNG/malampaya_history.pdf.

Philippine National Oil Company (PNOC), the National Power Corporation (NPC), and the National Electrification Administration (NEA) under the supervision of the DoE.[389] In 2001, following the development of the Malampaya gas field, the President of the Philippines passed Executive Order No. 66 which designated the DoE as the lead agency for the development of the natural gas industry in the Philippines.[390] The Department of Energy and Natural Resources (DENR) oversees environmental management, conservation and development (including the environmental approval process for natural gas projects) through its Environmental Management Bureau (EMB).[391]

The Philippines also pursued a policy of policy decentralization through the late 1980s and early 1990s, with the Local Government Code of 1991 creating four levels of local government: the province, the city, the municipality and the *barangay*.[392] As such Local Government Units (LGUs), overseen by the Department of Interior and Local Government (DILG), are also key stakeholders. Finally, given that natural gas extraction operations are sometimes carried out in areas with significant indigenous populations, the National Commission on Indigenous Peoples (NCIP) is also a stakeholder when it comes to natural gas extraction.[393]

The major regulation underlying the governance of the natural gas industry in the Philippines is the Petroleum Exploration and Development Act of 1972 (issued by Presidential Decree No. 87).[394] The Act authorizes the granting of service contracts for the extraction of petroleum (including natural gas); under service contracts, the contractor provides the technology and service for a stipulated fee while the government provides the financing and retains ownership of all of the natural gas produced. The fiscal regime specified by the Act is a proceeds sharing

389 Congress of the Philippines (1992). Republic Act No. 7638: An Act Creating the Department of Energy Rationalizing the Organization and Functions of Government Agencies Related to Energy and for Other Purposes.

390 President of the Philippines (2001). Executive Order No. 66: Designating the Department of Energy as the Lead Agency in Developing the Philippine Natural Gas Industry, 2001.

391 V. Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines. *Minerals & Energy - Raw Materials Report*, 23(3): 127-43.

392 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization. Local governments and mining in the Philippines. *Natural Resources Forum* 30: 188-198.

393 Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.

394 President of the Philippines (1972). Presidential Decree No. 87: Amending Presidential Decree No. 8 Issued on October 2, 1972 and Promulgation of an Amended Act to Promote the Discovery and Production of Indigneous Petroleum and Appropriate Funds Therefor. December.

regime, where all the costs of exploration and development and all operating costs are paid for from the sale of the natural gas produced, and the net proceeds (after deduction of the costs) is shared between the government and the contractor.[395] A presidential decree issued in 1983 (Presidential Decree No. 1857) modified the 1972 Act by including new incentives for producers as well as additional provisions for projects involving deep water drilling (in response to the discovery of offshore oil and gas reserves).[396]

A number of other regulations are also relevant. R.A. No. 9136 (the Electric Power Industry Reform Act of 2001) sets the general guidelines for pricing and tariff regulations, and establishes mechanisms to encourage competition such as cross-ownership, anti-competitive practices and the prevention of market abuse. E.O. No. 172 (amended by R. A. 9136) created the Energy Regulatory Board and consolidates the regulatory and adjudicatory functions in the energy sector, such as fixing and regulation of prices of petroleum products, rate and schedule of piped gas and rates of the pipeline concessionaires, to the newly created ERB. R. A. No. 8479 (Downstream Oil Industry Deregulation Act of 1998) establishes the rules on competition in order to ensure a free market under a regime of fair prices, an adequate supply of petroleum products and incentives to encourage the entry of new players into the industry.[397]

Governance of the gold mining industry is through a complex set of regulators and there are a number of major stakeholders. The key rule-makers in the Philippines are the House of Representatives and the Senate, the President and the Supreme Court, and underlying all laws and regulations is the 1987 Constitution, which specifies that the state owns all mineral resources. The Department of Energy and Natural Resources (DENR) administers the implementation of the 1995 Mining Act through its Mines and Geosciences Bureau (MGB) and oversees environmental management, conservation and development (including the environmental approval process for mining projects) through its Environmental Management Bureau (EMB).[398] The Philippines also

[395] President of the Philippines (1972), op. cit.; E. M. Sunley, S. Craner, R. Krever and O. Luca (2012). Reform of the Fiscal Regimes for Mining and Petroleum. International Monetary Fund Country Report No. 12/219, August.

[396] President of the Philippines (1983). Presidential Decree No. 1857: An Act Granting New Incentives of Petroleum Service Contractors, and For This Purpose, Amending Certain Sections of Presidential Decree Numbered Eighty Seven, as Amended, Otherwise Known As "The Oil Exploration and Development Act of 1972."

[397] DoE (n.d.). Natural Gas Policy Paper, op. cit.

[398] Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.

pursued a policy of policy decentralization through the late 1980s and early 1990s, with the Local Government Code of 1991 creating four levels of local government: the province, the city, the municipality and the *barangay*.[399] As such Local Government Units (LGUs), overseen by the Department of Interior and Local Government (DILG), are also key stakeholders. Finally, given that many mining operations are carried out in areas with significant indigenous populations, the National Commission on Indigenous Peoples is a significant stakeholder when it comes to mining.[400]

Gold mining has a long history in the Philippines, dating back to at least the 3rd century A.D., when Luzon used to be known as the Isle of Gold. Historically, small-scale mining has been the norm, and major commercial production only began in the 1930s and 1940s.[401] By 1941, the Philippines had become the fifth largest gold producer in the world.[402] The gold mining industry grew especially rapidly during the 1970s and the early 1980s, with gold production increasing from less than 20 tons in 1972 to over 35 tons in the mid-1980s; production fell dramatically, however, in the next decade, going below 15 tons in the mid-1990s.[403] This is roughly similar to how the rest of the mining industry in the Philippines fared as well, with the industry booming in the 1970s and early 1980s (and contributing as much as 21% to overall exports in 1980) and suffering a "crisis" beginning from 1985.[404]

In part, the decline of the Philippine gold mining industry coincided with the decline of global gold prices over the 1980s.[405] In addition, though, institutional and policy flaws have also been cited as reasons behind the decline. The Philippine Chamber of Mines expressed the view that the absence of an adequate mining code and the 5% tax on gross mining revenues impeded the development of the

399 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization. Local governments and mining in the Philippines. *Natural Resources Forum* 30: 188-198.

400 Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.

401 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent. In: M. Colchester, A.L. Tamyo, R. Rovillos and E. Caruso (Eds.), *Extracting Promises: Indigneous Peoples, Extractive Industries, and the World Bank*. Tebtebba Foundation, Baguio City, Philippines.

402 R. Oliveros (2002). *Philippine History and Government, 2002 Edition.* IBON Books, Manila.

403 Gold production numbers are from www.24hgold.com/. 24hgold.com is a website dedicated to precious metals, energy and resource prices, including articles, press releases, editorials, intraday charts and historical charts. The website is managed and edited by Luxeor Information Secs, Luxemborg.

404 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.

405 Gold prices are from London Bullion Market Association (2012). Gold Fixings. http://www.lbma.org.uk/pages/?page_id=53&title=gold_fixings.

mining industry. The Asian Development Bank argued that the negative investment climate, and in particular the 60-40 provision of the 1987 Constitution (which stated that companies entering into production-sharing agreements with the state must have at least 60% ownership by Filipino citizens), were deterrents to foreign investment in mining.[406] Although Executive Orders Nº 211 and 279 issued by President Aquino in 1987 aimed in part to facilitate foreign investment in the mining sector, international mining firms proved reluctant to invest as the 60-40 provision would ensure that the decision-making authority would lie with the domestic partner.[407]

The Mining Act of 1995 was designed so as to address some of these concerns and till date has been the primary legislation governing the mining of resources (including gold) in the Philippines. It's most important provision was to create new types of production sharing contracts, known as Financial or Technical Assistance Agreements (FTAAs) that are applicable for large-scale mining operations with an investment of at least $50 million and are available to both domestic and foreign-owned companies.[408] FTAAs are valid for 25 years and renewable for a further 25 years, and can be granted to cover a maximum area of 81,000 hectares onshore or 324,000 hectares offshore (or a combination of the two).[409] The 1995 Act also included provisions for two other kinds of mining permits. Mineral agreements allow companies with at most 40% foreign ownership to conduct mining operations within a contracted area of a maximum of 16,200 hectares onshore or 40,500 hectares offshore (or a combination of the two) under any of three types of contracts: mineral production-sharing agreements, joint ventures, and co-production agreements. Exploration permits (EPs) grant exclusive rights to companies (which may be domestic or foreign) to explore a contracted area for all mineral resources for two years, and in addition grant the company in question the right to enter into a mineral agreement or FTAA with the government if it can demonstrate commercial viability of the proposed mining project.[410]

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406 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.; V. Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.

407 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.

408 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.

409 Y. Fong-Sam (2012). The Mineral Industry of the Philippines, op. cit.

410 Congress of the Philippines (1995). Republic Act No. 7942: An Act Instituting A New System of Mineral Resources Exploration, Development, Utilization and Conservation.

In addition to these different kinds of permits, the Mining Act provided a range of fiscal and non-fiscal incentives to encourage mining. These include an income tax holiday of 4 years for non-pioneer projects and 6 years for pioneer projects, tax-free and duty-free imports of capital equipment, and exemptions from value-added taxes, income tax deductions when operations are posting losses, and accelerated depreciation.[411] The tax holiday provision allows companies to fully recover all of their pre-operating expenses, including exploration and development expenditures, before they have to start paying income taxes or any other taxes and duties (except for the mandatory excise tax) to the government.[412] The Mining Act also guaranteed the right of repatriation of the entire profits of the investment and freedom from expropriation, and provided investors with auxiliary rights such as timber, water and easement rights.[413]

While foreign mining companies favored the Act, the 1995 Mining Act has been opposed by civil society groups and local governments from its very inception, both because of the FTAA provision allowing full-foreign ownership in mining and due to growing concerns about the environmental and social costs of mining. Environmental opposition to the Mining Act deepened after the Marcopper tailings spill incident in 1996, in which tailings waste released from the Marcopper copper mine in the island of Marinduque caused extensive damage to the Boac River. This led to a legal challenge against the 1995 Mining Act that spanned over more than 5 years and led to a Supreme Court ruling, in January 2004, that the FTAA provision was unconstitutional. This ruling, however, was overturned in December 2004.[414]

More recent years have seen further uncertainty surrounding the Mining Act. After cyanide leaks from the Rapu-Rapu gold and copper mine in Albay province in 2005, there was increased pressure from the anti-mining constituency to review the mining law. In March 2006, President Arroyo ordered a review of the Mining Act.[415] In July 2012, President Aquino passed a new executive order on mining, EO 79, which set a

[411] R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.; W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
[412] Congress of the Philippines (1995). Republic Act No. 7942, op. cit.; G. M. Bautista (2009). Economics of Philippine Mining: Rents, Price Cycles, Externalities, and Uncompensated Damages. *The Loyola Schools Review Social Sciences vol. 8*, page 97-124.
[413] W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.; Alan Khi-Jeen Tan (2005). All That Glitters: Foreign Investment in Mining Trumps the Environment in the Philippines. *Pace Environmental Law Review.* Paper 515. http://digitalcommons.pace.edu/envlaw/515.
[414] R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.; W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
[415] W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.

goal of the Philippines joining the Extractive Industry Transparency Initiative (EITI), set up mineral reservations for strategic mineral reserves to enable the collection of 5% in additional royalties, and identified specific zones closed to mining. The Executive Order also suspended the granting of new mineral agreements pending new legislation to replace the 1995 Act (though new exploration permits may still be granted) [416]

However, new legislation is yet to be agreed upon and the content of any such bill remains unclear at this stage. In 2009, the Philippine Mineral Resources Act of 2009 (also known as the Alternative Mining Bill-House Bill 6342) was filed in the Congress and proposed to replace the 1995 Mining Act.[417] The proposed Act would repeal the FTAA and the EP, with only the Mineral and Geosciences Bureau (MGB) allowed to conduct exploration and only companies with a minimum of 60% Filipino ownership to mine based on mineral agreements (similar to those in the 1995 Act). A 10% tax would be imposed on gross mining revenues, and in addition at least 10% of revenues would be given to Indigenous Cultural Communities/Indigenous People (ICCs/IP) as royalty for mining carried out within ancestral domains. The proposed Act would limit the maximum contract term to 15 years, and the maximum area to 500 hectares. In addition, decision-making would be devolved to a Multi-Sectorial Mineral Council with representatives not just from the national government, but from local government units (LGUs), non-governmental organizations and local indigenous communities as well.[418] Subsequently in March 2011, a People's Mining Bill (House Bill 4315) was filed in the Congress that had essentially the same measures as in the Philippine Mineral Resources Act of 2009.[419] To date, though, both of these bills are pending in Congress.[420]

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[416] Official Gazette, The Philippines (2012). Executive Order No. 79: Institutionalizing and Implementing Reforms in the Philippine Mining Sector Providing Policies and Guidelines to Ensure Environmental Protection and Responsible Mining in the Utilization of Mineral Resources, http://www.gov.ph/2012/07/06/executive-order-no-79-s-2012/; *ABS-CBN* (2012). Q&A on Executive Order 79. 7 September, http://www.abs-cbnnews.com/business/07/09/12/qa-executive-order-79.

[417] Y. Fong-Sam (2012). The Mineral Industry of the Philippines, op. cit.

[418] House of Representatives, Congress of the Philippines (2009). House Bill No. 6342: An Act to Regulate the Rational Exploration, Development and Utilization of Mineral Resources, and to Ensure the Equitable Sharing of Benefits for the State, Indigenous Peoples and Local Communities, and for Other Purposes. http://www.alyansatigilmina.net/files/HB%206342_0.pdf; Alyansa Tigil Mina National Secretariat (2009). Alternative Mining Bill: In brief.

[419] The Center for Environmental Concerns- Phillipines (2011). A Primer on the People's Mining Bill (House Bill 4315). http://www.preda.org/en/wp-content/uploads/2011/11/peoples-mining-bill-primer.pdf.

[420] C. Traywick (2012). Sitting on a Gold Mine: Will Mining Make or Break the Philippines? *Time* 13 September; The *Philippine Star* (2012). New mining law to replace Noy's EO pushed. 11 July. http://www.philstar.com/Article.aspx?articleId=826230;

Given the Philippine context, with significant decentralization of power and natural gas and gold operations often conducted in areas with significant indigenous populations, two other regulations are relevant to the extraction of natural gas and gold resources. The 1991 Local Government Code that set up three levels of local government specified the local government consent requirement for any mining project to proceed, established the share of mining taxes going to the local government and entrusted LGUs with overseeing environmental management.[421] The Indigenous Peoples' Right Act (IPRA) of 1997 states that no mining operation can be approved without the "free and prior informed consent" (FPIC) of indigenous peoples and contains provisions concerning mining activities in ancestral domains.

GOVERNANCE
TRANSPARENCY AND ACCOUNTABILITY

TRANSPARENCY

In some ways, the Philippine governance of its gold mining industry reflects transparency. The website of the Mining and Geosciences Bureau (MGB) provides detailed information (including the full texts) on the various laws and regulations pertaining to mining, key statistics pertaining to mining extraction, production and reserves, geological maps and the templates used for the different types of mining contracts.[422] All the house bills filed in the Philippine Congress, including those pertaining to mining and to natural gas production, can be downloaded from the website of the Congress.[423]

The website of the Department of Energy (DoE) provides detailed information on the various laws and regulations pertaining to natural gas extraction, description of the various gas fields as well as the sectors that demand gas, as well as the plans and programs for natural gas development.[424] All the house bills filed in the Philippine Congress, including those pertaining, can be downloaded from the website of the Congress.[425]

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421 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
422 The MGB website can be accessed at http://www.mgb.gov.ph/.
423 See http://www.congress.gov.ph/download/index.php?d=billstext.
424 The DoE website can be accessed at http://www.doe.gov.ph/.
425 See http://www.congress.gov.ph/download/index.php?d=billstext.

The dimension of transparency emphasized by the Extractive Industries Transparency Initiative (EITI), which the Philippines has recently set a target of joining, is transparency with regards to transactions between the government and the mining companies. In this regard, the natural gas industry performs fairly well. The Petroleum Exploration and Development Act of 1972 sets out a number of terms and conditions for a "model" service contract between the government and a contractor. While actual terms may vary, the Act sets several restrictions on how much these terms may. Moreover, unlike the Mining Act governing the extraction of mineral resources, which guarantees confidentiality for mining companies, the Petroleum Exploration and Development Act 1972 specifies that negotiations carried out will be given "publicity consistent with the best interest of the government."[426] For instance, the contractual terms for the major gas production project, the Malampaya project, are known to the public.[427]

Transparency in recent years has further improved after the issuance of Executive Order (EO) 556 by President Arroyo in 2006. EO 556 strictly mandates public bidding for the awarding of all contracts and prohibits farm-in and farm-out arrangements (these are negotiated agreements where holders of contracts or licenses sell part of their interest in the operation to other parties, often to obtain funding).[428] By preventing behind-the-scenes negotiations between companies and instead operating a public bidding process, EO 556 enhances transparency in how natural gas contracts are awarded.

There is, however, a perceived lack of transparency in the collection and disbursement of revenue earned from natural gas production. Data on exports and taxes paid by natural gas companies is not publicly available as it is considered confidential by government agencies. The DoE and the Bureau of Treasury maintain a special account called Fund 151, for non-tax revenues from oil, gas, geothermal and other energy projects; as most of the revenue comes from the Malampaya gas project, this fund is commonly known as the Malampaya Fund.[429] There is a lack of transparency in how exactly the proceeds from these funds are disbursed, though,

[426] President of the Philippines (1972). Presidential Decree No. 87, op. cit.
[427] F. A. Castillo (2012). Oil and Gas Production in the Philippines: Public Interest Issues. Bantay Kita Occassional Paper Series No. 2012-01. The contractual terms are analyzed in greater depth in a subsequent section.
[428] Castillo (2012), Oil and Gas Production in the Philippines, op. cit.
[429] Ibid.

since expenditures from the Fund are not recorded separately but are "co-mingled" or combined with the remainder of the budget. The lack of transparency has been criticized by several Senators in recent months and prompted a statement from Senator Ralph Recto in 2011 asking for the Malampaya Fund to be included in the National Budget.[430]

However, lack of information on specific mining projects is endemic in the mining industry (including gold mining) in the Philippines, as highlighted by multiple scholars.[431] In fact, the 1995 Mining Act cites confidentiality as one of the incentives provided to mining companies.[432] The MGB website lists all the mining contracts that have been approved (including MPSAs, EPs, FTAAs etc.) but provides only some basic details on each project, such as the location and area of the project, the commodities being mined and the approval date, without providing critical details on the nature of the revenue-sharing arrangement. In addition, while mining companies have to submit environmental impact assessments (setting out the likely environmental consequences and potential mitigation measures) to the DENR prior to beginning mining operations, such assessments are viewed as confidential by the Philippines and not to be released without the consent of the mining company in question.[433] The DENR, and in particular the MGB and the EMB, have reportedly been tardy in disclosing mining information to the public in response to requests.[434]

While confidentiality provides a further incentive to companies to invest in the mining sector, the lack of transparency also plays a role in breeding local government and indigenous community opposition to mining projects.[435] In the absence of adequate information on mining projects, such stakeholders are likely to view mining projects with suspicion and hostility, especially given past environmental disasters such as the Marcopper tailing incident and the Rapu-Rapu cyanide release.

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430 GMA News (2011). Abad explains 'nature' of Malampaya funds. July 5, 2011; C. V. Esguerra (2011). Solons seek accounting of Malampaya fund. *Philippine Daily Enquirer*, September 16, 2011.
431 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.; Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
432 Congress of the Philippines (1995). Republic Act No. 7942, op. cit.
433 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
434 J. L. Aguilar (2008). Data Mining. *Newsbreak,* Special Issue, July-September.
435 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.; G. M. Bautista (2009). Economics of Philippine Mining, op. cit.

ACCOUNTABILITY

Multiple stakeholders are involved in the governance of Philippine mining (including gold mining), including the Congress, the Senate, the President, the Supreme Court, the DoE, the DENR, local government units and indigenous peoples. As such the regulatory process is characterized by a certain degree of accountability. In practice, direct decision-making authority in the mining regulatory regime is highly concentrated in the central government, in particular the President.[436] Although public participation and consultation is required in the environmental impact assessment (EIA) for each mining project, recent DENR Administrative Orders have weakened provisions for such participation in attempting to streamline the process.[437] Similarly, though the principle of Free and Prior Informed Consent (FPIC) requires the approval and participation of indigenous communities in mining projects, some mining companies (including gold mining companies) have carried out only token consultations and employed means such as deception, cooptation and coercion in order to gain the "consent" of indigenous people.[438] Accountability is enhanced by the existence of a well-developed NGO movement in the Philippines.[439]

Accountability is a central feature of the environmental impact study (EIS) for natural gas projects, with public participation playing a major role in the EIS process. While community consent was not originally mandated as part of the EIS, 1996 guidelines issued by DENR made public participation mandatory, while the 1997 Indigenous Peoples' Right Act (IPRA) ensured that public participation and the "social acceptability" criterion for approving projects involved the consent of communities, in particular that of indigenous people affected.[440]

A notable example of the accountability in the EIS process is provided by the Malampaya gas project, which is also the largest natural gas project in the Philippines. Malampaya was the first project in the Philippines that actively undertook a community consent process as part of its EIS. Engagement of community stakeholders by Shell begin in 1996, two years before the commencement of the project. There

436 Alyansa Tigil Mina National Secretariat (2009). Alternative Mining Bill: In brief, op. cit.
437 Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
438 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.
439 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
440 S. Herz, A. Vina and J. Sohn (2007). *Development Without Conflict: The Business Case for Community Consent*. World Resources Institute.

was initially strong opposition to the Malampaya project from local communities in Mindiro, Sitio Agusuhin, and Batangas City (all of which would be affected in some way or another by the construction of the project and the associated infrastructure). However, a social bargaining process between Shell and the local communities, involving in many cases the provision of grants and other compensation to the affected communities, led to most of the local communities granting consent to the project.[441] In cases where new stakeholders emerged as the EIS process was ongoing, Shell was generally responsive, holding additional consultations and meetings with these groups to address concerns raised. It should be noted though that the EIS process had its imperfections: for instance, the environmental compliance certificate (ECC) was issued without the prior approval of the Palawan Council for Sustainable Development, which is in charge of the management of Palawan's sensitive environment; while the consent granted to the projects was not entirely unanimous, with some communities withholding consent.[442] However, it is likely that this is more a reflection of the complexity of satisfying a large set of stakeholders rather than an inherent lack of accountability in the process.

Accountability of a different kind does exist, however, since groups excluded from the formal mining regulatory regime have been able to challenge the regime from the outside. Local government units, for instance, have taken advantage of provisions of the Local Government Code to withhold consent to mining projects and implement moratoriums banning mining. A well-developed NGO movement exists in the Philippines and has been able to provide opposition to mining both through the civil society sphere and via legal challenges.[443] The 1997 IPRA gives indigenous communities preferential rights and safeguards over natural resource exploitation within ancestral lands.[444] However, the fact that accountability is ensured from *outside* the mining regulatory regime, rather than being guaranteed within the process, has resulted in policy inefficiencies, such as the frequent legal challenges and societal disputes surrounding the 1995 Mining Act. A more devolved decision-making process for mining (such as with the Multi-Sectorial Mineral Council in the Mineral Resources Act proposed in 2009) would lead to accountability while avoiding such inefficiencies.

441 Herz et al. (2007). *Development Without Conflict*, op. cit.
442 J. L. Batongbacal (2008). EIA as the Start of a Social Bargaining Process: The Malampaya Deepwater Gas-to-Power Project. In K. Bosselmann, R. Engel and P. Taylor (2008). *Governance for Sustainability: Issues, Challenges, Successes.* IUCN.
443 W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
444 Alan Khi-Jeen Tan (2005). All That Glitters, op. cit.

Accountability is more limited, however, when it comes to revenue sharing. Local government units are entitled to 40% of the gross revenues derived by the national government from natural gas projects. There has been a persistent disagreement between the national government and the residents of Palawan province as to whether the Malampaya project lies within the maritime boundary of the province (which would entitle the province to a share of the proceeds). The policy of the national government and the DoE on this issue has changed a number of times over the years, but there is little evidence that the government is accountable to local stakeholders on this issue. For instance, an interim agreement on revenue-sharing was reached between local politicians and the central government in 2003 without holding any public consultations and ignoring opposition from civil society groups in Palawan.[445]

CORRUPTION AND REGULATORY CAPTURE

As a result of the lack of transparency and accountability, NGOs and indigenous communities frequently accuse the central government of favoring mining companies (including foreign ones) at the expense of the environment and the local population, which essentially amounts to a charge of "regulatory capture." [446] While the Mining Act of 1995 provides numerous incentives for mining companies, the extent to which this is a result of "regulatory capture", as opposed to being a deliberate policy to boost the mining industry and hence the economy, is difficult to gauge.

However, corruption and regulatory capture are general problems affecting government institutions in the Philippines. In November 2011, for instance, the Commission on Audit recommended the filing of graft charges against a former governor as well as members of the Provincial Bids and Awards Committee due to irregularities in the use of nearly 3 billion pesos in Malampaya funds and several questionable transactions carried out using these funds.[447]

In Transparency International's Corruption Perceptions Index 2011, the Philippines ranked 129th out of 182 countries; among ASEAN countries, only

[445] Castillo (2012), Oil and Gas Production in the Philippines, op. cit.
[446] See, for instance, Alyansa Tigil Mina National Secretariat (2009). Alternative Mining Bill: In brief, op. cit.
[447] Castillo (2012), Oil and Gas Production in the Philippines, op. cit.

Myanmar, Cambodia and Laos rank lower.[448] The economy is dominated by large family conglomerates which occupy important positions in the bureaucracy and the Congress; as such, businesses owned by these families can receive preferential treatment.[449] Given this backdrop, it is unlikely the mining industry is completely immune to problems of corruption and regulatory capture. A report by the Structural Adjustment Participatory Review International Network (SAPRIN), for instance, argued that the DENR is a highly graft-ridden and corrupt institution.[450]

QUALITY OF REGULATORY FRAMEWORK:

CLARITY OF REGULATIONS

Given that at least twenty statutes and regulations govern various aspects of mining in the Philippines, the regulatory regime often suffers from a lack of clarity. In cases where different regulations contradict each other, such as contradictions between the 1995 Mining Act and the 1997 IPRA as to the provisions surrounding the environmental approval process, it can be difficult to gauge which regulations take precedence over the other(s).[451] Moreover, it is also often unclear which regulatory authority has the power to overturn existing regulations. For instance, the DENR issued an administrative order stating that out of three local government units, the consent of only two of the units is required for mining projects to proceed, contradicting the Local Government Code and generating controversy as to whether the DENR was entitled to preempt a statute that had been passed by the Philippine Congress.[452]

Poorly defined property rights, in particular, have been an impediment to smooth development of Philippine mining of resources (including gold). For instance, while the 1997 IPRA gives indigenous communities preferential rights and safeguards over natural resource exploitation within ancestral lands, there remains considerable

[448] Transparency International (2011). Corruption Perceptions Index 2011. http://cpi.transparency.org/cpi2011/results/.
[449] Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
[450] Structural Adjustment Participatory Review International Network (SAPRIN) (2011). The Impact of Investment Liberalization and the Mining Act of 1995 on Indigenous Peoples, Upland Communities and the Rural Poor, and on the Environment: A summary report. Draft report presented at the Second National Forum on 5-6 April, Manila.
[451] Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
[452] W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.

uncertainty regarding the exact nature of the ownership of these resources, since the state can only exploit such resources following an FPIC procedure, as well as which lands can be said to constitute ancestral domains in the first place.[453] This is particularly problematic given that half of all areas identified in mining applications in the Philippines are subject to indigenous mining claims.[454]

A lack of clarity is not generally an issue with the regulatory regime of natural gas. In the upstream sector, for instance, a single regulation, the Petroleum Exploration and Development Act of 1972, is the main basis for governance. Although at least nine statutes govern the downstream industry, the DoE has implemented Interim Gas Rules containing regulatory mechanisms drawn from all of the relevant regulations. These Rules help to clarify the regulatory policies of the DoE.[455]

In the natural gas industry, poorly defined territorial jurisdiction and property rights, however, have sometimes been problematic. At the provincial level, for instance, there is controversy over whether the Malampaya gas field falls within the territorial boundaries of Palawan province. The Malampaya field lies in the sea between Kalayaan Island, a municipality of Palawan, and the main island, and is 230 km from the former and 80 km from the latter. Civil society groups in the province have claimed that this implies the field belongs to Palawan province, whereas the DoE and the Philippine government have claimed that the field lies outside Palawan's maritime boundaries.[456] There is currently a pending petition before the Supreme Court on whether the gas field lies inside or outside Palawan, but until the issue is settled the lack of clarity creates complexities over issues such as the sharing of revenue generated from the gas field.

In addition, while the 1997 IPRA gives indigenous communities preferential rights and safeguards over natural resource exploitation within ancestral lands, there remains considerable uncertainty regarding the exact nature of the ownership of these resources, since the state can only exploit such resources following an FPIC procedure, as well as which lands can be said to constitute ancestral domains in the first place.[457] This has not thus far been a major impediment to the governance of

[453] Alan Khi-Jeen Tan (2005). All That Glitters, op. cit.
[454] W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
[455] DoE (n.d.). Natural Gas Policy Paper, op. cit.
[456] Castillo (2012), Oil and Gas Production in the Philippines, op. cit.
[457] Alan Khi-Jeen Tan (2005). All That Glitters: Foreign Investment in Mining Trumps the Environment in the Philippines. *Pace Environmental Law Review.* Paper 515. http://digitalcommons.pace.edu/envlaw/515.

the natural gas industry thus far, given the predominance of offshore resources, but could become a future problem if more onshore gas resources are developed.

REGULATORY COHERENCE

The Department of Energy (DoE) is the main agency for the development of the natural gas industry. The Department of Energy Act of 1992 created the DoE and abolished the Office of Energy Affairs and the Energy Coordinating Council. In addition, it placed the Philippine National Oil Company (PNOC), the National Power Corporation (NPC), and the National Electrification Administration (NEA) under the supervision of the DoE.[458] In 2001, following the development of the Malampaya gas field, the President of the Philippines passed Executive Order No. 66 which designated the DoE as the lead agency for the development of the natural gas industry in the Philippines.[459] As a result of these regulations, there exists a certain amount of regulatory coherence since regulatory overlap is cut down and conflicts between different bureaus is avoided, given that the DoE is the main agency in charge. Regulatory clarity is further enhanced by having distinct sets of regulations for the upstream and downstream sectors of the natural gas industry, as discussed above.

Regulations governing mining (including gold mining) often overlap and contradict with one other. There is significant overlap of jurisdiction between the various agencies and levels of government in mining. While mining is governed by the DENR at the central level, its jurisdiction overlaps with that of other national level agencies such as the Department of Agriculture as well as that of the Local Government Units (LGUs). To some extent this is intentional by design and a product of the "checks and balances" systems, which has also meant that the Supreme Court is powerful and engages not just in strict legal interpretation, but can drift into policymaking as well.[460]

The resulting regulatory incoherence can be demonstrated by the conflict between local governments and the central government over mining approvals.

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458 Congress of the Philippines (1992). Republic Act No. 7638: An Act Creating the Department of Energy Rationalizing the Organization and Functions of Government Agencies Related to Energy and for Other Purposes.

459 Executive Order No. 66: Designating the Department of Energy as the Lead Agency in Developing the Philippine Natural Gas Industry, 2001.

460 Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.

In the aftermath of the Marcopper tailings incident, some local governments have withheld consent for mining projects and/or implemented moratoriums banning mining. In response, the DENR issued an Administrative Order minimizing the ability of local governments to withhold consent, which however did not materialize as it was adjudged to have pre-empted the Local Government Code. The DENR also asked the Department of Justice and the Department of Interior and Local Governments (DILG) for their opinions on the validity of the moratoriums, and while the Department of Justice declined to provide an opinion, the DILG issued an opinion stating that local government mining moratoriums are invalid.[461]

REGULATORY UNCERTAINTY

The model service contract specified in the 1972 Petroleum Exploration and Development Act has a broad stabilization provision. Essentially, this ensures that once a contract is signed, the contractor's rights will not be impaired, nor its obligations increased, by changes in Philippine laws and regulations and how they are implemented, introduction of new laws and regulations, or cancellation of existing laws and regulations.[462] This provision cuts down drastically on the uncertainty faced by investors in the natural gas industry and guarantees a certain level of fiscal stability, which is likely to provide an incentive for investment into the sector. Moreover, the laws and regulations in question have not been subject to frequent changes, further enhancing regulatory certainty. The 1972 Act, for instance, has only been modified once (in 1983) since its inception, and as described earlier the content of these changes were the inclusion of provisions for deep water drilling (an area that had been insufficiently covered in the original Act) and the granting of new incentives for investment into oil and gas exploration and production.

Regulatory certainty has been cited by mining companies as a strong deterrent to investing in the Philippines. The regulatory uncertainty is a result of multiple factors. Lack of clarity and regulatory incoherence means that there is uncertainty as to which regulations take precedence over others in cases where there is overlap, and how this might change over time as different agencies "come out on top" at different points in time (as with the aforementioned conflict between local government units and the DENR over the former's right to enact mining moratoriums). Policies

[461] W. N. Holden and R. D. Jacobson (2006). Mining amid decentralization, op. cit.
[462] Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.

and regulations are also subject to sudden reversals and about-turns, as with the 2004 Supreme Court ruling that FTAAs were unconstitutional and the subsequent overturning of the original ruling. The potential for such policy reversals leads to further regulatory uncertainty, especially over the status of mining contracts, creating a further deterrent to mining investment.

Frequent delays and lags in policy formulation and implementation are a further source of regulatory uncertainty. There have been significant delays in the release of streamlined and harmonized guidelines for the processing of Free and Prior Informed Consent (FPIC) certification, leading to legal uncertainty.[463] More recently, the Philippine Mineral Resources Act that was filed in 2009 is still pending in Congress, yet to be approved or rejected. Executive Order 79 that was passed earlier in 2012 has also suspended the granting of new mineral agreements pending new legislation to replace the 1995 Act. Given that there is no certainty about when any such legislation will be finalized, new or proposed gold mining projects, such as the $5.9 billion Tampakan project led by Xstrata and Indophil Resources (with one of the world's largest copper-gold deposits), face a highly uncertain regulatory environment.[464] This is likely to deter foreign investment in the gold mining sector and hamper the development prospects of the industry.

The flip side to the relatively certain regulatory environment faced by producers in the natural gas sector is that the flexibility of the government to adjust and tweak regulations and how they govern the natural gas industry is constrained. While fiscal stability performs a useful function by reducing uncertainty in investor returns, the justification for extending the stability provision to all laws and regulations (even if they do not affect the fiscal regime) is by no means clear. The International Monetary Fund (IMF) has consequently argued that the stability assurance should be narrowed and limited only to fiscal laws. The IMF has also suggested the imposition of a time limit of between five to ten years for the stability assurance.[465] Currently the stabilization provision is applicable for the full time period of the contracts, including any extensions, which is likely to impose serious constraints on the ability of the government to adjust regulations in response to changing circumstances.

463 Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
464 *Reuters* (2012). Philippine mining at policy crossroads as investment sputters. 23 September 2012.
465 Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.

ADMINISTRATIVE CAPACITY

In general, Philippine institutions of governance tend to lack administrative capacity, and things are no different when it comes to the governance of mining. Local governments typically lack the capability to estimate the projected benefits of mining. The DENR, and its constituent bodies the MGB and the NCIP, have limited administrative capacity, both due to insufficient budget and lack of experts who can handle complex matters of consent in indigenous communities and/or valuation of natural resources. Lack of capacity in the governance of mining has resulted in bureaucratic inefficiencies and delays in the approval of mining permits and the enforcement of mining regulations.[466]

Delays and lags in policy formulation and implementation are problematic in the Philippine context. There have been significant delays in the release of streamlined and harmonized guidelines for the processing of Free and Prior Informed Consent (FPIC) certification, leading to legal uncertainty;[467] however, this is yet to significantly impact the natural gas industry which is primarily based on the extraction of offshore resources. The Environmental Impact Study (EIS) process is extremely lengthy and time-consuming as it involves consultations with numerous stakeholders, including local government officials and regulatory agencies, indigenous communities and NGOs. In the case of the Malampaya project, for instance, Shell began the EIS process and the process of public consultation in 1996, but was only issued with the Environmental Compliance Certificate (ECC) in 1998, and was continuing public consultations and the process of gaining community consent as late as 1999.[468]

A further regulatory problem is the issue of law enforcement, especially in areas of the Philippines characterized by insurgency and militarization. The New People's Army (NPA), the armed wing of the Communist Party of the Philippines, has engaged in guerilla warfare against the Philippine state for over 40 years, and operates primarily in mountainous areas. Many mines are located in areas with NPA activity, and the NPA has in the past attacked mines, meaning that such mines face significant security risks.[469] Other rebel groups such as Abu Sayyaf and the Moro

[466] Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
[467] Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.
[468] Batongbacal (2008). EIA as the Start of a Social Bargaining Process, op. cit.
[469] W. N. Holden, K. Nadeau and R. D. Jacobson (2011). Exemplifying accumulation by dispossession: mining and indigenous
peoples in the Philippines. *Geografiska Annaler: Series B, Human Geography* 93 (2): 141–161.

Islamic Liberation Front also operate in mineral-rich areas. There is evidence that some mining companies pay money (referred to as "revolutionary taxation" by the NPA) to insurgent groups in order to avoid violent attack on their premises.[470]

ECONOMIC EFFICIENCY AND EQUITY

REVENUE-SHARING ARRANGEMENTS: NATURAL GAS

In Philippine, natural gas exploration and production is through service contracts, where the contractor provides the technology and service for a stipulated fee while the government provides the financing and retains ownership of all of the natural gas produced. The fiscal regime specified by the Act is a proceeds sharing regime, where all the costs of exploration and development and all operating costs are paid for from the sale of the natural gas produced, and the net proceeds (after deduction of the costs) is shared between the government and the contractor.[471]

A number of salient features of these service contracts are worth noting. Under the Act, a contractor's share of net proceeds, after operating expenses have been deducted, cannot exceed 40%. In such instances, the government is guaranteed at least a 60% share of net proceeds from natural gas projects. A Filipino Participation Incentive Allowance (FPIA) of up to 7.5% of gross proceeds is allowed when Filipino citizens and corporations participate in the contract; in this case the net proceeds are calculated after deducting both operating expenses and the FPIA, and the government is again guaranteed at least a 60% share of net proceeds.[472] The Malampaya service contract specifies an exact 60-40 sharing scheme of net proceeds, in line with the 1972 Act.[473] As such, the revenue-sharing arrangement ensures that the majority of *net proceeds* accrue to the government as opposed to the mining company, which is beneficial from the Philippine perspective.

However, service contracts specify a fixed share of net proceeds accruing to the government. Even if a contract turns out to be very profitable, and the

[470] W. N. Holden, and R. D. Jacobson (2007). Mining amid armed conflict: nonferrous metals mining in the Philippines. *The Canadian Geographer/Le Geographe Canadien,* 51(4): 475-500; Vivoda (2008). Assessment of the Governance Performance of the Regulatory Regime Governing Foreign Mining Investment in the Philippines, op. cit.

[471] President of the Philippines (1972), op. cit.; Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.

[472] President of the Philippines (1972), op. cit.; Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.

[473] Castillo (2012), Oil and Gas Production in the Philippines, op. cit.

contractor's share of net proceeds more than compensates for the opportunity cost of the capital invested, the government share of net proceeds remains fixed. Thus specifying a fixed share is unlikely to maximize the rent the government can extract from natural gas projects. Instead, the IMF has proposed a progressive fiscal regime, whereby increasing profitability is accompanied by an increasing government share of net proceeds.[474] This can be designed so as to allow governments to capture the largest portion of the windfall from increased productivity while continuing to provide sufficient incentives for contractors to increase operational efficiency and profitability.

Net proceeds are of course distinct from gross proceeds, and a net proceeds sharing scheme runs the risk that companies will extract a greater share of revenue by inflating their assessments of operating costs so as to minimize "net proceeds". This is to some extent mitigated by a 70% limit on operating expenses, meaning that operating expenses cannot account for more than 70% of gross revenue.[475] This guarantees the government at least an 18% share of gross revenue in service contracts signed with foreign companies. However, it has been argued that the 70% limit is too generous and should be lowered.[476] The IMF has also criticized the definition of operating expenses as too broad, since it allows contractors to recover financing charges for development and production operations. This implies that how the contractor chooses to obtain funds will affect the net proceeds and thus the amount of revenue accruing to the government.[477]

REVENUE-SHARING ARRANGEMENTS : GOLD

The most notable characteristic of the 1995 Mining Act is the very generous incentives it offers mining companies. As a result of the numerous incentives in place, the share of mining revenue that accrues to the Philippine government is typically low. Under mineral production sharing agreements, the total central government share is just the excise tax. Under FTAAs, the government share includes the excise tax as well as the corporate income tax, special allowance, taxes on dividend or interest payments to foreign shareholders, and other taxes and duties. However, the collection of the government share in FTAAs only begins

474 Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.
475 President of the Philippines (1972), op. cit.
476 Castillo (2012), Oil and Gas Production in the Philippines, op. cit.
477 Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.

after the company has fully recovered all its pre-operating expenses including exploration and development expenditures.[478] As such during the income tax holiday, the government share of revenues is the excise tax. For gold mining projects, the income tax holiday period can be particularly lengthy. For instance, CGA Mining Ltd., which operates the Masbate Gold Project (the largest in the Philippines), has received an income tax holiday of 6 years with the possibility of extending it by another two years.[479]

The implications of these revenue-sharing arrangements are explored by Bautista, who analyses the breakdown of revenues, costs and rents in typical mineral sharing agreements for four different types of mining projects (bauxite, copper & pyrite, nickel, and copper-gold).[480] In a typical copper-gold project carried out under an FTAA contract, non-labor and capital costs (including the opportunity cost of capital) account for 45% of total revenue. The bulk of the remainder of the revenue is shared between the central government and the mining company as rent, but the mining company's share of 29% of total revenue is considerably higher than the 19.6% share earned by the central government from various taxes and duties. The labor and management cost is 3.67%, the royalty to indigenous peoples and community development together amount to 1.23% and environmental expenditures are 1.58% of gross revenue. As such, there is also an asymmetry in the revenue-sharing between the central government and local communities, since only about 6.5% of gross revenue can be said to be directly benefitting local communities, offsetting the environmental harms from mining or creating employment.

The revenue-sharing arrangement is particularly skewed towards mining companies during tax holidays, since the central government's share drops to about 2% (from the mandatory excise duty) while the company's share of revenue increases to about 47%. It should also be noted that for minerals such as copper & pyrite and bauxite, the non-labor and capital cost component is much lower than for gold mining, at around 16-19% of gross revenue, while labor costs are much the same. As such, the share of revenue that accrues to the mining company as rent increases to 40-45%, while the central government share increases to 27-30%. However the share accruing to local communities remains well below 10%.

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[478] Congress of the Philippines (1995). Republic Act No. 7942, op. cit.
[479] See http://www.cgamining.com/projects.php?id=3.
[480] G. M. Bautista (2009). Economics of Philippine Mining, op. cit.

The asymmetry of the revenue-sharing arrangements is notable given the increasingly significant role of foreign gold mining companies in the Philippines, as discussed earlier. The asymmetry is also visible in national mining statistics. Between 2008 and 2011, the gross value added of the mining industry was P 307 billion, but taxes, royalties and fees extracted from mining amounted to P 51 billion, or about 16.5% of the gross value added. Given Bautista's analysis cited above, this is likely to be lower than the share of the gross value added that mining companies extract as rent. In addition, out of the P 51 billion of revenue collected by the government, only about P 3.37 billion (or about 7%) accrued to the local government, highlighting the asymmetry in revenue-sharing between the central and local governments.[481]

There are some indications that the existing revenue-sharing arrangements will be modified once new legislation comes in. The two House Bills pending in Congress propose a 10% tax on gross mining revenues, and at least 10% of revenues accruing to Indigenous Cultural Communities/Indigenous People (ICCs/IP) as royalty for mining carried out within ancestral domains, which would imply a radical shift in the revenue-sharing arrangements, though it remains to be seen whether they will be approved. The International Monetary Fund (IMF) has suggested that a 7% single levy be imposed on all mining operations in the Philippines (combining the 2% excise duty already in place with a new 5% royalty) and existing tax incentives (such as the tax holiday) abolished, and the Department of Finance has indicated that it will take the IMF's recommendations into account during the process for the formulation of new mining legislation.[482]

REVENUE MANAGEMENT AND DISBURSEMENT: NATURAL GAS

The revenue from the proceeds sharing fiscal regime goes to the Malampaya Fund maintained by the DoE and the Bureau of Treasury.[483] The fund is meant for expenditure on energy development projects and other purposes subject to presidential approval. As of May 2011, the Fund balance was approximately P 79.5 billion. Officially, P 2.9 billion of expenditures have been charged against the fund for purposes such as aversion of power shortages in off-grid areas, provision

[481] Mines and Geosciences Bureau (2012), op. cit.
[482] International Monetary Fund (2012). Philippines: Reform of the Fiscal Regimes for Mining and Petroleum. IMF Country Report No. 12/219, August 2012; I. C. Gonzales (2012). DOF studies IMF mining tax proposal. *The Philippine Star*, 13 August.
[483] Castillo (2012), Oil and Gas Production in the Philippines, op. cit.

of support to jeepney and tricycle drivers affected by rising oil prices, and the enhancement of the security of the Malampaya project. There is evidence to suggest that the management of these funds has not always been socially optimal, though. Irregularities have been identified by the Commission on Audit (CoA) in the use of almost P 3 billion of the Malampaya funds, with questionable transactions favoring certain contractors.[484]

Moreover, a consistent framework for the distribution of natural gas revenues received by the government among the various stakeholders is lacking as yet. According to the Local Government Code of 1991, local government units are entitled to 40% of the gross collection derived by the national government in any production-sharing agreement within their territorial jurisdiction. However, though Palawan province claims that 40% of the government revenues from the Malampaya project should accrue to it, the actual share received by Palawan has been 25% since 1998.[485]

Thus, fiscal stability for mining companies effectively comes at a distributional cost: since the contractor does not pay an assortment of taxes to different agencies and different levels of government, the government's entire share of net proceeds goes directly to the centrally controlled Malampaya fund. In the absence of a framework to ensure that these funds are equitably distributed (including to local government units), this leads to a socially sub-optimal state of affairs where most of the revenue remains with the central government and there is a heightened risk of corruption and regulatory capture (particular given the lack of transparency when it comes to revenue management).

INCENTIVES FOR INVESTMENT : NATURAL GAS

A positive feature of natural gas service contracts is their provision of fiscal stability. The 30% Corporate Income Tax (CIT) is paid out of the government share, while the contractor is exempt from all other national taxes (including the excise tax) and is also exempt from levies, tariffs, duties, and value-added tax on imports of machinery, equipment, spare parts, and materials required for natural gas operations.[486] Superficially such an arrangement might be seen as giving excessive

484 Ibid.
485 Ibid.
486 President of the Philippines (1972), op. cit.; Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.

benefits to the contractor. In actual fact, because the government still has the discretion to adjust its share of net proceeds upwards above 60% when negotiating a particular contract, this arrangement implies that the government can obtain the maximum share of revenue that is feasible while at the same time ensuring fiscal stability for the contractor. Because the government's revenues come only from its share of net proceeds, the contractor is not subject to uncertainty of earnings resulting from, for instance, frequent adjustments in domestic tax policy. This is likely to create positive incentives for investment in the natural gas production sector at little or no cost to government revenue from individual projects.

The FPIA, however, is unlikely to be effective as an incentive for Filipino participation due to design flaws. The FPIA slides between 1.5% and 7.5% as Filipino participation slides between 15% and 30%.[487] Since the FPIA is capped at 7.5%, the FPIA provides no incentive for Filipino participation at more than 30%, and thus is an incentive for only very limited Filipino participation. Moreover, because the FPIA accrues to all participants in the contract, including the foreign participants, most of the FPIA subsidy will accrue to foreign participants. Thus the FPIA results in a transfer of wealth from the government largely to the foreign contractors while providing at best a very limited incentive for domestic participation, and is therefore unlikely to be the optimal tool for incentivizing domestic investment in the natural gas sector.

INCENTIVES FOR INVESTMENT : GOLD

As highlighted above, the revenue-sharing arrangement in Philippine mining (including gold mining) is typically skewed towards the mining companies, which is sub-optimal (particularly in the case of foreign mining companies) purely from the point of view of maximizing state rents from mining. Such incentives might still be economically justified if the resulting growth in the mining sector, increased inflows of FDI and spillover effects on the rest of the economy lead to economic benefits that outweigh the loss in the rent extracted directly from the mines.

However, the evidence suggests that this is unlikely to be the case. Mining does make a significant contribution to foreign direct investment (FDI), accounting for $277.5 million or 32.7% of the total FDI in 2010.[488] It remains unclear, though, how

[487] Sunley et al. (2012). Reform of the Fiscal Regimes for Mining and Petroleum, IMF, op. cit.
[488] Y. Fong-Sam (2012), op. cit.

much of the investment remains in the Philippines to generate employment and economic growth, and how much returns to foreign investors (and how quickly).[489]

Moreover, the mining industry's contribution to GDP is limited, accounting for only 1% of GDP in 2010 and 2011. Only about 0.6% of overall employment is accounted for by the mining sector, highlighting the capital-intensive nature of the activity.[490] Mining's contribution to exports is relatively higher, at around 5-6% of overall export revenues.[491] Finally, spillover effects, or the mining industry's contribution to economic growth in other sectors of the economy, are relatively low. In part this is because mining generates a low level of employment, thus constraining any multiplier effects on the rest of the economy. In addition, mining has a backward linkage index of 0.46, implying that there is little input from other domestic industries, and a forward linkage index of 0.82, implying that the sector is below average when it comes to generating further domestic activities.[492]

EXTERNALITIES

The production of natural gas and mining, including gold mining, generates environmental and social externalities i.e. costs that, in the absence of intervention, would not be taken into account by the contractors in their decision-making process. The existence of negative externalities in itself is not a reason to reject the development of natural gas resources. An optimal social outcome instead requires that all such costs be taken into account in deciding whether to pursue resource extraction and how. There is evidence that such costs are significant. According to the Philippine National Statistical Coordination Board (NSCB), the negative environmental costs from mining increased from P 250 million in 1992 to almost P 600 million in 1996.[493] While more updated figures are not available, there have been costly environmental accidents such as the Marcopper tailings incident (1996) and the cyanide leaks from the Rapu-Rapu cooper-gold mine (2005), as well

[489] Ateneo School of Government (2011). Is There a Future for Mining in the Philippines? Policy Brief, December.
[490] Y. Fong-Sam (2012), op. cit.
[491] Mines and Geosciences Bureau (2010, 2011), op. cit.
[492] C. Habito (2010). An Agenda for High and Inclusive Growth in the Philippines. Asian Development Bank, Mandaluyong, Philippines. Backward linkage effects refer to the provision of input for a given activity. Forward linkage effects exist when the outputs from a given activity will induce attempts to use this output as inputs in some new activities. See I. Drejer (2002). Input-Output Based Measures of Interindustry Linkages Revisited- A Survey and Discussion. Centre for Economic and Business Research, Ministry of Economic and Business Affairs, Copenhagen, Denmark, July.
[493] Ateneo School of Government (2011). Is There a Future for Mining in the Philippines? op. cit.

as numerous reports of adverse health impacts associated with mining.[494] These suggest that the negative environmental impacts of mining remain significant. There are also social externalities associated with mining, such as the displacement of indigenous communities from their ancestral lands and the disunity engendered in such communities by mining.[495]

While there are procedures in place to ensure that such negative externalities are taken into account by mining companies, such procedures have not been very effective. The 1995 Mining Act requires miners to carry out Environmental Impact Assessments (EIAs) before they can be awarded the clearance certificate to begin mining.[496] As described earlier, though, recent DENR Administrative Orders have weakened provisions for participation by local and indigenous communities in the EIA process, meaning that the ability of the process to fully internalize the environmental externalities (which are largely borne by these stakeholders) is lessened. Researchers have argued that the EIA system, as it has been applied in the Philippines, often gives merely the appearance of respecting the environmental impacts of mining without making any serious effort to mitigate such impacts. As such, international mining companies have actually viewed environmental regulations in the Philippines as something that would *encourage* mining.[497] Similarly, while Free and Prior Informed Consent (FPIC) procedures would in principle ensure that the social costs of mining to indigenous communities would be factored in, the fact that some mining companies have carried out only token consultations and employed means such as deception, cooptation and coercion in order to gain the "consent" of indigenous people means that social externalities are likely to remain unaccounted for.[498]

Companies are required to conduct an Environmental Impact Study (EIS) and receive an Environmental Compliance Certificate (ECC) from the DENR before they can pursue natural gas production. As companies have to abide by environmental regulations and guidelines to receive an ECC, they have to ensure that the environmental costs of their projects are not overly high. More significantly, public participation is an integral component of the EIS process, and companies are

494 *Ibid*.
495 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.
496 Congress of the Philippines (1995). Republic Act No. 7942, op. cit.
497 W. N. Holden, K. Nadeau and R. D. Jacobson (2011). Exemplifying accumulation by dispossession, *op. cit.*
498 R.D. Rovillos, S.B. Ramo, and C. Corpus (2003). Philippines: When the "Isles of Gold" turn to isles of dissent, op. cit.

required to actively engage affected communities and obtain their consent before they can be issued with an ECC. In effect this means that the company is forced to internalize the external costs of the project, often by agreeing to compensate local communities for any damages caused in order to obtain their consent.

In the EIS for the Malampaya project, for instance, Shell provided a US$ 1 million grant to Mindoro, monetary compensation to residents in Sitio Agusuhin who were forced to relocate, and preferential hiring for members of a number of affected communities.[499] Further evidence for "internalization" of external costs comes from the fact that after carrying out public consultations, Shell made the decision to locate the gas pipeline entirely offshore rather than route it over the island of Mindoro, even though it would be three times as expensive, in order to avoid affecting the rich biodiversity of the island.[500]

Shell has estimated that the total cost of engaging the affected communities and gaining their consent was $6 million, only 0.13% of total project costs. By contrast, the cost of project delays from protests and litigation that would be inevitable in the absence of a properly conducted EIS process have been estimated at $50-72 million, a figure which does not even include the higher negative external costs incurred by local communities.[501] Thus, the benefits of the EIS process go beyond avoiding undue negative social and environmental externalities, and include in addition the avoided costs of conflict between the contractors and indigenous communities.

AWARDING OF NATURAL GAS CONTRACTS

The Petroleum Exploration and Development Act of 1972 is flexible as to the awarding process for contracts. The Department of Energy has the option of either offering areas for public bidding and selecting the best offer (based on a "weighted" assessment of the different aspects of each bid), or entering directly into negotiations with a company.[502] As discussed in the introduction, direct negotiations lack transparency, carry a heightened risk of corruption and are unlikely to result in a competitive awarding process. However, in recent years there has been an increasing shift away from direct negotiations and towards a public bidding process. The Philippine held its first Petroleum Public Contracting Round (PCR 1) in

499 Herz et al. (2007). *Development Without Conflict*, op. cit.
500 Batongbacal (2008). EIA as the Start of a Social Bargaining Process, op. cit.
501 Herz et al. (2007). *Development Without Conflict*, op. cit.
502 President of the Philippines (1972), op. cit.

2003.[503] In 2011, the DoE launched the Fourth Philippine Energy Contracting Round (PECR 4), offering 15 blocks for oil and gas exploration.[504] The DoE has also issued a number of circulars in recent years reiterating that the awarding of contracts for natural gas (and oil) exploration is to be through public bidding procedures such as the Philippine Energy Contracting Round. The switch away from direct negotiations towards public bidding is likely to increase transparency and competition in the bidding process, thus reducing the potential for corruption as well as increasing the likelihood that a socially optimal outcome will be achieved.

In the Philippine context, public bidding procedures (which are currently the norm) are likely to be superior to auctions. Public bidding allows the DoE to compare proposals based on a weighted assessment of multiple (and often conflicting) criteria, rather than looking at the government's share of revenue alone (as would be the case in a typical auction). Given the complicated political and social backdrop of the Philippines, with NGOs, indigenous communities and local government units playing a significant role, the benefits from taking multiple criteria into consideration should outweigh the price competition and transparency benefits afforded by auctions.

ECONOMICS OF SCALE in gold mining

The majority of gold is still produced through small-scale mining, but small-scale mining has been declining in recent years, as stated earlier. There are ECONOMICS OF SCALE in gold mining. For instance, exploration rights granted over large areas increase the probability that the mining company will find some deposit.[505] As such, the risk of conducting costly exploration activities without finding any deposit is reduced, increasing the incentive to carry out mining exploration activities and thus increasing the likelihood that mining deposits that are optimal to develop from society's point of view will in fact be developed. In this respect, the 1995 Mining Act, which grants exploration and mineral permits for areas of up to 81,000 hectares, is more likely to result in favorable ECONOMICS OF SCALE being exploited than the House Bills currently pending in Congress whose area is limited to 500 hectares.

[503] A. Y. Armonio-Magbanua (2006). The Philippine Energy Contracting Round. CCOP Petroleum Policy and Management Project (PPM), Petroleum Resource Development Division (PRDD), Department of Energy, March.
[504] DoE (2011). Fourth Philippine Energy Contracting Round. Accessed at http://www.psg.deloitte.com/NewsLicensingRounds_PH_110511.asp.
[505] G. M. Bautista (2009). Economics of Philippine Mining, op. cit.

Large mining companies with longer time horizons and reputations to protect have a greater incentive to abide by environmental regulations than small-scale miners who are less responsive to public criticism and may simply be looking to make a quick profit. Small-scale miners are also more difficult to regulate especially by capacity-constrained government agencies such as the DENR.[506] As such, small-scale gold mining can also result in greater social and environmental costs than large-scale mining. For instance, the use of child labor is common in small-scale mining, while the crude mining methods used result in unsafe working conditions and mercury pollution.[507] Against these must be set the fact that encouraging small-scale mining allows a less unequal distribution of the benefits of mining than large-scale mining (especially by foreign companies). The People's Small-Scale Mining Act of 1991, which regulates small-scale mining in the Philippines, gives due credence to the latter but contains very limited provisions on environmental regulation of small-scale mines and does not specify any environmental assessment procedure.[508]

506 B. Natividad (2012). Small-scale miners in 30 provinces account for 70% of mined gold- MGB. *InterAksyon,* 6 January.
507 UNEP (2010). Health and Environmental Impact of Mercury in Small-Scale Gold Mining in the Philippines. UNEP-DENR Global Forum on Artisanal and Small-Scale Gold Mining, 7-9 December 2010; *The Philippine Star* (2012). Child labour rampant in small-scale mining. 25 July.
508 Congress of the Philippines (1991). Republic Act No. 7076: An Act Creating A People's Small-Scale Mining Program and For Other Purposes, http://www.chanrobles.com/republicactno7076.htm#.UGWFXex69QI.

3.1 NATURAL GAS AND GOLD IN THE PHILIPPINES

Key Findings

- The Philippines consumes all of the gas it produces. Gas production has increased steadily since 2001 when the Malampaya gas project began operating.
- Among a number of major stakeholders in the natural gas industry, the Department of Energy has been designated as the lead agency for the development of the industry. The major regulation is the Petroleum Exploration and Development Act of 1972, which authorize the granting of service contracts for the extraction of petroleum (including natural gas).
- The Philippines is well-endowed with mineral resources, including gold, but remains a relatively small producer of gold. Recent years have been marked by the growing role played by foreign companies in the sector.
- The key regulation underlying the governance of gold mining is the 1995 Mining Act, which created new types of production-sharing contracts called Financial or Technical Assistance Agreements (FTAAs) and provided a range of fiscal and non-fiscal incentives to miners. A recent Executive Order has suspended the granting of new mineral agreements pending new legislation to replace the 1995 Act.

Transparency and accountability

- The natural gas industry is reasonably transparent with regards to transactions between the government and the mining companies, and transparency is enhanced by the use of public bidding procedures. There is, however, a perceived lack of transparency in the collection and disbursement of revenue earned from natural gas production.
- The regulatory process is characterized by a certain degree of accountability, with multiple stakeholders involved and a well-developed NGO movement existing in the Philippines. Accountability is a central feature of the environmental impact study (EIS) for natural gas projects, with public participation playing a major role in the EIS process. Accountability is more limited, however, when it comes to revenue sharing.

- While there is some degree of transparency, information on specific mining projects is confidential. The lack of transparency contributes to local government and indigenous community opposition to gold mining projects.
- Multiple stakeholders are involved in gold mining governance, but in practice the decision-making authority is concentrated in the central government. Accountability of a different kind does exist, however, since groups excluded from the formal mining regulatory regime have been able to challenge the regime from the outside through the Local Government Code, civil society and the courts, and Indigenous Peoples' Right Act (IPRA) of 1997.
- Corruption and regulatory capture are general problems affecting government institutions in the Philippines, including those involved in gold mining governance such as the Department of Energy and Natural Resources (DENR).

Quality of the regulatory framework

- Lack of clarity is not generally an issue with the regulatory regime of natural gas, but poorly defined property rights and territorial jurisdiction have sometimes been problematic.
- Given that the DoE is the main agency in charge, there exists a certain amount of regulatory coherence since regulatory overlap is cut down and conflicts between different bureaus are avoided.
- Regulatory certainty has been enhanced by broad stabilization provision in the model service contract specified in the 1972 Petroleum Exploration and Development Act as well as by the fact that the laws and regulations have not been subject to frequent changes. However this has constrained the flexibility of the government to adjust and tweak regulations.
- In mining, including gold, regulatory regime often suffers from a lack of clarity given that at least twenty statutes and regulations govern various aspects of mining in the Philippines and property rights are often poorly defined.
- There is significant overlap of jurisdiction between the various agencies and levels of government in mining, and regulations governing gold mining often overlap and contradict with one other.

- Regulatory certainty has been cited by mining companies as a strong deterrent to investing in the Philippines, with frequent delays and lags in policy formulation and implementation a major source of uncertainty.
- Administrative capacity is limited, with local governments typically lacking the capability to estimate the projected benefits of mining and the DENR having limited administrative capacity.
- Delays and lags in policy formulation and implementation are problematic in the Philippine context.

Economic efficiency considerations

- The natural gas revenue-sharing arrangement embodied in the service contracts ensures that the majority of *net proceeds* accrue to the government as opposed to the mining company, which is beneficial from the Philippine perspective. A shortcoming is that a fixed share of net proceeds accrues to the government, constraining the ability of the government to increase rent when profitability is high. The cost recovery limit of 70% is likely to be too generous and there is a very broad definition of what can be counted as operating expenses.
- A positive feature of natural gas service contracts is their provision of fiscal stability, which is likely to create positive incentives for investment in the natural gas production sector at little or no cost to government revenue from individual projects. The Filipino Participation Incentive Allowance (FPIA), however, is unlikely to be effective as an incentive for Filipino participation due to design flaws and will result in a transfer of wealth largely to foreign contractors.
- There is evidence to suggest that the management of the Malampaya funds has not always been socially optimal, and a consistent framework for the distribution of natural gas revenues received by the government among the various stakeholders is lacking as yet.
- An effective environmental impact assessment process exists in the Philippine natural gas industry. In the case of the Malampaya project, the costs of the EIA process and the accompanying process of engaging affected communities and gaining their consent were minimal, while the benefits from avoiding negative environmental externalities and avoiding conflict between contractors and local communities were considerable.

- The recent switch away from direct negotiations towards public bidding is likely to increase transparency and competition in the bidding process, thus reducing the potential for corruption as well as increasing the likelihood that a socially optimal outcome will be achieved.
- The revenue-sharing arrangements in gold mining are skewed towards mining companies, with mining companies capturing 29% of total revenue as opposed to around 25% of revenue captured by the central government, local government, workers and managers, and indigenous people and local communities. This is sub-optimal from the point of view of maximizing state rents from mining.
- Despite the numerous incentives for increased investment in the gold mining sector, the direct contribution of gold mining (and mining in general) to the economy has been limited, and spillover benefits are comparatively low.
- There are significant and legitimate concerns about the domestic sharing of benefits from gold mining, with few benefits accruing to local governments and indigenous communities affected by mining operations.
- There is evidence that the negative environmental and social externalities of mining are significant. While there are procedures in place to ensure that such negative externalities are taken into account by mining companies, such procedures have not been very effective.
- The 1995 Mining Act, which grants exploration and mineral permits for areas of up to 81,000 hectares, is more likely to result in favorable ECONOMICS OF SCALE being exploited than the House Bills currently pending in Congress whose area is limited to 500 hectares.

Recommendations

- To increase transparency, the Malampaya Fund should be included in the National Budget and expenditures from the Fund should be recorded separately. Accountability should also be increased by introducing procedures for parliamentary oversight as to how the funds are spent.
- While fiscal stability performs a useful function by reducing uncertainty in investor returns, the justification for extending the stability provision to all laws and regulations (even if they do not affect the fiscal regime) is by no means clear. The stability assurance should be narrowed and limited only to fiscal laws and a time limit of between five to ten years should be imposed

for the stability assurance to improve the ability of the government to adjust regulations in response to changing circumstances.

- A progressive fiscal regime should be adopted, whereby increasing profitability is accompanied by an increasing government share of net proceeds, allowing the government to capture the largest portion of the windfall from increased productivity. The cost recovery limit should be reduced from 70% so as to increase incentives for companies to limit operating costs, while the ineffective FPIA should be scrapped.
- While equity in revenue-sharing is emphasized in regulations such as the Local Government Code, equitable revenue-sharing should be implemented in practice as well and the dispute over whether 25% or 40% of the Malampaya revenue should accrue to Palawan province should be rapidly resolved in accordance with the laws.
- The governance process would benefit from increased transparency; in particular, greater transparency could play a role in reducing local government and indigenous community suspicions regarding gold mining projects.
- A more devolved decision-making process for mining (such as with the Multi-Sectorial Mineral Council in the Mineral Resources Act proposed in 2009) would lead to accountability while avoiding the inefficiencies of the current regulatory structure, where the conflicts between the central government and other stakeholders impede regulatory effectiveness and create regulatory uncertainty.
- The process for the adoption of a new legislative framework to replace the 1995 Act needs to be accelerated. The current moratorium on the granting of new mineral agreements has led to significantly greater investor uncertainty.
- The revenue-sharing arrangements in the Philippines should be modified so that the government captures a greater share of the mining revenue, as the present structure results in little contribution made by gold mining to the economy either directly or indirectly.
- Equity in revenue-sharing needs to be emphasized to a much greater degree, and the share of benefits accruing to local governments and communities affected by mining should be increased. This has to be done both by increasing the revenue share accruing to them and by strengthening the procedures in place to ensure that such negative externalities are taken into account in decision-making.

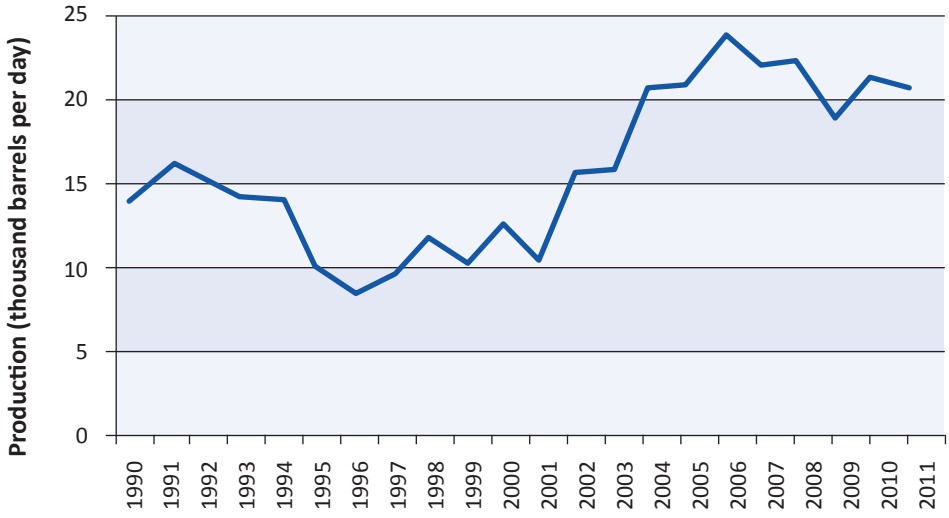
MYANMAR

OIL AND COPPER

OIL AND COPPER IN MYANMAR

Oil production in Myanmar stagnated in the 1990s, with production declining sharply in the early 1990s, as Figure 5.1 shows. In more recent years, though, there has been a steady increase in oil production in Myanmar. In the last few years, production has been at around 20,000 barrels per day, nearly double its level of around 10,000 barrels per day in the mid-1990s.

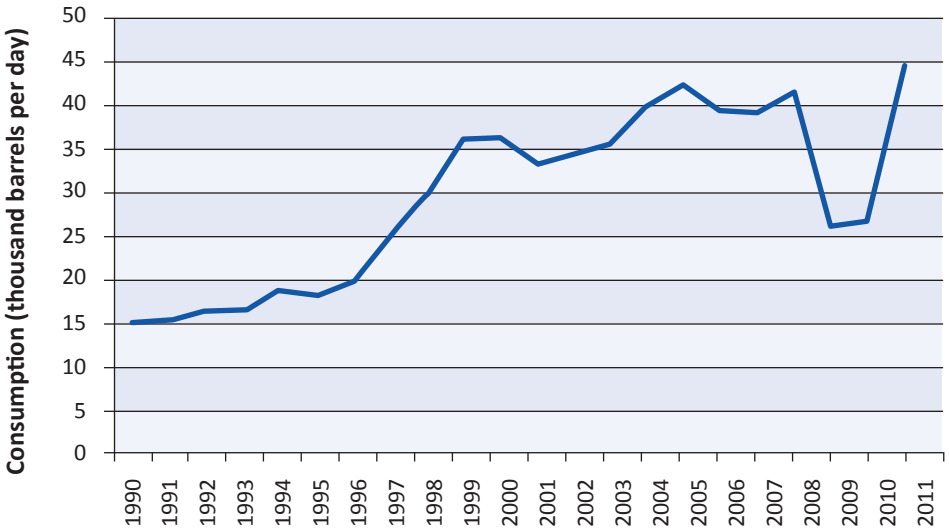
Figure 5.1 Total Oil Production in Myanmar 1990-2011 (thousand barrels per day)



Source: Energy Information Administration (EIA), USA (2012). International Energy Statistics.

Despite recent increases in oil production, though, Myanmar remains a net importer of oil and petroleum products. Figure 5.2 below shows Malaysia's consumption of oil and petroleum products in the 1990-2011 period. A comparison of Figure 6.3.1 and Figure 6.3.2 illustrates that oil consumption has risen faster than oil production, with growth particularly rapid in the late 1990s (the same period during which Malaysian oil production declined). Oil consumption fell considerably in 2009 and remained at that level in 2010, but bounced back to 2008 levels by 2011. As such Malaysia is a net oil importer: while it produced around 20,800 barrels of oil per day in 2011, its total petroleum consumption in the same year was 45,000 barrels per day.

Figure 5.2 Total consumption of oil and petroleum products in Myanmar, 1990-2011



Source: Energy Information Administration (EIA), USA (2012). International Energy Statistics.

Myanmar's proved oil reserves amount to 50 million barrels.[509] This is by no means considerable and is much lower, for instance, than proved oil reserves in countries such as Brunei and Thailand.[510] However, it is likely that proved oil reserves underestimate the potential for oil production that exists in Myanmar, given that systematic exploration activities are yet to take place in much of the country's oil-rich basins. In fact, 11 out of 17 onshore and offshore oil-rich basins in Myanmar are either lightly explored or completely unexplored. Once these are taken into account, potential oil reserves could amount to as much as 3.2 billion barrels, though it should be stressed that it is quite unknown at the moment how much of that is technically and economically feasible to extract.[511]

Foreign investors' interest in the Myanmar's oil upstream sector has surged in the last year: most recently, in October 2012, Woodside Petroleum reached a deal to explore for oil and gas in Myanmar with South Korea's Daewoo International Corp in Block AD-7 in the Rakhine Basin.[512] In the last year, Myanmar has invited firms to

[509] Energy Information Administration (EIA), USA (2012). International Energy Statistics.
[510] BP (2012). Statistical Review of World Energy June 2012.
[511] J. Opdyke (2012). Oil Companies from Around the World Want Access to Myanmar But I've Already Found the Way In… . The Sovereign Investor, 25 June.
[512] Reuters (2012). Australia's Woodside moves into Myanmar to seek oil, gas. 18 October 2012.

bid for its onshore and offshore oil and gas reserves, a process dominated by Asian companies.[513] (Reuters, 22 Mar 2012). State-owned Myanmar Oil and Gas Enterprise has inked nine agreements since March 2012 to allow firms from Asia and Europe (including PETRONAS from Malaysia and PTTEP from Thailand) to explore for oil and natural gas.[514] Up to 18 onshore oil and gas blocks are expected to be offered in a global tender to be launched in the second half of 2012; however the tender was delayed in September 2012, although Myanmar still plans to hold the tender by the end of 2012.[515] In addition, oil and natural gas pipelines have been planned linking the deep-water port of Kyaukpyu to Kunming in Yunnan province of China.[516]
The significance of foreign investment in the oil and gas sector is underscored by the fact that in the 2010/2011 fiscal year, such investment amounted to USD 10.18 billion or more than half of the country's foreign direct investment (FDI) in that year.[517]

Copper in Myanmar is found in the gold-copper-iron belt according to the Department of Geological Survey and Mineral Exploration.[518] The bulk of the 678,528 square kilometer country's 115 copper deposits are centrally located in regions such as Shangalon, KyesinTaung, SabeTaung, Letpadaung, Laymyetna, Sinbo-Nankesan, Bawdwin, Panmakut Manna, Panpwe KyaukTaung, and Kweeight.[519] The copper ores at these locations contain anywhere from 0.7% to 4% copper. The Department of Geological Survey and Mineral Exploration put Myanmar's recoverable copper reserves at around 1990 million tons.[520] This is a small proportion of the world's recoverable reserves with the U.S. Geological Survey reporting a total reserve base of 1.6 billion tones as of 2005.[521]

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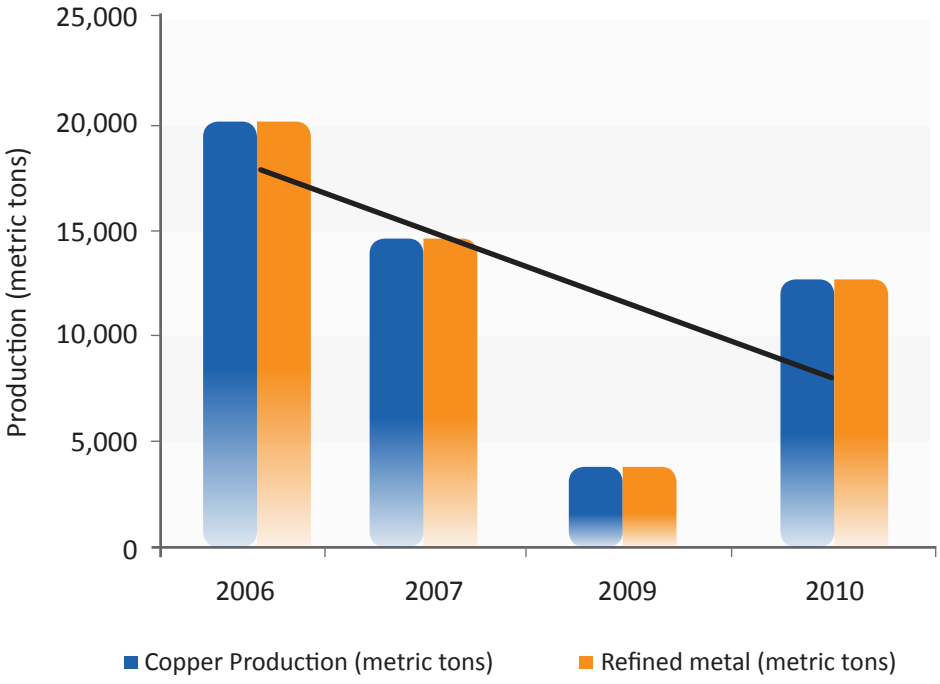
513 Reuters (2012). Myanmar still not open on oil, gas wealth – activists. 22 March 2012
514 AFP (2012). Myanmar inks oil deals with foreign firms. 20 June 2012.
515 Reuters (2012). Myanmar to offer up to 18 oil blocks in next tender. 20 June 2012; Reuters (2012). Exclusive: Myanmar delays energy tender to improve transparency. 5 September 2012.
516 USGS (2012). The Mineral Industry of Burma.
517 Arakan Oil Watch (2012). Burma's Resource Curse: The case for transparency in the oil and gas sector. March 2012.
518 Please see http://www.mining.com.mm/9.ME-1/1.ME-1/Details.asp?submenuID=11&sid=38.
519 Lwin, S. (2012). "Database Building in the Ministry of Mines," Department of Mineral Survey and Geological Exploration, The Republic of the Union of Myanmar.
520 *Ibid.*
521 Biello, D (2005). "Measure of Metal Supply Finds Future Shortage," Scientific American.

Figure 5.3 Myanmar's annual copper production (2006–2010)



Source: The Mineral Industry of Myanmar in 2010, United States Geological Survey (USGS) Mineral Resources Program**.** *Please note that the figures for 2008 are unavailable.*

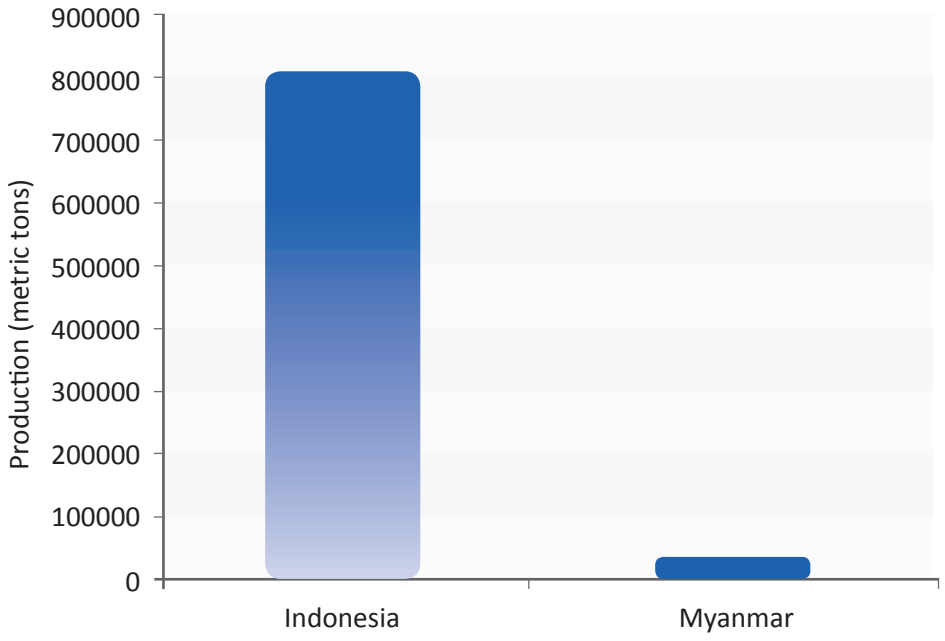
Myanmar's copper output in 2010 was nearly 69% of its 2006 level, falling from 19,500 metric tons to 12,000 metric tons (see Figure 5.3 above). This is a nearly 11.4 percent decrease in copper production on a compounded basis.[522] Over this period, world production of copper grew approximately 1.8% per annum.[523] This means that Myanmar's share in global copper production has been steadily declining in the past few years. The copper industry faced a severe decline in 2009 before recovering in 2010. This sudden dip in production was noticed in Myanmar's other mineral sectors as well such a tin and tungsten.[524] Refined copper output matched its production over the aforementioned period (see Figure 5.1

[522] The Mineral Industry of Burma (Myanmar) in 2010, United States Geological Survey (USGS) Mineral Resources Program; author's calculations.
[523] United States Geological Survey (USGS), Mineral Commodity Summaries 2006, 2007, 2009, and 2010; author's calculations.
[524] The Mineral Industry of Burma (Myanmar) in 2010, United States Geological Survey (USGS) Mineral Resources Program

above) unlike the situation in Indonesia where most of the raw ore is exported for processing elsewhere.

Myanmar's copper output is small compared to Indonesia's. As Figure 5.4 shows, Indonesia's copper output of 817,789 metric tons was nearly 4200 times the 19500 metric tons that Myanmar produced in 2006.[525] Despite its relatively small size, copper is considered an important mineral resource in the country. The Ministry of Mines categorizes its mineral endowments into five categories and copper is placed in the "high" category after gemstones for which Myanmar is well known.[526]

Figure 5.4 Comparison of Indonesia's and Myanmar's copper output (2006)



Source: The Mineral Industry of Indonesia in 2007, The Mineral Industry of Myanmar in 2007, United States Geological Survey (USGS) Mineral Resources Program**; author's calculations**

[525] The Mineral Industry of Burma (Myanmar) in 2006, United States Geological Survey (USGS) Mineral Resources Program; The Mineral Industry of Indonesia in 2006, United States Geological Survey (USGS) Mineral Resources Program; author's calculations.
[526] Lwin, S. (2012). "Database Building in the Ministry of Mines," Department of Mineral Survey and Geological Exploration, The Republic of the Union of Myanmar.

The following section provides the historical context in which the policies and regulations governing the copper industry in Myanmar were instituted.

EVOLUTION OF OIL INDUSTRY AND REGULATORY FRAMEWORK

Myanmar is among the oldest oil producers in the world, with its first exports of oil in 1853. The first foreign oil company to operate in Myanmar, the Rangoon Oil Company, was created in 1871. Between 1886 and 1963, the country's oil industry was dominated by Burmah Oil Company (BOC), which discovered the Yenangyaung field in 1887 and the Chauk field in 1902. Both fields are still in production.[527] In 1963, shortly after a military regime came into power in Myanmar, the country's oil industry was nationalized. The Myanmar Oil and Gas Enterprise (MOGE) was established in that year as a 100% state-owned enterprise, and after a short-lived venture agreement, Burmah Oil Company agreed to sell its oil interests in Myanmar.[528] Since 1963, the petroleum industry has been operated by Myanmar nationals only, with foreign companies able to participate through production-sharing contracts.[529]

The regulatory body in charge of the oil sector in Myanmar is the Ministry of Energy (MoE), which is the coordinating body for all types of energy. The MoE consists of a Minister's Office, the e Energy Planning Department and three enterprises. Myanmar's state-owned oil and gas company, MOGE, is one of three enterprises under the MoE. The other two are the Myanmar Petrochemical Enterprise (MPE) and the Myanmar Petroleum Products Enterprise (MPPE). The MoE is responsible for carrying out "exploration and production of crude oil and natural gas, refining, manufacturing of petrochemicals and transportation, distribution of petroleum products."[530]

The Minister's Office in the MoE is responsible for supervising and administrating of the department and the various enterprises under Ministry of Energy, as well

[527] Total (2012). Oil and Gas in Myanmar. Accessed at http://burma.total.com/Myanmar-en/oil-and-gas-in-Myanmar/oil-and-gas-in-Myanmar-900130.html.
[528] The Myanmar Times (2007). The coloured history of the Burmah Oil Company. Accessed at http://www.mmtimes.com/feature/energy/01.htm.
[529] U Kyaw Nyein (n.d.). Country Report for Myanmar. Union of Myanmar, Ministry of Energy.
[530] Ministry of Energy, Myanmar (2012). The Ministry of Energy ("MOE"). Accessed at http://www.energy.gov.mm/index.php/en/about-moe.

as for coordinating and cooperating with other ministries and organizations.[531] The Energy Planning Department (EPD) is the technical arm of the MoE and is responsible for formulating energy policy within the Ministry of Energy and coordination, discussion and negotiation of the Energy Development Program.[532]

The key enterprise for the upstream petroleum sector is the MOGE. According to the Ministry of Energy, the MOGE has four responsibilities: exploration and production of oil and gas using its own resources, participate in and oversee the production sharing agreements in cooperation with foreign oil companies, supply of domestic natural gas by construction of its own pipelines, and supply of compressed natural gas (CNG) as a substitute fuel for vehicles.[533] Thus, the MOGE is essentially the organization in charge of regulating Myanmar's upstream petroleum industry, though it itself is supervised by the Minister's Office of the MoE. The MOGE consists of nine departments, namely Administration, Finance, Material Planning, Drilling, Offshore, Exploration and Development, Planning, Production, and Engineering. The MOGE currently administers 11 oil and gas fields in the country. There are 101 oil and gas blocks that are available for potential cooperation with foreign companies, including 53 onshore blocks and 48 offshore blocks.[534]

While the regulatory structure and authorities governing the upstream petroleum industry is clear, there is much less clarity regarding the regulations and laws that govern the industry. While virtually every other country in ASEAN utilizes a Petroleum Law or similar regulations to govern the industry, in Myanmar it is not clear whether any such regulations are in place. A 2007 presentation by the director of Myanmar Industrial Construction Services, Ministry of Industry, seems to indicate that such regulations do exist, namely the Petroleum Act (1934) and the Petroleum Rules of 1937 (as amended in 1946).[535] Similarly, the Burma Lawyers' Council's database indicates the 1934 Petroleum Act is yet to be repealed

531 Ministry of Energy, Myanmar (2012). Minister's Office, The Ministry of Energy (MOE). Accessed at http://www.energy.gov.mm/index.php/en/about-moe/about-minister-office.
532 Ministry of Energy, Myanmar (2012). Energy Planning Department. Accessed at http://www.energy.gov.mm/index.php/en/about-moe/menu-epd.
533 Ministry of Energy, Myanmar (2012). Myanmar Oil and Gas Enterprise (MOGE). Accessed at http://www.energy.gov.mm/index.php/en/about-moe/menu-moge.
534 *Ibid.*
535 U Ohn Myint (2007). Overview of EE&C Activities in Myanmar. Post-Workshop for the Promotion of Energy Efficiency and Conservation (PROMEEC), Brunei. 27-28 February 2007.

or modified in any way.[536] However, these laws were enacted when Myanmar was still part of colonial India, and it is difficult to see how they can continue to be applicable in modern-day Myanmar without significant modifications (e.g. specifying the Myanmar government as the owner of all petroleum resources, or specifying the MOGE as the regulatory authority for the upstream oil sector). The Ministry of Energy's website is conspicuous in the absence of any mention of either the 1934 Petroleum Act or the Petroleum Rules of 1937, adding further weight to the idea that these regulations no longer carry any practical significance. Instead of concrete regulations, the MoE website sets out the basic principles for the operation of its various departments and enterprises as well as standard terms for production-sharing contracts.[537]

Foreign investment in the oil industry (as well as any other industry in Myanmar) is governed by the Myanmar Foreign Investment Law which was promulgated on 30th November 1988.[538] One of the basic principles of this Law is to encourage foreign investment for the exploitation of natural resources requiring heavy investment, making it directly applicable to the petroleum sector. According to this Law, foreign investment can either take the form of an investment made by a foreigner to the extent of one hundred percent of foreign capital, or a joint-venture made between a foreigner and a Myanmar citizen, where the foreign capital must be at least 35% of the total capital. Any proposal for foreign investment must be approved by the Union of Myanmar Foreign Investment Commission, which itself is answerable to the Government. The Law also provides a number of exemptions and reliefs designed to encourage foreign investment into the country into specified economic sectors, of which the oil industry is one.

The downstream oil industry is regulated by the Myanmar Petrochemical Enterprise (MPE) and the Myanmar Petroleum Products Enterprise (MPPE), both of which are fully state-owned companies similar to MOGE. The MPE is responsible for the downstream petroleum sector. It operates refineries, fertilizer plants, methanol plants etc. and produces petroleum and petroleum products.[539] The

[536] Burma Lawyers' Council (2003). The Burma Code. Accessed at http://www.blc-burma.org/html/Burma%20Code/Indexs/lr_law_bc_pindex.html.
[537] See http://www.energy.gov.mm.
[538] Ministry of Energy, Myanmar (2012). The Republic Of The Union Of Myanmar Foreign Investment Law. Accessed at http://www.energy.gov.mm/index.php/en/component/content/article/214.
[539] Ministry of Energy, Myanmar (2012). Myanmar Petrochemical Enterprise (MPE). Accessed at http://www.energy.gov.mm/index.php/en/about-moe/menu-mpe.

MPPE is responsible for retail and wholesale distribution of petroleum products in Myanmar.[540]

Myanmar's mineral industry has had a long history stretching back to the fifteenth century with the mining of lead, silver, zinc, tin, tungsten, and gems.[541] Following independence in 1948, the Burmese government set up three mineral regulatory bodies: the Geological Department (responsible for geological mapping); the Mines and Explosives Department (responsible for establishing mining laws and taxation policies); and the Mineral Resources Development Corporation (responsible for further exploitation of the country's minerals). Joint venture companies were then established between the state and British companies to exploit or re-open mines.[542]

After nationalization and the expropriation of foreign assets in 1962, separate corporations were formed to take charge of specific groups of minerals. These were No. 1 Mining Enterprise (ME1), with oversight of non-ferrous metals (lead, zinc, copper, silver), and by-products, including antimonial lead, copper matte and nickel speiss; No. 2 Mining Enterprise (ME2), responsible for 21 items, including refined tin, wolfram concentrates, tin-wolfram-scheelite and tin-wolfram mixed concentrates, gold and other by-products associated with tin and tungsten minerals; also the exploration and production of tin-tungsten and gold; and No. 3 Mining Enterprise (ME3), in charge of production of industrial minerals (barytes, gypsum, limestone, fire clay, talc powder, graphite, manganese dioxide, bentonite, calcium carbonate, red and yellow ochres, iron ore, sponge iron, pig iron, steel billets and coal), also the importation of coal and coke.[543]

However, the military regime at the time did not seek to centralize the mining sector via these newly formed corporations looking instead to offer up land for exploration via the foreign investment in the sector.[544] In 1988, Burma's mining legislation was changed to allow foreign ventures or individuals up to a 100%

[540] Ministry of Energy, Myanmar (2012). Myanmar Petroleum Products Enterprise (MOGE). Accessed at http://www.energy.gov.mm/index.php/en/about-moe/menu-mppe.
[541] Moody, R. (2000). "Grave diggers: A Report on mining in Burma," Canada Asia Pacific Resource Network (CAPRN).
[542] Soe, U. M (1992). "Overview of Mining Activities, Mining Legislation and Present Economic System in the Union of Myanmar," No. 3 Mining Enterprise, Ministry of Mines. Union of Myanmar. Rangoon. 1992.
[543] Moody, R. *op. cit.*
[544] Ministry of Mines Organization and Activities of the Ministry of Mines (1990). Union of Myanmar, Rangoon.

share in mining projects.[545] However, this arrangement was limited to exploration, exploitation, production and marketing of non-metallic industrial minerals, such as coal, limestone, gypsum, and marble.[546]

Given the lack of a cohesive policy and the turmoil in the country which raised its risk profile, the industry grew very slowly on account of technological backwardness of a largely closed industry and regulatory short-sightedness. By 1990, less than 1 per cent of the country's GDP came from the mining sector, while agriculture accounted for more than 40%.[547] The paucity of data on potential reserves coupled with the military government that prevailed at the time made for poor investment opportunities. According to the Burmese military authorities in power at the time, just over half of the country's geology been systematically mapped by 1995. The situation in the country did not allow for newer mineral prospecting techniques such as over flying and remote landing. [548]

As a consequence, several mineral-rich regions within the country could not be investigated.[549] Furthermore, since mining activity was under the purview of the state, a large proportion of the budget which might be available for prospecting and improvement of mine-related infrastructure was taken up by military expenditures.[550] As noted by the Asian Development Bank, Burma lacked the requisite transportation and energy infrastructure – critical complements to large-scale mineral extraction, processing, and export.[551] Scarce foreign exchange reserves coupled with the sanctions that were imposed on the country made it difficult to import equipment that could improve the productivity of the mining industry.[552] The poor investment environment resulted in low private sector participation which focused on exploring deposits in areas that were already known to have existing reserves or that were located near existing mines.

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[545] Ibid.
[546] Union of Myanmar (1989), "Types of Economic Activities Allowed for Foreign Investment." Rangoon.
[547] Union of Myanmar Foreign Investment Commission, 1990.
[548] Moody, R. *op. cit.*
[549] Than, M., J. Tan. (1990). "Myanmar Dilemmas and Options," Institute of South East Asian Studies, Singapore.
[550] US Embassy in Rangoon, Burma (1990). "Minerals Outlook Report," Rangoon.
[551] Business Vietnam (1997)."Structural Problems plague Burma," October.
[552] Financial Times (1998). "Paung Laung is near Pyinmana," August.

Realizing the need for an overhaul, the military government of the country instituted the Mining Law 1994.[553] The Law was aimed at fulfilling Myanmar's domestic requirements, raising exports, and improving the investment climate whilst ensuring that the industry was effectively regulated and the environment protected.[554] A permit from the Ministry of Mines was required for the prospecting, exploration, large scale production or small scale production of gemstones or metallic minerals as per Chapter 3, Article 4 of the Law. Guidelines were also laid out for subsistence production of gemstones, metallic minerals, industrial minerals, or stones. This required approval by a Ministry-authorized officer authorized.[555]

Any sort of investment foreign entities required the Ministry of Mines to first seek approval of the government. The conditions for local participation in large-scale mining were less onerous with approval requiring only the go-ahead from the Ministry with small-scale mining requiring only the Ministry's Planning and Work Inspection Department to grant the permission. The Ministry was to determine which category a mining project fell under: large-scale production, small-scale production, or subsistence production.[556]

Once issued, the permit-holders were to pay land rent for each permit that they held; a security deposit security deposit or advance payment or both security deposit and advance payment; and a royalty fee. The permit holder also had to protect the welfare of the mine workers by compensating them adequately and providing them with a safe work environment.[557] The permit holder also had to make provisions for the environmental conservation works in the aftermath of a mining operation, submitting the mine to inspection by the Ministry of Mines.

Land and water use laws were also discussed in the legislation requiring that the task of securing land rights was that of the permit holder. Chapter 5, Section 14 required that the permit-holder carry out operations only after coordinating and receiving the go-ahead from the concerned party that currently held the right to use and occupy the land. The mitigating circumstance to this tedious requirement of the miner would be the case wherein the State saw an opportunity to develop mineral production on a tract of land on a commercial scale. If this were the case, then the Ministry of Mines would co-ordinate with the relevant authorities to acquire the land.[558]

553 Moody, R. *op. cit.*
554 The objectives of the Mining Law 1994 are laid out in Chapter 2, Section 3.
555 See Chapter 3, Article 6 of the Mining Law 1994.
556 See Chapter 3, Article 11 of the Mining Law 1994.
557 See Chapter 4, Article 13 of the Mining Law 1994.
558 See Chapter 5, Article 15 of the Mining Law 1994.

The Ministry's Planning and Work Inspection Department would need to be informed if a mining permit holder were to require the use of public water for mineral production. Upon receipt of the notification, the Department would decide whether it merited action. If yes, then it would co-ordinate with the relevant government departments and organizations obtaining permission to use water in accordance with the existing law.

The royalty rates for the various metallic and non-metallic minerals were stipulated in the Law. The royalty was based on the sale value of the mineral which was pegged at 5-7.5% for gemstones; 4-5% for gold, silver, platinum, iridium, palladium, ruthenium, rhodium, tantalum, columbium, niobium, uranium, thorium and other precious metallic minerals; 3-4% for iron, zinc, copper, lead, tin, tungsten, nickel, antimony, aluminum, arsenic, bismuth, cadmium, chromium, cobalt, manganese and other metallic minerals; and 1-3% for industrial minerals or stones.[559]

The Planning and Work Inspection Department was to calculate the value of the mineral on the basis of the prevailing international price at the time of the sale. The Law afforded the Ministry discretion in setting the rates after consultation with the Government and also to award exemptions or deferments of royalty payments. Non-compliance with the directives of the Law would be met with suspension of all or part of the operation carried out under the permit, a payment of a fine, the cancellation of the permit, or the cancellation and confiscation of the advance payments such as the security deposit.[560] Illegal mining could result in imprisonment ranging from one to seven years and fines which varied from 10,000 to 50,000 kyats.[561]

The mining law has not produced the desired investment in the sector and has failed to ramp up raise the production of metallic minerals. Figures from the Directorate of Investment and Company Administration show that just 6 percent of foreign investment since 1988 has been directed into the mining sector.[562] The government has been looking to improve its mining legislation alongside the broad set of reforms that the country is now undertaking, a fact that is being appreciated in by the international community. For instance, the US President Barack Obama

[559] See Chapter 6, Article 18 of the Mining Law 1994.
[560] See Chapter 9, Article 28 of the Mining Law 1994.
[561] See Chapter 9, Articles 30-34 of the Mining Law 1994; 5.5 Kyat is equivalent to USD 1.
[562] Myanmar Times (2012). "Burma targets "investor-friendly" changes to mining law," IntellAsia 10 August.

is lifting the U.S. restriction on international financial institutions like the World Bank lending to Myanmar to reward its progress toward democracy.[563] Myanmar has shown a willingness to listen to mining entities and take into inconsideration changes that would make the regulatory framework less inhibiting. An exact date of the release of the new mining laws has not been announced.

At the conference in July 2012, where the Ministry of Mines met with international investors, China's absence was conspicuous, given that it is Myanmar's largest investor accounting for US$20 billion in foreign direct investment according to the Directorate of Investment and Company Administration (DICA).[564] China has had a head-start over other foreign companies in the years that Myanmar faced economic sanction not just in mining but across all sectors of Myanmar's economy. Aerospace and defense firm Chinese North Industries Company (Norinco), through subsidiary Myanmar Wanbao Mining Copper, is a partner with the Union of Myanmar Economic Holdings Ltd. in Sagaing Region's Monywa copper mine, the largest mining project in Myanmar to date. China's long-standing involvement in Myanmar's mining industry is a factor that could impact the form the new mining legislation could take.

The country still has a long way to go in reconstituting its mining legislation to attract overseas investors as its legacy Mining Law 1994 still retains some elements of post-World War II nationalization policy, wherein political control and state-oriented mineral exploitation supersede most other factors – environmental, social justice, local ownership, and regional economic cooperation.[565]

In the next section, the governance of Myanmar's oil and copper industry will be analyzed. The impact of the regulations will also be discussed.

GOVERNANCE OF MYANMAR'S OIL AND COPPER *TRANSPARENCY AND ACCOUNTABILITY*

TRANSPARENCY IN OIL

The MoE website sets out the basic principles for the operation of its Minister's Office, the Energy Planning Department and the three enterprises. The website

563 Penington, M. (2012). "US lifts Myanmar international lending restriction," New York Times, 10 October 2012.
564 Mclaughlin, T. (2012). "Mining summit shows international interest, lack of local capacity," Myanmar Times, Volume 32, No. 637, July 30 - August 05, 2012.
565 Moody, R. *op. cit.*

also contains the standard terms for production-sharing contracts, has information on which oil and gas blocks have been awarded to which company and carries updates of when bidding rounds are conducted.[566]

However, details of the contracts and the revenue-sharing arrangements are confidential, as is commonly the case in extractive industries in South-east Asian countries. Although the standard terms for production-sharing contracts are published on the MoE website, these terms and conditions are "not rigidly flexible, but negotiable."[567] There is similarly no transparency regarding the signature bonuses that companies pay for each production-sharing contract.[568] Transparency regarding the operations of the MOGE is also lacking, with the MOGE known for its lack of transparency.[569]

The lack of revenue transparency has been especially striking. The Myanmar government does not disclose how much revenue it receives from oil and gas operations or how such revenue is disbursed or managed.[570] More significantly, it is unclear how much of the revenue enters the country in the first place. When petroleum revenues are recorded in the national budget, they are done so using the official exchange rate of US$1 = 6 kyat, whereas the market exchange rate ranges from US$1 = 800-1000 kyat.[571] This recording technique ensures that only a tiny fraction of the petroleum revenue (less than 1%) is recorded in the national budget. The remainder of the revenue, according to a number of sources, is deposited in bank accounts in foreign companies, meaning that how such revenue is generated and disbursed is not at all transparent.[572]

Issues of transparency are compounded by the fact that the foreign oil and gas companies operating in Myanmar are generally not very transparent about their operations themselves. Among the 10 major oil and gas companies operating in Myanmar, participation in international initiatives encouraging business transparency is "extremely limited", with only two of these having public disclosure

566 See http://www.energy.gov.mm.
567 U Kyaw Nyein (n.d.). Country Report for Myanmar, op. cit.
568 Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.
569 Reuters (2012). Exclusive: Myanmar delays energy tender to improve transparency, op. cit.
570 Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.
571 Ibid. For instance, on 14 November 2012, for instance, the exchange rate was US$ 1 = 851 kyat. See http://www.xe.com.
572 Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.; J. O'Connor (2011). State Building, Infrastructure Development and Chinese Energy Projects in Myanmar. Irasec's Discussion Papers #10. March 2011.

policies.[573] With the exception of Total, none of these companies provide detailed disclosure of their revenue payments to the Myanmar government.

Thus, the overall level of transparency is not high. Membership of the Extractive Industries Transparency Initiative (EITI) would require that Myanmar make public details of the contracts it signs with different companies and practice much greater revenue transparency (including transparency with respect to the receipt and disbursement of signature bonuses). Greater transparency is a pre-requisite for improving a number of other aspects of oil governance, such as accountability and regulatory stability. For instance, the UNDP has suggested that a petroleum fund will only be effective if operated on the principle of transparency, in particular by adopting measures such as quarterly reporting of revenues received, quarterly reporting of investment income earned by the fund, and quarterly reporting of the investments undertaken by the fund

TRANSPARENCY IN COPPER

Best practice regulation requires that a transparent, user-centric approach to the regulatory process. This means that stakeholders are consulted in the policy formulation process and the information is made available to them at minimal cost. Evaluation of the transparency of the policy formulation and administration process requires careful analysis as to its inclusiveness, information access, and ease of understanding.

In the past, evidence of public consultations or opinions from stakeholders seemed missing. However, Myanmar has been seeking to make improvements in the manner in which it formulates regulations that govern the mining industry. Stakeholders are being asked for their opinions prior to the new mining law that is expected to be formulated this year. For instance, the country held its first mining summit in the capital Yangoon in 2012 which drew roughly 300 attendees from 26 countries in the fields of mining, geology, law, and mining related finance.

The turnout was a testament to the considerable interest in the largely unexplored nation, where mining accounts for only 1 percent of gross domestic product. The summit was widely lauded as a positive step forward in the transparency of a key economic sector. The Minister for Mines was clear in stating that the Ministry was seeking to amend the Mining Law 1994 with the advice of

[573] Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.

experts. [574] However, seeking the participation of foreign private sector entities is only the first step towards raising transparency of the regulatory process as per best practice guidelines. For example, relevant stakeholders such as political and civil society groups, academics, experts, and practitioners should be formally invited to help prepare the text to support draft laws and regulations. Public comment should then be sought on the draft proposal.

It is also unclear as the whether the input by the private sector companies will be taken in finally drafting the new law.

ACCOUNTABILITY

Accountability in the governance of Myanmar's oil industry is very limited. The main body in charge of oil and gas upstream operations is the MOGE, which is 100% state-owned and therefore directly answerable only to the government, rather than to citizens. The difference is significant as Myanmar does not yet have a democratic government. The government itself has acknowledged that the country is in the midst of a "democratic transition", a process that will be "complex and delicate" and "require patience."[575] Despite the reforms that have taken place over the last year, the absence of a democratic governance system is likely to reduce accountability across all sectors of the economy, including the oil sector.

The absence of transparency in the governance of the oil industry further impedes the extent to which accountability can be said to exist. The lack of transparency means there is no public oversight of how the petroleum revenue is managed, disbursed or distributed. As such petroleum revenues are spent for purposes that are often of doubtful benefit to the public interest. For instance, the NGO Arakan Oil Watch has claimed that much of the revenue goes towards maintaining and improving Myanmar's military. Military purchases have gone up in recent years and the Army has almost doubled since 1988, the same period during which petroleum revenues have started to become significant.[576]

ILLEGAL PRACTICES

The vague nature of the Mining Law 1994 allows for the mining sector to be plagued by several illegal practices. Chapter 8 of the Law concerns the designation

[574] Mclaughlin, T. (2012), *op. cit.*
[575] UN News Centre (2012). Myanmar's democratic transition needs continued support, patience, President tells UN. 27 September 2012.
[576] Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.

of a Mineral Reserve Area. It reaffirms that the State owns all subsoil rights, including the continental shelf, thus nullifying the promise to observe the rights of public (ownership and use) in Mineral Reserve Areas. It then outlines the duties of the Chief Inspector of Mines, and allows her to assign the powers of inspector to any suitable officer in the Department, or delegate her own powers to the inspectors. While this may be standard procedure in certain circumstances, it seems to open the way for inexperienced, untrained, personnel (or those seeking a bribe) to investigate major breaches of procedure or threats to people and the environment.[577]

The poorly-worded Mining Law allows expropriation of privately-held land. Chapter 5 of the Mining Law 1994, which covers the utilization of land and water for mineral production, provides a loophole for encroachment on communal or privately held land. Production is supposed to be carried out only after "agreement from the individual or organization having the right of cultivation, right of possession, right of use and occupancy, beneficial enjoyment, right of succession or transfer of the said land." In any case, if the state so decides, the land can be appropriated "in accordance with the existing law," while public water, which is also undefined, can also be sequestered by "permission" (presumably from the government) for company purposes, if its use is "really necessary."

CORRUPTION AND REGULATORY CAPTURE

Corruption and regulatory capture exist to a very severe degree in Myanmar. In Transparency International's Corruption Perceptions Index 2011, Myanmar ranked 180th out of 182 countries, lower than every other country in the world except for North Korea and Somalia. Cambodia's index score of 1.5 is in the low range between 10 (indicating a country perceived to be very clean) and 0 (indicating a country perceived to be extremely corrupt).[578] According to the World Bank Worldwide Governance Indicators, Myanmar performs poorly on the criterion of control of corruption, which reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. For the last 3 years, Myanmar has scored in the 0.47th percentile of all 215 countries ranked, meaning

577 See Chapter 8 of the Mining Law 1994.

578 Transparency International (2011). Corruption Perceptions Index 2011. http://cpi.transparency.org/cpi2011/results/.

that it has been the bottom-ranked country according to the "control of corruption" criterion.[579] It is notable that Myanmar is one of the few countries in the world that has not yet become party to the UN Convention Against Corruption.[580] The high incidence of corruption is likely to both diminish the incentives for companies to invest in Myanmar's oil sector and reduce the benefits Myanmar can reap from oil exploration and production.

The incidence of corruption implies that the possibility of regulatory capture, or a divergence between the objectives of the decision-makers and the broader objectives of Myanmar as a whole, cannot be discounted. Regulatory capture risks are accentuated by conflicts of interest at the higher level of the governance of Myanmar's petroleum industry. Even under the new government based on elections held in 2010, sectors such as energy, mining and electricity continue to be ministered by former military officials.[581] This implies that the incentives for the governance of the oil sector are likely to be skewed towards benefitting the military rather than the Myanmar economy as a whole or its citizens. Lending credence to this view is the fact that petroleum revenue is an important source of Myanmar's increased military spending. Furthermore, there were special provisions given to military spending in a number of spheres in 2011. A tax exemption from the "Withholding Tax" was granted for military enterprises, while the Special Fund Law established reserve funds for the military with the distinctive feature that the Commander-in-Chief is free to determine expenditures from this fund.[582]

QUALITY OF REGULATORY FRAMEWORK: *GOVERNANCE AND REGULATORY PERFORMANCE*

The quality of the overall regulatory framework and governance in Myanmar is rather poor. According to the World Bank Worldwide Governance Indicators, Myanmar does not perform well on the criterion of government effectiveness (which reflects perceptions of the quality of public services, the quality of the civil

[579] World Bank (2012). World Governance Indicators. Accessed at http://info.worldbank.org/governance/wgi/index.asp.
[580] Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.
[581] Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.
[582] *Ibid*.

service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies), scoring in only the 2nd percentile of all 215 countries ranked during 2011 and consistently ranking around the 2nd-4th percentile in the last 8 years. On the criterion of regulatory quality, which reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development, Myanmar's score is still more unflattering, having consistently ranked in the 1st percentile or worse in every year since 2002.[583] As such, the regulatory environment in Myanmar is not conducive to business operations in general.

The oil sector is unlikely to be immune from the general weaknesses in the governance and regulatory framework in Myanmar. Moreover, the quality of the regulatory framework for the oil sector is made still weaker by the absence of any comprehensive and updated Petroleum Law. As noted, although the 1934 Petroleum Act and the Petroleum Rules of 1937 are nominally in place, in practice it is very unlikely that they are implemented given the changes that have taken place since World War II (not least the independence of Myanmar and the nationalization of the oil industry). Thus, Myanmar is in effect operating without a Petroleum Act or any comparable regulation, which is the first pre-requisite for effective oil governance and one that is taken for granted in just about every other country in the ASEAN region.

Myanmar's reputation as a business destination has long been viewed with much suspicion internationally on account of a continuous stream of news of rampant corruption and complex regulations.[584] Myanmar scores poorly on a several metrics that measure perceptions on these criteria. For instance, in 2011, Myanmar ranked 180 out of 182 countries in the Corruption Perceptions Index.[585] An assessment of investment liberalization policy regimes of ASEAN countries placed Myanmar at the bottom of the group with the most restrictive policies

583 World Bank (2012). World Governance Indicators, op. cit.

584 Krause-Jackson, F. (2012). "Myanmar's Corruption Legacy Shadows Opening to Investors," Bloomberg, 18 May 2012.

585 The Corruption Perceptions Index ranks countries according to their perceived levels of public-sector corruption. The 2011 index draws on different assessments and business opinion surveys carried out by independent and reputable institutions. The lower a countries score, the greater is the perception of corruption in the country. Please see Corruption Perceptions Index (2011), *Transparency International* (Accessed at http://cpi.transparency.org/cpi2011/results/)

in place.[586] In the following section, an assessment of the factors that affect the governance of Myanmar's copper resources is undertaken.

REGULATORY CLARITY AND COHERENCE

Regulatory coherence in Myanmar is somewhat enhanced by the fact that the governance of the upstream oil sector is quite centralized. The MoE is the main authority in charge of the oil industry. The roles of the three enterprises are distinct and clearly delineated from one another, with the MOGE handling upstream operations, the MPE handling downstream activities and the MPPE managing retail and distribution. Alignment is boosted by the fact that each of these enterprises is ultimately answerable to the MoE; moreover, both the Minister's Office and the EPD play an active role in coordinating both within the MoE and with other ministries and organizations.

Regulatory clarity, though, tends to be lacking. The absence of a workable Petroleum Act means that there is little clarity about the kind of regulations, laws and policies followed by the MOGE in regulating the upstream oil industry (and the same can be said about the downstream sector as well). Lack of transparency further contributes to the absence of clarity. Foreign companies interested in Myanmar's oil industry have cited the lack of regulatory clarity as one of the key barriers to their investing in the sector.[587]

Regulations governing the extractive industry often lack clarity or contradict each other. For example, the State Economic Enterprises Law requires that certain precious metals and stones can *only* be mined and marketed through state-owned enterprises. However, under the Mining Law 1994, the government may also permit joint ventures with a private sector firm if it so chooses.[588] There is uncertainty as to how this would be resolved if the issue were to be taken to court.

Chapter 3 of the Law covers the application for and granting of permits. This section is simply an invitation to apply for a permit. There is no reference to any kind of environmental/reclamation bond being posted by the mining company, or to a program to independently monitor and audit social and environmental impacts (and publicly disseminate such regular reports) in either the mining or the

[586] Simorangkir, M. (2010). "ERIA Study to Further Improve the AEC Scorecard: Investment liberalization and facilitation," Economic Research institute for ASEAN and East Asia.
[587] Reuters (2012). Exclusive: Myanmar delays energy tender to improve transparency, *op. cit*.
[588] See Chapter 4, Article 13 of the Mining Law 1994.

post-closure phase of operations.[589] The lack of clear guidelines at the permitting stage is a cause for concern as these can be misused by the permitting authority to extract rents from the concerned company or succumb to bribery to cover up irregularities in operations. The mining industry in general has a poor record of using prospecting permits to carry out exploration, and exploration permits to do what, effectively, is mining.[590]

The Mining Law and its annexures are extremely short on standards of good mining practice; procedures to ensure their implementation; or avenues for any public or individual recourse should practices fail. While prospective bidders are supposed to submit accounts of their previous experience and past performance of "similar work," the work itself is not defined. So, it might be possible for a company with an excellent track record in mining coal in South Africa to submit a bid for a copper mining project – without any experience of hard rock metallic mining.

Thus, the mining regulations consist largely of general statements lacking the clarity and cogency normally expected of well-written laws. They have been described as "among the least developed, or sound, of any in the world."[591] Some laws conflict with one another; others are simply redundant. It would seem as if measures such as keeping regulations voluntary and specific requirements and duties of private companies minimal are the expected norm in Burma for the foreseeable future given the leeway that such imprecision implies for both the regulators and the companies.

Mineral extraction policies in Myanmar are unified under the principle of revenue maximization. In that sense, the guiding principle lends support to coordination from the various government departments when framing legislation that would affect the mining industry. For instance, the Ministry of Finance opened Myanmar's economy to foreign investment in 1988 with the explicit aim of promoting development. This complemented the Law which sought to expand mineral production in the country.

However, critics point to the singular pursuit of the economic principle without attempting to offset the negative externalities that mining operations engender, such as water and air pollution, or consider broader social repercussions of mining reduce the benefits that the country obtains from the mining industry. These

589 Moody, R. (2000), *op. cit.*
590 Moody, R. (1992). "The Gulliver File: Mines, People and Land, a Global Battleground," Minewatch, WISE-Glen Aplin and International Books. Utrecht and London.
591 Moody, R. (2000), *op. cit.*

criticisms are especially pertinent in the case of copper mining as it is carried out in the country.[592]

Environmental impact assessments (EIAs) slowing becoming standard practice in the international mining industry.[593] They are meant to take full advantage of the potential for environmentally sound and sustainable development by integrating environmental issues into development planning which seeks to maximize societal welfare. In the 1994 mining law, there are no specific measures calling for an EIA by the holder of the mining permit. Of course, given that the legislation was passed nearly two decades ago, it is possible that the new mining law will take the current mining industry trend and require that an EIA be carried out.

As far as achieving its goal of revenue maximization of the industry, the country needs to do a lot more. Myanmar does not seem to have a systematic mechanism to develop, monitor, and evaluate regulations. This is obvious given the two decades that it has taken the government to revisit the Mining Law 1994. Furthermore, there does not seem to be any centralized regulatory oversight body with 'whole of government' responsibility for regulatory policy. Such a situation makes for poor policy coordination especially in the case of environmental stewardship where the jurisdiction for environmental regulatory implementation is not clearly delineated between Myanmar's central and local governments.[594]

REGULATORY UNCERTAINTY

To an extent regulatory uncertainty in oil in Myanmar is mitigated by the fact that the governance of the oil sector is quite centralized. There are though a number of other factors that create uncertainty. The absence of a comprehensive legislative framework (or a Petroleum Law) means that the legal basis for oil operations is unclear and very context-dependent. This creates uncertainties for investors into the oil sector.

Investor uncertainty is increased by the fact that investing in Myanmar is, in general, a risky proposition. According to a 2012 study, Myanmar ranks first among

592 Smith, M. (2007). "Environmental governance of mining in Burma," in M. Skidmore Community and the Environment, (Canberra ACT Asia-Pacific Press, ANU).
Knox, J. (2002). "The myth and reality of transboundary environmental impact assessment," *American Journal of International Law*, 96(2):291–319.
O'Callaghan, T. (2010), *op. cit*and T. Wilson (eds.) Myanmar: The State, Community and the Environment, (Canberra ACT Asia-Pacific Press, ANU).
593 Knox, J. (2002). "The myth and reality of transboundary environmental impact assessment," American Journal of International Law, 96(2):291–319.
594 Moody, R. (2000), *op. cit.*

197 countries for "extreme risk" to investments, both because it offers the least legal protection for foreign companies and because it is the least transparent in implementing policies and regulations.[595] A especially pertinent issue for foreign oil investors is the possibility of expropriation. In production-sharing contracts, renegotiations clauses "specifically allow for necessary adjustments/amendments, in the event of situations arising not envisaged in the original contract."[596]

Recognizing this, the Government of Myanmar has instituted laws that protect foreign investors. However, the contradictory articles within the law make for increased regulatory uncertainty. For instance, the Government of Myanmar has in the past attempted to incentivize foreign investment, ensuring potential investors that it would not nationalize the industry or the investment for the life of the contract.[597] Chapter 6, Article 22 of the Myanmar Foreign Investment Law guarantees that an economic enterprise formed under a permit shall not be nationalized during the term of the contract or during an extended term, if so extended.[598] However, the last article of the same law, Chapter 16, Article 32 adds states that for "the purpose of carrying out the provisions of this Law the Government may prescribe such procedures as may be necessary, and the Commission may issue such orders and directives as may be necessary."[599] There is thus uncertainty as to the manner in which the Law will hold in the case of a legal dispute between a privately held company and the State.

Cases such as these highlight the issue of regulatory uncertainty, wherein companies cannot be sure as to how regulatory laws will be interpreted and applied. Attempts at expropriation can act as a dampener on investment in the oil sector. In addition, an uncertain regulatory environment results in dynamic welfare costs that affect the investment trajectory in an industry.[600]

Investors, especially in the case of the mining sector with long-lived projects that stretch out to decades, usually are usually cautious when entering countries where regulations are unclear or there are possibilities that their interpretation

595 Maplecraft (2012). Maplecraft Rule of Law Index. February 2012.
596 U Kyaw Nyein (n.d.). Country Report for Myanmar, op. cit.
597 State Law and Order Restoration Council (1988). "The Myanmar Foreign Investment Law, SLORC Law 10/88," 30 November.
598 *Ibid*.
599 *Ibid*.
600 There is a substantial economics literature on the negative effect that uncertainty has on investment decisions. See Pindyck, R. S. (1990). "Irreversibility, Uncertainty, and Investments," MIT-CEPR 90-007WP, Massachusetts Institute of Technology.

could be highly subjective. The possibility of expropriation is an especially pertinent issue to private mine owners. Realizing this, the Government of Myanmar has instituted laws that protect foreign investors. However, the contradictory articles within the law make for increased regulatory uncertainty.

For instance, the Government of Myanmar has in the past attempted to incentivize foreign investment, ensuring potential investors that it would not nationalize the industry or the investment for the life of the contract.[601] Chapter 6, Article 22 of the Myanmar Foreign Investment Law guarantees that an economic enterprise formed under a permit shall not be nationalized during the term of the contract or during an extended term, if so extended.[602] However, the last article of the same law, Chapter 16, Article 32 adds states that for "the purpose of carrying out the provisions of this Law the Government may prescribe such procedures as may be necessary, and the Commission may issue such orders and directives as may be necessary."[603] There is thus uncertainty as to the manner in which the Law will hold in the case of a legal dispute between a privately held company and the State.

Cases such as these highlight the issue of regulatory uncertainty, wherein companies cannot be sure as to how regulatory laws will be interpreted and applied. Attempts at expropriation can act as a dampener on investment in the mining sector. In addition, an uncertain regulatory environment results in dynamic welfare costs that affect the investment trajectory in an industry.[604] One can argue that this uncertainty has hindered the mining sector's growth given the pace at which Myanmar's promising mining sector has developed over the past two decades.

601 State Law and Order Restoration Council (1988). "The Myanmar Foreign Investment Law, SLORC Law 10/88," 30 November.
602 *Ibid.*
603 *Ibid.*
604 There is a substantial economics literature on the negative effect that uncertainty has on investment decisions. See Pindyck, R. S. (1990). "Irreversibility, Uncertainty, and Investments," MIT-CEPR 90-007WP, Massachusetts Institute of Technology.

ECONOMIC EFFICIENCY AND EQUITY

REVENUE-SHARING ARRANGEMENTS

Revenue-sharing in Myanmar's oil industry is primarily by way of production-sharing contracts (PSCs) signed between the oil company and the MOGE, in conjunction with taxes and royalties. A signature bonus is paid by the company to the MOGE each time a PSC is signed. While the quantum of the signature bonus is generally not disclosed, in some cases it has been. Total paid a signature bonus of US$15 million in 1992 for a PSC to explore the Yadana gas field, while CNPC paid a signature bonus of US$10 million for block AD-1 and US$2 million for block AD-7 in 1992.[605]

Table 5.5 below illustrates how production is shared in the model production-sharing contract for oil operations in Myanmar. A royalty of 12.5% on gross production is charged, which is about the average of what is charged in the remainder of the region. The cost recovery limit is set at 50% for onshore blocks and offshore and deep water blocks at a depth of less than 600 feet, meaning that the oil produced will be used to cover costs amounting to at most 50% of post-royalty production (i.e. 45% of gross production). The cost recovery limit rises to 60% for offshore blocks at a depth of more than 600 feet and deep water blocks between 600 and 2000 feet, and rises to 70% for deep water blocks at a depth of more than 2000 feet; this reflects the higher costs of production at greater depths. The remainder of the oil produced is profit oil to be shared between MOGE and the contractor. The profit oil split is on a sliding scale dependent on the level of production. In the case of onshore blocks, for instance, for the first 10,000 barrels of oil produced per day, the split is 60-40 in favor of MOGE; as production rises, the split becomes increasingly favorable to MOGE, eventually reaching a maximum of 90:10 for oil produced above the 150,000 barrels of oil per day level. Production-sharing contracts for offshore blocks and deep-water blocks follow the same structure at shallow depths, but are slightly more favorable to the contracting company at greater depths (again reflecting the greater risks and costs of exploring such areas). Finally there is also an income tax of 25% on the contractor's profit oil.[606]

[605] Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.

[606] MoE (2012). Standard Terms and Conditions of Production Sharing Contracts for Onshore Blocks (As of 9-7-2012). Accessed at http://www.energy.gov.mm/index.php/en/information/moe-article; MoE (2012). Standard Terms and Conditions of Production Sharing Contracts for Offshore Blocks (As of 9-7-2012). Accessed at http://www.energy.gov.mm/index.php/en/information/moe-article; MoE

Table 5.5 Model production-sharing contract for oil in Myanmar

State Royalties (% of gross production)	12.5%
Cost Gas (% of gross production)	≤43.75%
Profit Oil (min) (% of gross production)	≥43.75%
MOGE's share of profit oil Contractor's share of profit oil	*65%* *35%*
Estimated share received by Myanmar*	**≥59%**

* Assuming crude oil prices are at least $65/barrel and a fixed cost of $10 per barrel, and including revenue from corporate taxes.

Sources: MoE (2012). Standard Terms and Conditions of Production Sharing Contracts for Onshore Blocks (As of 9-7-2012). Accessed at http://www.energy.gov.mm/index.php/en/information/moe-article; MoE (2012). Standard Terms and Conditions of Production Sharing Contracts for Offshore Blocks (As of 9-7-2012). Accessed at http://www.energy.gov.mm/index.php/en/information/moe-article; MoE (2012). Standard Terms and Conditions of Production Sharing Contracts for Deep Water Blocks (As of 9-7-2012). Accessed at http://www.energy.gov.mm/index.php/en/information/moe-article; UNDP Cambodia (2006). Insights for Action: Review of Development Prospects for the Cambodian Oil and Gas Sectors. Discussion Paper No. 2.

The UNDP has estimated that at oil prices of $65/barrel or more, such a model production-sharing contract will allow Myanmar to capture at least 59% of the oil revenue per barrel, with the share increasing as oil prices increase. This is lower than the share captured by Indonesia, Malaysia and Cambodia but higher than the share captured by Vietnam and the Philippines.[607]

In many respects, the model PSC in Myanmar is geared towards maximizing the rent accruing to the government, with less emphasis on encouraging investment by increasing the contractor's share. The 50% cost recovery rate is comparable to those seen in Malaysia and Vietnam but much lower than the cost recovery in Philippines, Indonesia and Cambodia. In addition, the profit oil split allows the

(2012). Standard Terms and Conditions of Production Sharing Contracts for Deep Water Blocks (As of 9-7-2012). Accessed at http://www.energy.gov.mm/index.php/en/information/moe-article.

[607] UNDP Cambodia (2006). Insights for Action: Review of Development Prospects for the Cambodian Oil and Gas Sectors. Discussion Paper No. 2.

government to capture at least 60% of the profit oil, and as much as 90% of profit oil produced at higher levels of overall production. Thus the guaranteed revenue for the Myanmar government (including royalties, profit oil and income taxes) is 43% of gross production.[608] Myanmar's petroleum revenues are moderately but not highly sensitive to petroleum prices and operating costs, in contrast to other countries in the region.[609] Thus in the tradeoff between maximizing rent from petroleum revenue and encouraging increased investment, Myanmar has chosen to emphasize the former.

One positive feature of the model PSC is the sliding scale used for splitting the profit oil, with MOGE capturing a greater share of profit oil when production is at higher levels. Higher production is likely to imply greater profit oil, so the sliding scale mechanism means that the production-sharing scheme is progressive. Progressive profit-sharing has been recommended by the IMF in the past since it allows governments to optimize its response to the aforementioned rent-investment tradeoff. The sliding scheme allows the Myanmar government to capture the largest portion of the windfall from increased profitability while continuing to provide sufficient profits for contractors to compensate for the opportunity cost of capital invested.[610]

INCENTIVES FOR INVESTMENT

As highlighted in the previous section, in its design of the model PSC, Myanmar has chosen to emphasize maximization of the rent captured by the government, which naturally comes at the cost of reducing the profits captured by the contractor and thus reducing the incentives for foreign investment in the sector. Coupled with the regulatory risks and lack of transparency and accountability discussed in previous sections, this implies that there might be a shortage of incentives for foreign investment into the oil upstream sector.

Recognizing this, the Myanmar government has instituted a number of incentives for foreign investment. These include exemptions on duties on import of petroleum industry-equipment/materials, an automatic 3 year tax holiday, no levy of export duty on export of petroleum, accelerated depreciation (25 %) per

608 Authors' calculations based on Table 6.3.1.
609 UNDP Cambodia (2006), op. cit.
610 For the IMF recommendation, made in the context of the fiscal regime governing the petroleum industry in the Philippines, see E. M. Sunley, S. Craner, R. Krever and O. Luca (2012). Reform of the Fiscal Regimes for Mining and Petroleum. International Monetary Fund Country Report No. 12/219, August.

year, and domestic market supply priced at "not too far reduced from fair market value".[611] It remains to be seen whether such incentives are sufficient to overcome the very real risks of investing in Malaysia and the fact that the major portion of oil revenues are captured by the government.

EQUITY CONSIDERATIONS

There are concerns that the petroleum revenue generated is not always equitably shared within Myanmar. For instance, the large amount of spending of petroleum revenue on the military benefits one constituency (the army) while being of dubious benefit to the remainder of the society. Moreover, most of Myanmar's petroleum resources can be found in areas with ethnic minorities. It has been reported that the petroleum revenue generated is typically not shared back with the state owning the resources.[612] This is in some ways a further undesirable consequence of the absence of any working Petroleum Act or other regulation: in several other countries in the ASEAN region, such legislation specifically guarantees a certain share of the revenue to accrue to state governments or directly to the local communities affected by the resource extraction activities. It has been argued that the absence of equitable domestic revenue-sharing has been a contributory factor to ethnic conflict in Myanmar.[613]

ECONOMICS OF SCALE

The Mining Law 1994 stipulates in Chapter 3, Article 4 that a permit from the Ministry of Mines was required for the prospecting, exploration, large scale production or small scale production of gemstones or metallic minerals. Guidelines are also laid out for subsistence production of gemstones, metallic minerals, industrial minerals, or stones requiring approval by a Ministry-authorized officer authorized.[614]

Any sort of investment foreign entities requires the Ministry of Mines to first seek approval of the government. The conditions for local participation in large-scale mining were less onerous with approval requiring only the go-ahead from the Ministry with small-scale mining requiring only the Ministry's Planning and Work Inspection Department to grant the permission. The Ministry determines

611 U Kyaw Nyein (n.d.). Country Report for Myanmar, *op. cit*.
612 Arakan Oil Watch (2012). Burma's Resource Curse, op. cit.
613 *Ibid*.
614 See Chapter 3, Article 6 of the Mining Law 1994.

which category a mining project falls under: large-scale production, small-scale production, or subsistence production.[615] Given that the Ministry has the discretion on deciding whether a project is small or large-scale leaves open room for negotiations and bribery.

Whilst the notion of equal opportunity is well-received, this policy is misdirected given the nature of mining. In particular, it needs to be understood that mining is a highly capital-intensive undertaking, subject to significant ECONOMICS OF SCALE . Such ventures are often risky, slow to yield results, and accompanied by significant social and environmental responsibilities. Only firms with considerable technical, economic and financial capability would be able to devise and carry out the long-term planning needed to mine a mineral deposit, or cluster of mineral deposits, efficiently.

The most efficient way to mine a large deposit is for a single management to draw up a long-term plan that covers the entire reserve, and that adheres to principles of sustainable development. Small-scale miners are unlikely to have the resources to formulate and commit to such a plan. So by keeping the inefficient producers and encouraging the participation by the most adept players the government will accelerate socio-economic development. This means relying on those investors that use state-of-the-art technology and that have access to the considerable amounts of capital that large-scale exploration activity requires.

For these reasons, it would seem sensible to limit small-scale mining ventures that allow local residents, either as individuals or as groups, to obtain small-scale mining licenses over small areas of land, with limits on the amount of capital investment.

ENVIRONMENTAL CONSIDERATIONS

In analyzing the societal welfare impacts of a mining project, attention must be paid to its environmental costs. This is especially pertinent in the case of copper mining which has historically produced the largest volume of uncontrolled and dangerous wastes in the mining industry.[616] Much has been written about the environmental impacts of Sagaing Region's Monywa copper mine, the largest mining project in Myanmar to date.

[615] See Chapter 3, Article 11 of the Mining Law 1994.
[616] Moody, R. (2000), *op. cit*

The Monywa mine comprises of four copper sulfide deposits comprises four sulfide-copper deposits named Sabetaung, Sabetaung South, Kyisintaung and Letpadaung.[617] The first three pits nearing depletion and were mined by Myanmar Ivanhoe Copper Company Limited (MICCL), which is a company created by the 13-year-old 50–50 joint-venture agreement between Ivanhoe Mines and No. 1 Mining Enterprise.[618] Ivanhoe Mines confirmed its intention to divest itself of its Myanmar assets in a news release issued on October 18, 2006, and subsequently announced that the divestiture had been completed in another news release issued on March 30, 2007.[619] In June 2010 the state-owned company Union of Myanmar Economic Holdings signed a deal with Chinese weapons producer Norinco Investors to invest in the last copper deposit, which is estimated to hold as much as 3,800,000 tons of copper enough to produce 125,000 tons a year for 25 years.[620]

MICCL used an advanced copper mining process called the solvent extraction-electro winning (SX-EW) method. Essentially, the mined, crushed copper ore is on a liner that is supposed to be impermeable. It is then sprayed with sulphuric acid-based leaching solution that dissolves the copper. The copper-rich solution formed is then treated with an organic solvent and an electrical current, with resulting in sheets of 99.999 per cent pure copper.[621] This process creates toxic waste commonly referred to as tailings. When tailings find their way to rivers, ground water, and soil via the process of acid mine drainage or acid rock drainage environmental degradation follows. The tailings can also directly affect locals engaged in extracting the little copper that remains in the waste by using an environmentally destructive process of artisanal mining.[622]

There is little evidence to suggest that the environmental impacts of copper mining have been accounted for. In fact no duty is imposed on the holder of a mining permit to carry out an environmental and social impact study or report. Neither is there any procedure for the independent assessment of such reports,

[617] Lwin, S. (2012). "Database Building in the Ministry of Mines," Department of Mineral Survey and Geological Exploration, The Republic of the Union of Myanmar.
[618] Smith, M. (2007). "Environmental governance of mining in Burma," in M. Skidmore Community and the Environment, (Canberra ACT Asia-Pacific Press, ANU).
[619] Fact File: The Monywa Copper Project, Ivanhoe Mines.
[620] Courier Information Service, "Letpadaung Copper Project to Receive Billion Dollar Investment", 16 August 2010.
[621] Smith, M. (2007). "Environmental governance of mining in Burma," in M. Skidmore Community and the Environment, (Canberra ACT Asia-Pacific Press, ANU).
[622] *Ibid.*

or their filing for public scrutiny or public hearings. While Myanmar's National Environmental Policy promotes sustainability and environmental protection as the primary objectives of development, the Myanmar Ministry of Mines states that its purpose is to boost up mineral production to fulfill the growing domestic demand and to increase foreign exchange earnings.[623] The aim of the Ministry of Mines to secure revenue is often wholly at odds with the protection and conservation of the natural environment.

[623] Please see http://www.mining.com.mm/9.ME-1/1.ME-1/Details.asp?submenuID=11&sid=38.

4.1 OIL AND COPPER IN MYANMAR

Key Findings

- Oil production in Myanmar has steadily increased in the last decade and has been around 20,000 barrels of crude per day in recent years, but Myanmar remains a net oil importer. Since 2011 there has been growing interest among foreign companies in investing in oil exploration and production in Myanmar.
- The regulatory structure is centralized, with the Ministry of Energy acting as the coordinating body. The Myanmar Oil and Gas Enterprise oversees exploration and production. Petroleum regulations are very outdated and unlikely to be implementable.
- Myanmar's mining regulations have not produced the desired investment in the minerals sector.
- Myanmar's copper output in 2010 was nearly 69% of its 2006 level, falling from 19,500 metric tons to 12,000 metric tons

Transparency and accountability

- The overall level of transparency is not high. Details of the contracts, revenue-sharing arrangements and signature bonuses are not disclosed. Revenue transparency is absent and the technique for recording oil revenues in the national budget significantly understates the amount of revenue received.
- Accountability in the governance of Myanmar's oil industry is very limited, both due to the authoritarian governance structure and the lack of transparency.
- Corruption exists to a very severe degree in Myanmar, with Myanmar ranked 180th out of 182 countries in Transparency International's Corruption Perceptions Index 2011. Regulatory capture risks are accentuated by conflicts of interest at the higher level of the governance of Myanmar's petroleum industry, which have led to special provisions given to military spending of petroleum revenue.
- In the past, evidence of public consultations or opinions from stakeholders seemed missing. However, Myanmar has been seeking to make improvements in the manner in which it formulates regulations

that govern the mining industry. Stakeholders are being asked for their opinions prior to the new mining law that is expected to be formulated this year.

- The vague nature of Myanmar's mining law allows for the mining sector to be plagued by several illegal practices. Also, the poorly-worded mining law allows expropriation of privately-held land.
- The country's mineral law lays out the duties of the Chief Inspector of Mines, and allows her to assign the powers of the inspector to any suitable officer in the Department, or delegate her own powers to junior inspectors allowing inexperienced, untrained personnel to investigate major breaches of procedure or threats to people and the environment. This raises the possibility of regulatory capture.

Quality of the regulatory framework

- The quality of the overall regulatory framework and governance in Myanmar is rather poor, and is made still weaker by the absence of any comprehensive and updated Petroleum Law.
- Regulatory coherence in Myanmar is somewhat enhanced by the fact that the governance of the oil sector is quite centralized under the umbrella of the Ministry of Energy. Regulatory clarity, though, tends to be lacking because of the absence of a workable Petroleum Act, which has been a key barrier to foreign investment in the oil sector.
- The absence of a comprehensive legislative framework and the general lack of transparency create regulatory uncertainty and increase risks for investors. While the government has instituted laws that protect foreign investors, the contradictory articles within the law make for increased regulatory uncertainty.
- Regulations governing the extractive industry often lack clarity or contradict each other.
- Myanmar's mining law and its annexes are extremely short on standards of good mining practice; procedures to ensure their implementation; or avenues for any public or individual recourse should practices fail.
- Mineral extraction policies in Myanmar are unified under the principle of revenue maximization. In that sense, the guiding principle lends support

to coordination from the various government departments when framing legislation that would affect the mining industry.

- Myanmar does not seem to have a systematic mechanism to develop, monitor, and evaluate regulations.
- There does not seem to be any centralized regulatory oversight body with 'whole of government' responsibility for regulatory policy. Such a situation makes for poor policy coordination especially in the case of environmental stewardship where the jurisdiction for environmental regulatory implementation is not clearly delineated between Myanmar's central and local governments.

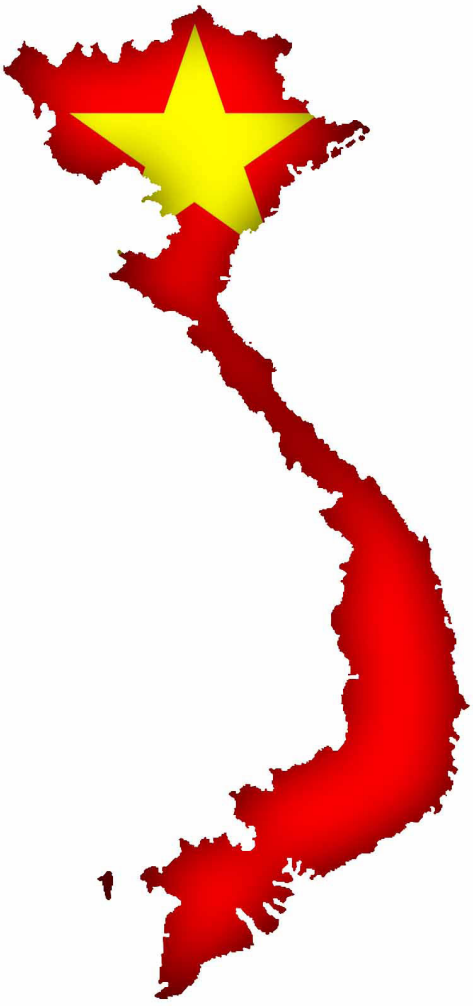
Economic efficiency considerations

- The model production-sharing contract will allow Myanmar to capture on average at least 59% of the oil revenue per barrel, which compares favorably with the rest of the region. The model PSC in Myanmar is geared towards maximizing the rent accruing to the government through features such as progressive profit-sharing and limited cost recovery.
- Myanmar has chosen to emphasize maximization of the rent captured by the government, which comes at the cost of reducing the incentives for foreign investment in the sector. It is not clear whether incentives such as tax holidays and exemptions from export duties are sufficient to overcome this.
- There are legitimate concerns that the petroleum revenue generated is not always equitably shared within Myanmar.
- The government determines which category a mining project falls under: large-scale production, small-scale production, or subsistence production. Given that the government has the discretion on deciding whether a project is small or large-scale leaves open room for negotiations and bribery. This can reduce the economic efficiency of the extractive industry if the government's incentives are skewed towards deeming a large number of projects as small-scale.
- There is little evidence to suggest that the environmental impacts of copper mining have been accounted for. In fact no duty is imposed on the holder of a mining permit to carry out an environmental and

social impact study or report. Neither is there any procedure for the independent assessment of such reports, or their filing for public scrutiny or public hearings.

Recommendations

- Myanmar should practice increased transparency in its governance of the oil industry, and in particular needs to emphasize transparency with respect to how oil revenues are obtained, managed and spent.
- Myanmar should raise the transparency with which the industry is regulated. This will ensure greater participation from foreign investors whose presence in the industry is needed if the country is to meet its output potential.
- Increased parliamentary oversight and the use of public consultation procedures are recommended to increase accountability and assuage concerns about equitable sharing of the benefits of oil production.
- A comprehensive and updated legislative package is urgently needed to improve the quality of the regulatory framework and increase regulatory clarity and certainty.
- Given that considerable unexplored or partially explored petroleum resources still exist, Myanmar should consider increasing the revenue share of the contractor companies in the production-sharing contracts in order to achieve a significant increase in the scale of oil exploration and production activities in the country.
- Myanmar needs to regularly revisit its regulatory policies to ensure that they are up-to-date and align with the country's developmental needs.
- The country should set-up a formal institution that ensures alignment of regulatory policies. This body should consist of members from the country's energy regulatory institutions as well as the planning agencies.
- The environmental impacts of mining practices need to be taken into consideration. Myanmar should consider the institution of environmental impact assessments that are adjudicated by independent agencies.

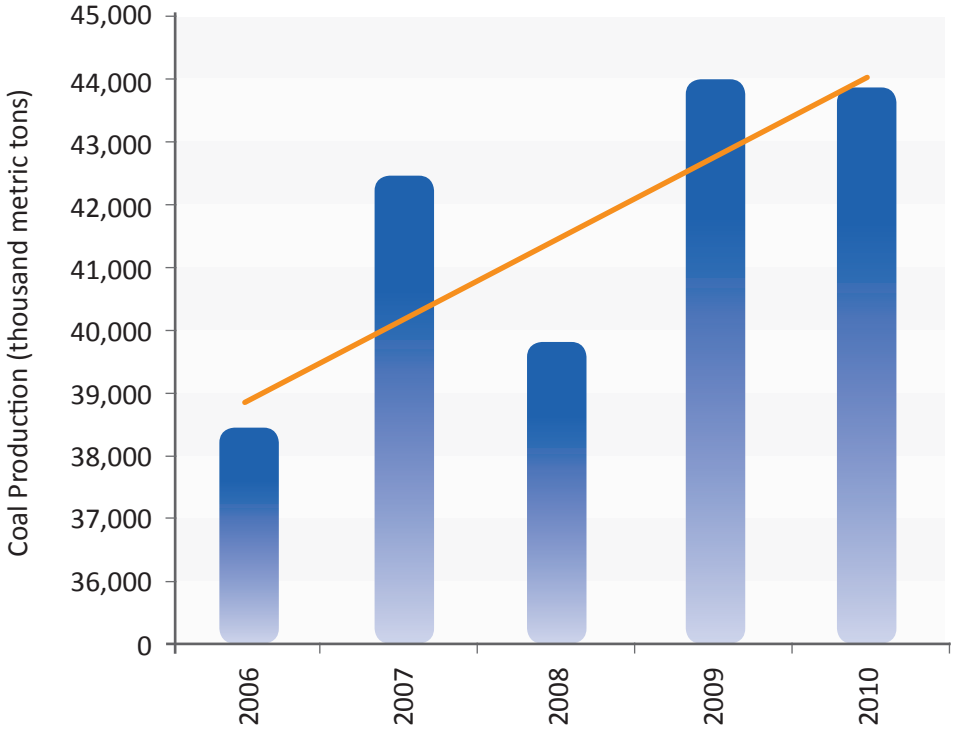


VIETNAM
COAL

COAL IN VIETNAM

Vietnam is a country rich in natural resources, crude oil and coal being the most important of these. Vietnam produces coal for domestic consumption to produce electricity and is a significant exporter to countries in the Asia Pacific region.[624] In 2007, the United States Geological Survey (USGS) considered Vietnam to be the leading supplier of anthracitic coal in the Asia and the Pacific region."[625] Anthracite is the highest grade of coal and is considered especially suitable for power generation. It has the highest carbon content, the fewest impurities, and the highest calorific content of all types of coals, which also include bituminous coal and lignite. This makes Vietnamese coal quite valuable.

Figur 6.1 Coal production in Vietnam (2006–2010)



Source: Fong-Sam, Y. (2010). "The Mineral Industry of Vietnam," U.S. Geological Survey, June 2010

[624] Wu J. C. (2009). "The Mineral Industry of Vietnam," U.S. Geological Survey, June 2009.
[625] *Ibid.*

Figure 6.1 illustrates the growth rate of Vietnamese coal production from 2006–2010. The industry has seen some fluctuations in output stemming in part from the vagaries of global demand for coal. However, the broad trend seems to be positive. The industry grew at a compound average growth rate of 3.2 per cent from 2006–2010. Exports of coal have likewise experienced fluctuations. For instance, the USGS reported that exports of coal in 2009 increased by about 29% to approximately 25 million metric tons (Mt) from 19.4 Mt in 2008.[626] However, 2009 saw exports of coal decrease by about 20.7% to approximately 19.8 Mt. Most Vietnamese coal exports find their way to China, with Japan and South Korea, where the appetite for high quality coal for power generation is highly valued, being the next largest importers of Vietnamese coal.[627]

As of January 2010, Vietnam National Coal-Mineral Industries Holding Corporation Limited (VINACOMIN), the state-owned monopoly producer of coal, estimates the country's coal reserves to be 48.7 billion tons.[628] Most of Vietnam's coal reserves lie in the northern part of the country, beneath the Red River Basin (Hung Yen, Thai Binh).[629] Geological estimates of the regions resources indicate far greater reserves that the current largest coal mining province in north-eastern Vietnam, Quang Ninh. The Basin is estimated to have around 20 times more coal than Quang Ninh. However, the economic viability of these resources is unclear given the depth at which these coal seams lie.

HISTORY AND EVOLUTION OF THE INDUSTRY

The Vietnamese coal mining history has had a long history of nearly 170 years.[630] Despite its long history in Vietnam and reserves of other mineral ores such as iron and copper, modern mineral laws that protected the rights and obligations of investors in the sector did not occur until 30 April, 1996.[631] The Mineral Law of Vietnam (ML) held that the State Managing Body of Minerals (SMBM), which

626 Fong-Sam, Y. (2009). "The Mineral Industry of Vietnam," U.S. Geological Survey, June 2009
627 Hoa, T. X. (2011). "Coal Exports and the Future in Vietnam," Vietnam National Coal-Mineral Industries Holding Corporation Limited (VINACOMIN).
628 *Ibid.*
629 VINACOMIN (2012). "Vietnam Coal Mining: A Bright Future Ahead," June 2012.
630 Chuan, L. M (2011). "Perspective Development of Vietnam Coal Industry," Clean Coal Day Tokyo,Japan, 6 September, 2011.
631 Robinson, I. J. (1996). "Vietnam Mineral Law of 1996," Phillips Nizer LLP.

was a part of the Ministry of Industry, would be responsible for administering the ML.[632] The ML replaced the Ordinance on Mineral Resources issued by the Vietnam State Council on August 7, 1989. The Law was largely modeled on Australian and Canadian Mining Law adapted to meet Vietnamese requirements.[633]

As in Indonesia, the ML considered the mineral deposits to belong to the people of Vietnam.[634] The law strongly reflected the political discourse in Vietnam at the time, which favored state-owned enterprises. For instance, Article 5 of the Law mandated that the government create favorable conditions for such enterprises in minerals of national importance. However, what constituted nationally important minerals was unspecified. The Law permitted the government to ban the export/import of minerals. The right to export minerals would be explicitly stated in the mining license obtained from the Vietnamese government.

Investors would receive a license to explore an area. However, this did not automatically imply that they would be able to develop the resources. This would require another application for a license. The protection of mineral resources, supervision, and monitoring of the compliance of legislation relating to mineral resources was under the purview of the local governments in addition to the SMBM.[635] The mineral prospecting license was limited to an initial period of not more than 12 months and was not to exceed 24 months (Article 21). The mineral exploration license was not permitted in the first instance to exceed 24 months and could only be extended for one additional 24 month period (Article 25).

That Law required that if an application for a mineral mining license was not submitted within six months after the expiration of the mineral exploration license, then the government had the right to grant a new exploration license or mineral mining license for the same area to another organization or individual (Article 28). The government also had the right to disapprove of the mining manager. The mineral processing stage of operations required a separate license. All in all, the Mining Law of Vietnam 1996 seemed to be quite arbitrary in its provision and heavily skewed against private investors in mining projects. There was a realization that the Law needed to be amended so as to make the sector more attractive to private

632 See the official translated version of the mineral law http://www.vietnamlaws.com/freelaws/MineralLaw20Mar96[X1051].pdf.
633 Bates, T. (2008). "Mining investment and the mineral law in Vietnam," Roundtable on the Orientation for Amended Law on Mineral Vietnam Business, Vietnam Business Forum.
634 The Mineral Law of Vietnam 1996 can be seen in full at http://www.vietnamlaws.com/freelaws/MineralLaw20Mar96[X1051].pdf
635 *Ibid.*

companies and foreign investors. A few changes were made to the Law in 2000 and 2005 via the issue of decrees.[636] But the major change came about in 2010.

In 17 November 2010, the Vietnamese National Assembly adopted the new mineral law (2010 Mineral Law), which took effect from 1 July 2011, and replaced the 1996 Mineral Law (as amended in 2005). The 2010 Mineral Law introduced new changes to and supplements the existing legal framework for mineral exploration and exploitation, including streamlining the licensing process and imposing more stringent financial conditions which must be satisfied to obtain mineral licenses.

The 2010 Mineral Law regulates basic geological surveys of mineral resources; protection of untapped minerals; mineral exploration and mining; and State administration of minerals located within the territory of Vietnam including islands, sea territory, regions adjacent to the sea territory, exclusive economic zones and the continental shelf of Vietnam. The exploration or exploitation of oil and gas, and natural water (other than mineral water and natural thermal water) are not within the scope of the 2010 Mineral Law.

A prospecting license is no longer required. An organization or individual eligible for mineral exploration can now conduct a field survey and take specimens from the land surface for mineral exploration purposes with only a written consent from the provincial People's Committee[637] in the locality of the proposed exploration site. A processing license is also no longer required. The scope of mineral mining activity has been expanded to include mineral classification and enrichment, which in nature is mineral processing.

To ensure participation of potential investors, the mining organization is required to contribute owner's equity capital equal to not less than 50% (in the case of an exploration project) and 30% (in the case of a mining project) of the total investment capital. The 2010 Mineral Law also contains new provisions on mineral strategy, auctioning of mineral mining rights and fees for issuing mineral mining rights. The State will collect fees for issuing licenses to mine minerals with the fee level to be based on value, reserves and quality of minerals, or category or group of minerals to be exploited as well as mining conditions.

The issuance of mineral mining rights, in principle, must be conducted via auction. The principles and conditions required for such auctions will be provided by the Government. This new regulation on auctioning mineral mining rights is

[636] See http://www.vietnamlaws.com/freelaws/MineralLaw20Mar96[X1051].pdf and http://www.vietnamlaws.com/freelaws/Lw46na14Jun05Mineral[X3355].pdf

[637] This is the local government in Vietnam.

expected to enhance transparency and abolish the current "ask-give" mechanism in licensing which implies negative connotations. Under the 2010 Mineral Law, there are only two types of mineral licenses: a mineral exploration license and a mineral mining license. In each case, the license term has been increased in line with international mining practice. Of note, in order to get a mineral mining license, a mining investment project must be formulated during the term of mineral exploration stipulated in the mineral exploration license.

As in the ML (1996), the local government[638] are the responsible authority to issue mineral exploration licenses, and licenses to mine minerals used for common construction materials, peat, and minerals in areas which contain scattered and small-scale minerals as delineated and announced by the Ministry of Natural Resources and Environment (MONRE); and to also issue licenses for individual mining. The MONRE is the responsible authority to issue mineral exploration licenses and mineral mining licenses in all other cases. The State licensing body which has issued a mineral exploration license, mineral mining license, or individual mining license will have the authority to extend, withdraw, or consent to the surrender of that same license; to consent to the surrender of part of the exploratory or mined site; and to consent to the transfer of the mineral exploration or mining rights stipulated in such license.

Entities registered to undertake mineral exploration activities may be enterprises established in accordance with the Law on Enterprises, co-operatives and unions of co-operatives established in accordance with the Law on Co-operatives, or foreign enterprises with a representative office or branch in Vietnam. Family businesses registered to undertake mineral exploration will be eligible to explore for minerals used as common construction materials. In order to engage in mineral exploration, an organization must be established in accordance with the law, have personnel how are technically competent in the specialties of exploration geology, hydrogeology, engineering geology, geophysics, drilling, excavation and other related specialties, and have specialized equipment and apparatus necessary for building the mineral exploratory works.

In order to be granted a mineral exploration license an entity must be selected by the competent State body or win an auction of the mining right to an unexplored area, have a mineral exploration proposal which is consistent with the mineral

[638] Essentially the Provincial People's Committees

master planning;[639] and in the case of toxic minerals, must also have written permission from the prime minister, and have equity at least equal to 50% of the total investment capital to implement the Mineral Exploration Proposal.

On 25 February 2011, the Prime Minister (PM) signed Decision No. 299/QD-TTg with immediate effect promulgating the list of implementing legal instruments to be issued for laws passed in 2010 and delegation of authority for drafting and submitting such legal instruments. The MONRE was delegated to draft the following legal instruments:

- Decree Implementing the Law on Minerals for submission in May 2011
- Decree Regulating Auctions of Mineral Mining Rights for submission in May 2011
- Decree on Administrative Penalties in the Mineral Sector for submission in September 2011 and
- Decision of the PM approving the Mineral Strategy to Year 2020 with Outlook to Year 2030 for submission in May 2011

Over the past three decades, Vietnam's economy has enjoyed rapid growth spurred by the changes brought about by the Doi Moi reform program.[640] This rapid growth has been accompanied by robust demand for electricity. Over the next five years, Vietnam's electricity consumption is projected to rise 15 percent while the supply may grow 14.5 percent, with additional capacity coming from 38 electricity projects under construction. By the end of 2015 the country's total electricity generating capacity is expected to be 48.5 GW.[641] Over the next decade Vietnam plans to build 95 electricity plants with total estimated capacity of 49,044MW and capital demand of USD39.58 billion. This increase in capacity will augment the demand for coal which has already necessitated imports in June 2011.[642] This has resulted in a shift in policy; the government now wants to use domestic coal

[639] As per the new mineral law, for each planning period, the government will develop a mineral strategy and mineral master plans to ensure and promote sustainable socio-economic development and national defence and security, ensuring that minerals are protected, mined and used reasonably and in a cost effective and efficient way.

[640] Vuong, Q. H, Tran, T. D. (2009). "The cultural dimensions of the Vietnamese private entrepreneurship," *ICFAI Journal of Entrepreneurship Development*, Vol. VI, Nos. 3 & 4 (Sept. & Dec. 2009), pp. 54–78. ICFAI University Press.

[641] Cleanbiz (2011). "Electricity of Vietnam under fire for impeding sector investment," 29 June, 2011.

[642] Taon, D. D. (2011). "Vietnam imports thermal coal for first time: Vinacomin," 16 June 2011, Platts.

production to power Vietnam's electricity sector. This is reflected in the new Mining Law of 2010 and the accompanying decrees mentioned above.

In the next section, the governance of Vietnam's coal sector will be analyzed. The possible impact of the changes in regulation and issues of governance will also be discussed.

GOVERNANCE OF THE COAL INDUSTRY

Despite several reforms, Vietnam has had a reputation of being a difficult place to do business on account of lack of transparency and inconsistency in the interpretation of regulations.[643] Vietnam ranked 112 out of 182 countries in the Corruption Perceptions Index 2011.[644] The World Bank prepares an annual Ease of Doing Business assessment which examines issues such as starting a business, enforcing contracts, and dealing with construction permits. In 2012, the World Bank ranked Vietnam 98 out of 183 assessed economies.[645]

In the following section, an assessment of the factors that affect the governance of Vietnam's coal resources is undertaken.

QUALITY OF THE REGULATORY FRAMEWORK

LACK OF CLARITY

Regulations governing the extractive industry and coal often lack clarity. For instance, the Mineral Law 1996 required that the government create a favorable environment for State-owned enterprises such that they were able to take a leadership position in the mining and processing of "important" minerals (Article 5). However, the Law lacked clarity on several issues. It was unclear what the important minerals referred to. There was no mention as to the extent of ownership, majority or otherwise, that an investor would be permitted to have. Also, the issue of joint

643 IE Singapore (2011). "Doing business in Vietnam," Advisory Seminar Series.

644 The Corruption Perceptions Index ranks countries according to their perceived levels of public-sector corruption. The 2011 index draws on different assessments and business opinion surveys carried out by independent and reputable institutions. The lower a countries score, the greater is the perception of corruption in the country. Please see Corruption Perceptions Index (2011), *Transparency International* (Accessed at http://cpi.transparency.org/cpi2011/results/)

645 For details of the methodology, please refer to http://www.doingbusiness.org/rankings.

ownership was left unanswered. There was no clarity as to whether only the State-owned enterprises, as opposed to private Vietnam enterprises, would be permitted as joint venture partners in a foreign invested mining enterprise.

The new Mineral Law 2010 similarly leaves much interpretative leeway in certain clauses. For instance, Article 17 in Chapter 3 states that entities or individuals funding geological baseline studies for mineral resources will be receive priority when participating in auctions to explore – essentially mining rights of the new minerals found in the surveyed areas. However, what the term "given priority" implies is unclear. This lack of clarity undermines investor confidence which could consequently diminish their incentives to undertake funding of geological baseline studies, which are highly risky activities undertaken during the overall process of discovery of new mineral deposits. Furthermore, no size limit is stated for the area to be approved for the baseline studies.

REGULATORY COHERENCE

There is often a lack of coordination amongst government entities which result in regulations that conflict in their objectives and result in a duplication of effort. To circumvent this, regulatory best practice guides suggest that clear objectives need to be set, the roles and functions of the regulatory authorities need to be specified, coordination mechanisms need to be in place to harmonize the regulatory process.[646]

The alignment of policies in Vietnam has been a challenge. One reasons for this could be the absence of a systematic mechanism to develop, monitor and evaluate laws/regulations or a centralized regulatory oversight body with 'whole of government' responsibility for regulatory policy. The systems in place to promote alignment of policies in Vietnam are inadequate to coordinate policy among the central and provincial authorities.[647]

However, the drafting of a master plan every decade, which will be on a nationwide basis, might help coordinate the activities of the central and provincial governments henceforth. Under the new Mineral Law 2010, a mineral strategy must be prepared for each ten-year period with the outlook for 20 years. This plan should be consistent with the broad economic objectives of the government over the same period. The Ministry of Natural Resources and Environment (MONRE) is

[646] OECD (2011b). Draft OECD Recommendation on Regulatory Policy and Governance, OECD, Paris
[647] OECD (2010). "Vietnam: Policy Framework for Investment," Investment Division of the OECD Directorate for Financial and Enterprise Affairs, OECD.

to adopt the coordinators role liaising with other ministries, such as the Ministry of Finance, to prepare the mineral strategy. This strategy would then be submitted to the Prime Minister for approval.

The broad direction of the plan might serve to coordinate the activities of the central and local governments especially given that it will have received the Prime Minister's approval lending it further credibility. However, this might not be sufficient to overcome the overlapping jurisdictions amongst the center and the states that prevail in the country. Neither will it help clarify the role of the myriad regulatory bodies that often provide support to the execution of certain regulations. Hence, there is a need for a formal coordinating agency that will provide the coordination required for efficient execution of regulatory duties.

REGULATORY UNCERTAINTY

As in the case in Indonesia, Vietnam follows a practice wherein a ***law*** is first drafted. It is then followed by the ***decrees*** that contain the specific details and guidelines for the implementation of the Law. In many cases there is a time gap between the passage of the law and the accompanying decree. For instance, there is a space of two years between the passage of the Mining Law 2010 and the Decree 15/2012/ND-CP dated 09 March 2012. Such a situation creates uncertainty for investors. There are dynamic welfare costs on account of an uncertain regulatory environment.[648]

The Mineral Law 1996 required that once a miner received a license to explore, mine and/or process minerals, they were not only required to deal with State Managing Body of Minerals which was a part of the erstwhile Ministry of Industry but also the "People's Councils" and "People's Committees," that were the provincial authorities. The Law gave these authorities the right to apply measures for the purpose of the management and protection of mineral resources, supervision and monitoring of the compliance of legislation relating to mineral resources in their respective localities (Article 4). This allowed the local government considerable powers of discretion in interpreting regulations. Given the sometimes conflicting and inconsistent interpretation, the multiple levels of regulation and the uncertainty that this engendered did not augur well for the timely and effective progress of a project.[649]

[648] There is a substantial economics literature on the effect that uncertainty has on investment decisions. See Pindyck, R. S. (1990). "Irreversibility, Uncertainty, and Investments," MIT-CEPR 90-007WP, Massachusetts Institute of Technology.
[649] Robinson, I. J. (1996), *op. cit.*

The Mineral Law 2010 does not address the issue of uncertainty brought about by the devolution of authority between the center and the provinces. In fact, under the section that seeks to protect the interests of the local authorities, the Law states that the MONRE will be authorized by the Government to exercise State administration of minerals throughout the whole country with the assistance of other State regulators, which include other ministries and People's Committees of all levels. [650]

LACK OF REGULATORY CAPACITY

The decentralization movement has not been a positive development for the governance of Vietnam's extractive industry. As noted earlier, the delegation of authority to regional governments with regard to the determination of their own policies and tapping new sources of revenue is a relatively recent development brought on by the shift to regional autonomy. Critics point out that regional governments lack the institutional capacity to administer their new responsibilities and lack accountability for their actions.[651]

There have been several instances where administrative and technical limitations have resulted in poor execution of regulatory duties. The most recent example of such lapses comes from a report by the Government Inspectorate of Vietnam, one of the three anti-corruption agencies in the country. The report released on 17 May, 2012 found that provincial government inspectors from across Vietnam have issued fines totaling VND12 billion ($583,000) against the mining sector over the past three years. Violations were found at all levels of the mining industry: from lax licensing to poor environmental protection. The report also found poor management in the zoning of mining areas. Half of the 16 provinces were found to have active illegal mining operations. A lack of regulatory capability in addition to corruption were said to be the cause.[652]

Combined with the limited capacity of regional governments to enforce mining regulations, the entry of unqualified investors lacking technological, technical, and financial competence[653] could result in sub-optimal exploitation of Vietnam's

[650] Mayer Brown (2011). "Vietnam's 2010 Mineral Law," Legal Update Infrastructure Vietnam
[651] Fox, J., Adhuri, D., Resosudarmo, I. (2005). "Unfinished edifice or Pandora's box? Decentralisation and resource management in Indonesia," in *The Politics and Economics of Indonesia's Natural Resources*, ed. B. Resosudarmo, Institute of Southeast Asian Studies, Singapore: 92–108.
[652] Thanhnniennews (2012). "Panal targets mining corruption," 18 August, 2012.
[653] As per the new Mineral law 2010, mining licence holders are deemed to be qualified if they employ one mining and/or geological expert with a minimum of five years experience, and have

mineral resources, extensive damage to the environment, and minimum revenue generation for the state.

ECONOMIC EFFICIENCY AND EQUITY CONSIDERATIONS

ECONOMICS OF SCALE

Only firms with considerable technical, economic, and financial capability would be able to devise and carry out the long-term planning needed to mine a mineral deposit, or cluster of mineral deposits, efficiently. Thus, the most efficient way to mine a large deposit is for a single management to draw up a long-term plan that covers the entire reserve, and that adheres to principles of sustainable development.

The Mineral Law 2010 seems to see the efficacy of ECONOMICS OF SCALE . It makes a provision for the same in Chapter 1, Article 1, Clause 5 where the division of a potentially large-scale mine into smaller scale developments is not permitted. This requirement has long been supported by the mining industry which has viewed the move as a "necessary and wise change back to a policy which has been implemented in the past."[654]

Small-scale miners are unlikely to have the resources to formulate and commit to such a plan. So by keeping the inefficient producers and encouraging the participation by the most adept players the government will accelerate socio-economic development. This means relying on those investors that use state-of-the-art technology and that have access to the considerable amounts of capital that large-scale exploration activity requires.

This is what is purported to have occurred in Vietnam where the division of large deposits that could have been effectively mined at large scale, with increased recovery of mineral resources, into small-scale mining parcels for exploitation by small inexperienced local enterprises resulted in degradation of the deposits. This has made it uneconomic to recover lower grade zones.[655]

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annual working plans and budgets for four years of exploration activity. Essentially, a formal administrative process in which companies present their exploration and production plans (often known as a 'beauty contest') allows the government the flexibility to use a multitude of criteria in deciding who to allocate the contracts to. However, there may be transparency issues with this process, particularly in a developing country context.

654 Dudka, S. (2010). "Comments on Proposed New Mineral Law – Draft 5," Vietnam Business Forum June 2010.

655 *Ibid.*

However, the Law has provisions that seem at odds to those in article 1, clause 5 mentioned above. Chapter 6, Article 43, Clause 2 specifies that in case an application for a mining license has been granted by the licensing authority but for a smaller area than had been applied for, the authority can grant a mining license to another party for the remaining deposit. There are provisions that require compensation to be provided by the new co-licensee to the previous licensee. This clause directly conflicts with the ideas presented in Article 5, Clause 5 regarding not splitting large mineral deposits into small pieces.

So while in some sense, the pertinence of ECONOMICS OF SCALE to mining efficacy has been acknowledged by the Law, ambiguity in the wording of the Law diminishes its import.

LICENSING

The Mineral law 1996 allowed firms sufficient time to prospect and explore for coal. For instance, the mineral prospecting permit was limited to an initial period of not more than 12 months and a total period not to exceed 24 months as set out in Article 21. And Article 25 stated that the mineral exploration license was not permitted, in the first instance, to exceed 24 months in duration and could only be extended for an additional 24 month period. Given Vietnam's urgency in developing its mineral resources, the conditions did not seem to onerous.[656]

Mining licenses were also provided for a substantial duration under the Mineral Law 1996. Article 31 stated that the initial term of a mineral mining license could not exceed thirty years. However, extensions in excess of the initial period could only be carried out a maximum of twenty years. A license could thus last fifty years which from a societal perspective given those longer production–operation periods enable mining companies to make longer-term commitments to local communities. One of the greatest benefits that can be derived from a mining operation is for the people living in adjacent areas to benefit directly as a result of the company's corporate social responsibility projects, and through the development of forward and backward linkages with local businesses.

Furthermore, the shorter timeframe available to mining companies to maximize their returns from investment in exploration and development may prompt them to resort to the practice of "high grading," where the focus is on recovering only

[656] Robinson, I. J. (1996), *op. cit.*

the highest-grade ore.[657] In most cases it is economic for mining companies to extract lower-grade ore in conjunction with higher-grade ore, given sufficient time to do so. Therefore, any move towards high grading would reduce the societal benefits. Precisely for this reason, this practice is prohibited in many countries through legislation that demands maximum economic recovery (Hamilton 2005).[658] The longer duration licenses offered by the Vietnamese Mineral Law 1996 were a positive attribute.

However, other provisions in the Law seemed to discourage investors from entering the industry in Vietnam. Article 31 also was explicit in stating that the grant of a license to explore and find economically viable deposits did not automatically imply the right to mine the minerals. It only allowed the investor the special right to apply for a mineral mining license in the area covered by the mineral exploration license as laid out in Article 26. Given that substantial sums are spent in exploration ascertaining the existence of significant provable or proven reserves of a mineral, not allowing investors to develop the mineral resource was a significant disincentive to investment in the mining sector.

PRICING MECHANISM AND TAXES

Vietnam's mineral industry is dominated by the state-owned Vietnam Coal and Minerals Industries Corporation (Vinacomin), under which are two groups of companies: coal and minerals.[659] Vinacomin operates most of Vietnam's 52 coal mines completely controlling every aspect of the coal mining company's operations, from the amount of coal produced to the price they sell the coal for.[660]

Vinacomin gives every coal mine an annual output quota. Vinacomin negotiates with the miners to ascertain the price at which it purchases coal. The prices are based on marginal costs of extraction which varies depending on the geological features of the mine. Consequence, Vinacomin pays a higher price to less efficient mines and mines which are more difficult mine. If the mine experiences cost overruns (e.g. due to fuel cost increases etc.), Vinacomin usually compensates the miner for this extra cost. The profit of coal mining companies is fixed at 3% of the expected cost.[661]

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[657] Lemieux, M. (2000). "Surface mine reserve definition and the high-grading fallacy," *Mining Engineering* 52 (2): 48–50.
[658] Hamilton, M. (2005). "Mining Environmental Policy: Comparing Indonesia and the USA," Ashgate, Aldershot.
[659] Please refer to http://www.austrade.gov.au/Mining-to-Vietnam/default.aspx
[660] Vinacomin (2012). "Vietnam Coal Mining: A Bright Future Ahead," Vinacomin Press release, 6 June, 2012.
[661] *Ibid.*

There are several issues with this pricing structure that are far from optimal in the economic sense. Vinacomin would have the advantage in negotiating the prices being the monopolist.[662] The resulting deadweight loss would have negative dynamic effects on Vinacomin and the mining company.[663] Furthermore, Vinacomin sets prices based on the marginal production costs of a mine. Information asymmetry, wherein one party in a transaction is better informed than the other, becomes a pertinent market distortion in this scenario. Given this price-setting structure there is a welfare loss as the mining company is of course better informed as to the production cost of its mines than Vinacomin is. There is further no information revealing mechanism whereby Vinacommin can correctly assess a mine's cost of production.

Such a situation can lead to "gold-plating" to inflate the apparent production costs from a mine.[664] Also the 3% upper bound on profits as a function of expected costs incentivizes firms to inflate their costs. Marginal cost pricing implies that Vinacomin subsidizes less efficient mines. The optimal production schedule for mineral resources requires that the lowest cost minerals are extracted first, followed by higher cost deposits.[665] However, Vinacomin's subsidy militates against this economic dictum thus lowering the present value of the mineral deposits.

There were several issues with the erstwhile Mineral Law 1996 as far as royalties and fiscal matters were concerned. For instance, Article 16 required that once a mining concern received the permission to mine they were to deposit a lump sum amount, which was determined via negotiations with the State Managing Body of Minerals, at a Vietnamese or foreign bank licensed to operate in Vietnam as security for the rehabilitation of the environment, ecology and land. Since the Law set no standards for how the lump sum amount was to be calculated, it was potentially a substantial tax on the miner.[666] Furthermore, the Law was not explicit as to the royalty rates and taxation rates. The absence of such clarity further served as an impediment to investment in the sector. This has become apparent given the shortfall in output that Vietnam now faces.[667]

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662 As the only purchaser of a good or service, the monopsonist may dictate terms to its suppliers in the same manner that a monopolist controls the market for its buyers.

663 Bhaskar, V.; To, T. (1999). "Minimum Wages for Ronald McDonald Monopsonies: A Theory of Monopsonistic Competition," *The Economic Journal* 109 (455): 190–203.

664 Zazac, E. E. (1972). "A note on gold plating," Bell Journal of Economics and Management, Vol. 3, No. 1, pgs. 311-15.

665 Minnitt, R. C. A. (2007). "Frontiers of usefulness: The economics of exhaustible resources," The Journal of The Southern African Institute of Mining and Metallurgy, Vol. 107, pgs. 539-55.

666 Robinson, I. J. (1996), *op. cit.*

667 Tao, D. D. (2012). "Vietnam imports thermal coal for first time: Vinacomin," Platts, 16 June, 2012.

There have been amendments to the royalties paid by the minerals sector in general and coal in particular. For instance, Decree 50/2010/ND-CP instituted in May 14, 2010, provided guidelines for the implementation of the Law on Royalties. This required that the royalties on exported minerals be calculated on a free-on-board (FOB) price basis.[668] This would translate into higher taxes for the miners. Up until then, Decree 147/2006/ND-CP was in force which required that royalties were calculated on the basis of the sale price of the commodity at the mining site. The 2012 Decree would include all costs such as for transport, concentrating, refining and insurance. In effect the royalties would have increased by 2.5 times.[669] It is unclear as to the optimality of these taxes given the paucity on how the government arrives at these numbers. However, frequent changes in taxation policy can have a detrimental impact of investor confidence in the sector. At a time where Vietnam is trying to encourage foreign investment in the coal mining sector, perceived *ad hoc* changes in royalty rates or the export taxes on coal as witnessed recently[670] might dampen investor confidence.

TRANSPARENCY AND ACCOUNTABILITY

TRANSPARENCY

Best practice regulation requires that a transparent, user-centric approach to the regulatory process. This means that stakeholders are consulted in the policy formulation process and the information is made available to them at minimal cost. Evaluation of the transparency of the policy formulation and administration process requires careful analysis as to its inclusiveness, information access, and ease of understanding.

There is evidence that stakeholders in the mining industry had been consulted prior to the formulation of the Mineral Law 2010 and the subsequent Decree 2012. For instance, several critiques of drafts of the mineral law can be obtained online, some of which were commissioned by the Vietnam Business Forum.[671] However, it is unclear as to whether the critiques have been taken into consideration where the input has been provided.

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668 Look at Vietnam (2010). "Miners are stuck in a deep hole," 30 May, 2010.
669 *Ibid.*
670 http://www.steelguru.com/raw_material_news/Vietnam_PM_approves_coal_import_tax_cut_to_lift_consumption/285758.html
671 See for instance http://www.vbf.org.vn/downloads/Comments%20on%20Draft%20decree%20on%20Mineral%20law_ENG.pdf

One area that has seen a marked improvement in transparency standards is the manner in which licenses are now handed out under Mineral Law 2010. Chapter 4, Article 19, Clause 1 requires that exploration and mining rights are auctioned. Another basic choice is the process for the awarding of licensing rights and contracts to decide which companies are to be involved in the extraction process. Transparency in the bidding process is an obvious precondition for a socially optimal outcome and in order to prevent corruption, rent-seeking behavior and misallocation.[672]

The earlier system involved either negotiations on a first-come first-served basis, a process that lacked transparency and was particularly susceptible to corruption or a strict first-come first-served rule, without discretion and without negotiation. This system though transparent was unlikely to result in rights/contracts being allocated to the companies best able to use them. Auctions on the other hand are transparent and allow for a competitive bidding process, and are thus most likely to ensure that rights/contracts are allocated to the companies best able to extract the resources, though their effectiveness depends on how they are designed.

Some members of Vietnam's National Assembly had expressed concerns over the efficacy with which the auctions could be implemented.[673] Care should be taken to ensure that the auctioning off of exploration and mining rights do not lead to misreporting and misrepresentation of the true size, grade and nature of the coal deposits. Understating the size and grade of newly discovered mineral deposits might support an auction winner's application for tax incentives and guarantee the ability to underreport mineral product production thus reducing financial benefits to the Government.

The Mineral Law 2010 does not introduce transparency in the licensing process from the point of view of tracking the stage at which a license approval is at. This then ensures that the licensing authorities do not need to issue decisions regarding licenses within a strict timeframe. Timeframes stated in relevant mineral legislation are reasonable but authorities do not work within these time limits. For example, when a company applies to extend the term of its exploration license it should not take half of the requested term of the extension to have an approval granted for such extension. So whilst the Government authorities are not required to complete their

672 P. Cramton (2009). How Best to Auction Natural Resources. *Handbook of Oil, Gas And Mineral Taxation*. Ed. Philip Daniel, Brenton Goldsworthy, Michael Keen, and Charles McPherson. Washington, DC: International Monetary Fund, 2009; A. Prat and T. Valletti (2001). Spectrum Auctions Versus Beauty Contests: Costs and Benefits, *Rivista di Politica Economica*, vol. 91, issue 4: 65-114.

673 Dudka, S. (2011). "Comments on Proposed New Mineral Law – Draft 5," Vietnam Business Forum.

work tasks within the legislated time, investors are forced to complete exploration and feasibility works in unreasonably short periods. And if they do not comply, their licenses are subject to termination. Thus, regulatory red tape can be kept in check if the transparency of the regulatory process is improved.

ILLEGAL PRACTICES

Illegalities in the Vietnamese mining sector have become more visible in recent years. This could also be the outcome of greater vigilance from the Central government. The illegalities in the mining sector are the result of several factors which include unclear laws, poorly equipped local governments, collusion between provincial governments and mining companies, and corruption.

For instance, Vinacomin was forced to pay more than US$9.76 million in back taxes in June 2012. The company had to formally apologies for the violations of several mining laws two months after its discovery by the government inspectorate. In March 2012, government inspectors asked Vinacomin to pay natural resource, corporate, value-added, and export taxes that the company claimed it had miscalculated between 2006 and 2009. [674]

The Ministry of Public Security (MPS) investigators also alleged that Indevco Corporation, in the northern Quang Ninh Province, was responsible for the illegal exportation of 2.8 million tons of coal. Aside from pecuniary offences, environmental rules have been ignored. Investigators from the MPS investigating nine coal mining companies found that seven of them did not use wastewater treatment systems at mining sites as per current environmental legislation required. They had also refrained from paying into an environmental mitigation fund. Furthermore, several of Vinacomin's subsidiaries were operating without licenses.[675]

According to a report released by the Government Inspectorate in May 2012, provincial government inspectors from across Vietnam issued fines totaling US$583,000 against the mining sector over the past three years. Violations have been found at all levels of the mining industry: from lax licensing to poor environmental protection. The report said the authorities reprimanded several mining companies for failing to effectively compensate the residents of communities that had been adversely affected by mining operations. The report also found poor management in the zoning of mining areas.[676]

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[674] Thanhnniennews (2012). "Panal targets mining corruption," 18 August, 2012.
[675] *Ibid.*
[676] *Ibid.*

Half of the 16 provinces were found to have current illegal mining operations. Although the violations of the law were quite obvious, the local authorities failed to address the issue. Overlapping authority and conflicts of interest between departments or even between the central and local governments in dealing with illegal mining problems have also played a part in the increase in illegal mining over the years.

5.1 COAL IN VIETNAM

Key Findings

- Vietnam is the leading supplier of anthracitic coal in the Asia-Pacific region.
- Despite several reforms, Vietnam has had a reputation of being a difficult place to do business on account of lack of transparency and inconsistency in the interpretation of regulations

Quality of the regulatory framework

- Regulations governing the extractive industry and coal often lack clarity. The new Mineral Law 2010 similarly leaves much interpretative leeway in certain clauses.
- There is often a lack of coordination amongst government entities which result in regulations that conflict in their objectives and result in a duplication of effort.
- The Mineral Law 2010 does not address the issue of uncertainty brought about by the devolution of authority between the center and the provinces.
- Given the sometimes conflicting and inconsistent interpretation of regulations, the multiple levels of regulation and the uncertainty that this engendered did not augur well for the timely and effective progress of a mining project.
- Regional governments lack the institutional capacity to administer their new responsibilities and lack of accountability for their actions.

Economic efficiency considerations

- The pertinence of ECONOMICS OF SCALE to mining efficacy has been acknowledged by Vietnam's new mineral law; however, ambiguity in the wording of the law diminishes its import.
- Vietnam's coal price-setting mechanism, which is based on a mine's marginal cost of production, could lead to a welfare loss as the mining

company is better informed of its costs than the regulator. Marginal cost pricing is an implicit subsidy to less efficient mines.

- Vietnam has been experimenting with different tax formulae in an attempt to optimize on revenues. However, frequent changes in taxation policy can have a detrimental impact of investor confidence in the sector.

Transparency and accountability

- There is evidence that stakeholders in the mining industry had been consulted prior to the formulation of Vietnam's new mineral law; however, it is unclear as to whether the critiques have been taken into consideration where the input has been provided.
- One area that has seen a marked improvement in transparency standards is the manner in which licenses are now handed out under Vietnam's new mineral law, which requires that exploration and mining rights are auctioned.
- Illegalities in the Vietnamese mining sector have become more visible in recent years, resulting from several factors which include unclear laws, poorly equipped local governments, collusion between provincial governments and mining companies, and corruption.

Recommendations

- Vietnam needs to have a formal process in place such that stakeholders in the country's extractive industry are consulted prior to the formulation a new regulatory policies.
- Investments are needed to raise the technical competence of the staff involved in the regulatory process. Regulatory authorities need to be compensated to lower the risk of regulatory capture.
- Regulatory coherence can be improved by setting up a formal institution that aligns policies with Vietnam's broader development objectives. The

ministries of energy, public finance, and planning should be form a part of the institution.

- Vietnam should clearly designate the extent of regulatory authority that local government regulatory authorities have.
- Raising the transparency of the regulatory process will reduce the potential for corruption and regulatory capture.

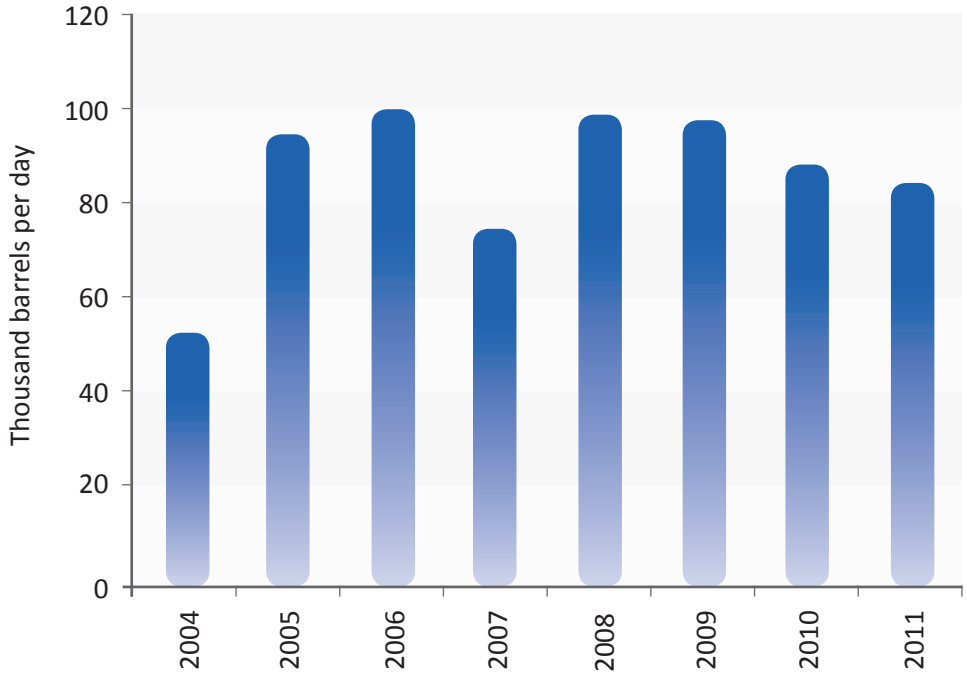
Timor Leste

Oil

OIL IN TIMOR LESTE

Timor-Leste has approximately 553.8 million barrels of proven crude oil reserves,[677] which refer to economically viable reserves that can be extracted given the current state of technology, according to the Organization of the Petroleum Exporting Countries (OPEC).[678] In comparison, Indonesia's reserves of nearly 4 billion barrels are larger than Timor's by a factor of ten.[679] However, since Timor-Leste has a population of around 1.1 million inhabitants,[680] its reserves on a per capita basis place it in the top 20 oil-producing countries.[681]

Figure 7.1. East Timor's oil production (2004–2011)



Source: US Energy Information Administration (http://www.eia.gov/countries/country-data.cfm?fips=TT#pet)

[677] This amounts to approximately 0.04% of the world's oil reserves. See http://globalvoicesonline.org/2010/03/06/east-timor-oil-wealth-and-national-survival/

[678] See http://www.opec.org/library/Annual%20Statistical%20Bulletin/interactive/current/FileZ/XL/T31.HTM

[679] *Ibid.*

[680] See http://www.dfat.gov.au/geo/east_timor/east_timor_brief.html.

[681] See http://world.bymap.org/OilReserves.html.

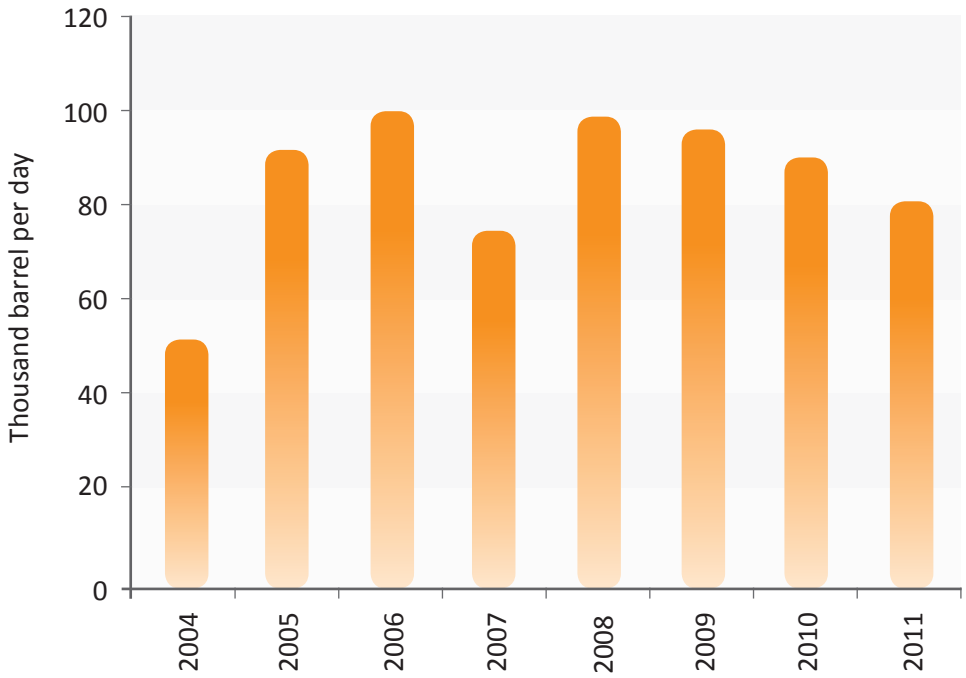
The country is ranked 52nd in the world in terms of oil production per day in 2011 with output of approximately 83.7 thousand barrels of crude per day.[682] East Timor's hydrocarbon reserves are offshore, located beneath the Timor Sea.[683] Several offshore petroleum projects are currently in operation with substantial exploration activity already underway and some proposed projects in the pipeline.

The petroleum major ConocoPhillips operates the largest petroleum project in the Timor Sea, the Bayu-Undan project which is located approximately 500 km north-west of the Australian city of Darwin.[684] Production began in 2004 with liquids (condensate, propane and butane) being stripped from the raw production stream and exported.[685] Gas produced offshore at Bayu-Undan is now transported to the Darwin plant where it is converted into a liquid and transported to Japan under long-term sales contracts. Other significant oil projects include AED Oil's large production at Puffin oilfield[686] and Woodside Petroleum is producing oil at the Laminaria oilfield.[687]

The country is highly dependent on its petroleum revenues to finance its development. Given its proven reserves, if crude oil prices were at US $80/barrel, the country's petroleum wealth would be worth approximately $36,920 per citizen. This does not include East Timor's significant natural gas and mineral wealth. In comparison, its non-oil nominal per capita GDP is about $391 per year.[688] Oil's share in the country' GDP amounted to 89% in 2010.[689]

682 US Energy Information Administration (http://www.eia.gov/countries/country-data.cfm?fips=TT#pet).
683 See http://www.seasite.niu.edu/easttimor/oil.htm.
684 See http://www.conocophillips.com/EN/about/worldwide_ops/asia-me/Pages/Australia.aspx
685 Ibid.
686 Wilson, N. (2007). "AED ship comes in off WA coast," The Australian.
687 See http://www.woodside.com.au/Our-Business/Australia-Oil/Pages/Laminaria-Corallina.aspx.
688 See http://www.revenuewatch.org/countries/asia-pacific/timor-leste/transparency-snapshot.
689 See http://www.laohamutuk.org/Oil/curse/OilInTLOilwatch.htm.

Figure 7.2 East Timor's net oil exports (2004–2011)



Source: US Energy Information Administration (http://www.eia.gov/countries/country-data.cfm?fips=TT#pet)

East Timor exports most of the oil that it produces given its low domestic consumption. This is on account of the fact that the country is a lower-middle income economy as per the World Bank with 52.9% living on less than US $1.25 a day and half the population being illiterate.[690] The country thus ranks poorly on the Human Development Index at 158 out if 183 countries surveyed in 2011. Industrial development has yet to take root in the country with even the petroleum industry not having developed upstream capacity there. On comparing the magnitude of exports in Figure 7.2 with East Timor's production as indicated in Figure 6.1.1, it can be noted that the bulk of the country's oil production is exported. For instance, East Timor consumed only three thousand barrels of oil per day while exporting 80.7 barrels per day in 2011.

[690] See http://data.worldbank.org/country/timor-leste

HISTORY AND EVOLUTION OF THE INDUSTRY

East Timor has had a long history of colonial rule starting with the Portuguese in 1520.[691] During the Portuguese rule, East Timor was a trading outpost for sandalwood and then later for coffee.[692] Following the departure of the Portuguese in 1974,[693] a civil war broke out in the country. In the same year, Indonesia invaded East Timor occupying it for the next quarter-century that saw a third of the pre-invasion population perish.[694]

During this time, a resistance movement against Indonesian rule garnered increasing support from the East Timorese. The changing political situation in Indonesia allowed the United Nations to conduct a referendum in 1999 revealing that about 80% of the Timorese were in favor of Independence.[695] However, post-referendum, Indonesian backed militia leveled the country burning down three-fourth of the country's buildings and destroying infrastructure.[696]International peacekeepers were brought in to stabilize the situation with the United Nations governing Timor-Leste from October 1999 until independence on May 20, 2002.[697]

East Timor inherited no permanent maritime boundaries when it attained independence. This would be an issue going ahead given that the country's oil and gas reserves are off-shore. The only existing treaty was the rejected Timor Gap Treaty, which signed between the Australian and Indonesian governments.[698] A provisional agreement (the Timor Sea Treaty, signed when East Timor became independent on 20 May 2002) defined a Joint Petroleum Development Area (JPDA), and awarded 90% of revenues from existing projects in that area to East Timor and 10% to Australia.[699] The first significant new development in the JPDA since Timorese independence is the largest petroleum resource in the Timor Sea, the Greater

691 See http://www.factmonster.com/ipka/A0902237.html.
692 See http://www.bbc.co.uk/news/world-asia-pacific-14952883.
693 *Ibid*.
694 Strong resistance to Indonesian rule was followed by repression and famine in which 200,000 people are thought to have died. See http://www.bbc.co.uk/news/world-asia-pacific-14952883.
695 See http://www.laohamutuk.org/Oil/curse/OilInTLOilwatch.htm.
696 *Ibid*.
697 See http://www.bbc.co.uk/news/world-asia-pacific-14952883.
698 The treaty allowed Australia and Indonesia to jointly exploit the petroleum resources in a part of the Timor Sea seabed which were claimed by both Australia and Indonesia. The portion of the seabed was known as the Timor Gap as it formed a break or gap in the Australia-Indonesia maritime border.
699 Please refer to the Timor Sea Treaty: http://www.anp-tl.org/webs/anptlweb.nsf/vwAll/Resource-Timor%20Sea%20Treaty/$File/Timor%20Sea%20Treaty.pdf?openelement.

Sunrise gas field. Its exploitation was the subject of separate agreements in 2003 and 2005.[700]

The government of East Timor has sought to negotiate a definite boundary with Australia at the halfway line between the countries, in accordance with the United Nations Convention on the Law of the Sea. The government of Australia preferred to establish the boundary at the end of the wide Australian continental shelf, as agreed with Indonesia in 1972 and 1991. Normally a dispute such as this would be referred to the International Court of Justice or the International Tribunal for the Law of the Sea for an impartial decision,[701] but the Australian government had withdrawn itself from these international jurisdictions (solely on matters relating to maritime boundaries) shortly before Timorese independence.[702]

Nevertheless, under public and diplomatic pressure, the Australian government offered instead a last-minute concession on Greater Sunrise gas field royalties alone. On July 7, 2005, an agreement was signed under which both countries would set aside the dispute over the maritime boundary, and East Timor would receive 50% of the revenues from the Greater Sunrise development (which could amount to US $20 billion over the lifetime of the project).[703] Other developments within waters claimed by East Timor but outside the JPDA continue to be exploited unilaterally by Australia, however.[704]

Timor-Leste seems to have put an effort into building and strengthening State institutions, enacting laws and regulations, and transparently managing public finances. The Government has invested in establishing the necessary regulatory bodies including the National Petroleum Authority (NPA), regularly publishing information on its petroleum revenues, and establishing the Timor-Leste Transparency Model which opens the entire mineral processing chain from extraction to expenditure to public scrutiny.[705] The initiatives at transparent governance have been noted by international agencies including the United Nations, the World Bank, and the International Monetary Fund.[706]

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700 Please refer to http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2003_3_taxation_Bayu_undan_contractors_.pdf, http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2003_4_petroleum_development_timor_sea_.pdf, http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2005_13_petroleum_activities_.pdf.

701 See http://www.etan.org/issues/tsea/plainfact.htm.

702 See http://www.austlii.edu.au/au/other/dfat/treaties/2002/5.html.

703 See http://english.nuqudy.com/Gulf/Qatar_Signs_Agreeme-640.

704 See http://www.pm.gov.tp/bill.htm.

705 See http://timor-leste.gov.tl/?p=7313&lang=en.

706 *Ibid.*

In 2003, the Government of East Timor enacted the Law on the Petroleum Development of Timor Sea (Tax Stability) (Law No. 4/2003) that authorizes it to enter into agreements with investors in the Joint Petroleum Development Area (as established by the Timor Sea Treaty) aiming to stabilize the tax regime on long-term petroleum projects.[707] This law complements the Law on the Taxation of Bayu-Undan Contractors, which establishes the tax regime for the development of the Bayu-Undan field.[708] The Laws protect investors from rises in tax rates that might occur after the two parties have agreed upon the applicable tax rate for the particular petroleum project. Conversely, it also ensures that the investors do not benefit from reductions in tax rates after the fact.

The Government of Timor-Leste decided to establish a Petroleum Fund to manage their petroleum revenue and they chose to create a separate law for that purpose (Law No 9/2005).[709] The Petroleum Fund Law institutionalizes some mechanisms that may assist Timor-Leste to sustainably manage its petroleum revenue, and avoid the resource curse. The Petroleum Fund Law establishes the Petroleum Fund for Timor-Leste (hereafter referred to as the Petroleum Fund), which sets the parameters for operation and management of the Petroleum Fund, governs the collection and management of receipts associated with petroleum wealth, regulates transfers to the State Budget, and provides for government accountability and oversight of these activities.

Timor-Leste received its first payment of petroleum revenue in October 2000. At that time (under an arrangement put in place by the United Nations Transitional Administration in Timor-Leste) royalties were deposited into a specific account of the Timor-Leste's Central Bank and accrued in that account. Taxes earned from petroleum exploitation were not saved, but spent via the budget process along with domestic revenue. This was an interim arrangement with no detailed plans for how petroleum revenue should be invested or when and how it should be spent. The arrangement allowed taxes from petroleum exploitation to be spent outside

[707] See http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2003_4_petroleum_development_timor_sea_.pdf.

[708] The Bayu-Undan field is, to date, the biggest discovery in the Joint Petroleum Development Area. The production and fiscal revenues relating to this field shall represent a very significant stake in the national budget of Timor-Leste. See http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2003_3_taxation_Bayu_undan_contractors_.pdf.

[709] See http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2005_9_petroleum_fund_law_.pdf.

a petroleum revenue framework and thus a more rigorous approach was needed before substantial amounts of petroleum revenue began to flow.

In 2005, the country passed the Petroleum Taxation Law (Law No. 8/2005).[710] The Law provided details on the taxation that contractors would face, the applicable value added tax rate, the limitations on deductions, the interest deductions, the decommissioning expenditures, the calculation of deprecation, and the supplemental tax among other things. The Law stated that the country's finance minister would be responsible for the enforcement of the regulations contained in the Law, including regulations of a transitional nature that would be a consequence of this Law.

The Law on Petroleum Activities (Law No. 13/2005) was passed in the same year.[711] The Law looked to create a regulatory regime that was conducive to foreign investment in the country's petroleum sector so as to help the country's broad development goals. The Law gave the government the authority to decide which petroleum companies could explore and exploit the country's mineral resources. In drafting this law, the petroleum regimes of other countries had been taken into consideration to ensure the international competitiveness of East Timor was not hindered. Aside from the development angle, the Law also sought to ensure stability and transparency in regulating the development of petroleum resources.

The treatment of contracts between the State and the investor were put forth in the Decree-Law on Public Tendering in Respect of Petroleum Contract Awards (Decree-Law No. 7/2005).[712] The Law requires that the granting of permission, including the award of petroleum contracts, be preceded by a public tender as a rule of thumb. The Decree-Law also gives the Government the power to issue regulations on matters relating to petroleum operations, including petroleum exploration and production. Contracts are to be awarded on the basis of competitive bidding. It also states that production sharing of petroleum between the contractor and the State, after the contractor has fully recovered the costs incurred, is at the rate of forty percent (40%) for the State, and sixty percent (60%) for the contractor.

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710 See http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2005_8_petroleum_taxation_law_.pdf.

711 See http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2005_13_petroleum_activities_.pdf.

712 See http://timor-leste.gov.tl/wp-content/uploads/2010/03/DL_2005_7_public_tender_oil_contracts_.pdf.

In 2008, the Government created the National Petroleum Authority (NPA) to serve as the industry regulator via Decree-Law No. 2/2008 on the NPA.[713] The NPA is tasked with establishing and supervising compliance with the enacted rules and regulations covering the exploration, development, production, transportation and distribution of petroleum and natural gas resources. The NPA was envisioned as being able to ensure the petroleum and gas security of the country by managing the country's minimum strategic fuel stock requirements and also setting minimum quality standards for petroleum products available in the domestic market and minimum standards of compliance for consumer security.

GOVERNANCE OF THE PETROLEUM INDUSTRY

Having briefly discussed the principal laws and agencies that govern the country's petroleum industry, the governance of the sector will be analyzed in the next section.

East Timor has striven to enact laws and regulations that enhance transparency. Despite transparency being the cornerstone of governance in the country, the country has ranked very poorly on Transparency International's (TI) Corruptions Perceptions Index ranking 143rd out of 183 countries.[714]

The country does not fare to well on TI's control of corruption which reflects perceptions of the extent to which public power is exercised for private gain including the "capture" of the state by elites and private interests.[715] The issues of regulatory capture and corruption also feeds into the general business environment. For instance, the World Bank prepares an annual Ease of Doing Business assessment which examines issues such as starting a business, enforcing contracts, and dealing with construction permits. In 2012, the World Bank ranked East Timor 169 out of 183 assessed economies.[716]

While there is a sense that the country is trying to benchmark its regulations and regulatory formulation process to prescribed best practices, policy implementation is still a challenge. In the following section, an assessment of the factors that affect the governance of East Timor's petroleum resources is undertaken.

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[713] See http://timor-leste.gov.tl/wp-content/uploads/2010/03/DL_2008_2_NATIONAL_PETROLEUM_AUTHORITY_.pdf.

[714] See http://www.transparency.org/country#TLS.

[715] *Ibid.*

[716] For details of the methodology, please refer to http://www.doingbusiness.org/rankings.

QUALITY OF THE REGULATORY FRAMEWORK

COMPLEX REGULATIONS

Regulations governing Timor's petroleum sector are quite intricate especially regarding revenue collection. Companies pay royalties and taxes to the National Petroleum Authority (ANP) as per their production sharing contracts (PSCs) and to the government as per Timor-Leste's tax laws.[717] The responsibility for the collection and enforcement of tax collection lie with the ANP and the National Directorate of Petroleum Revenues (NDPR) in the Ministry of Finance.

To complicate matters, on top of parting with a percentage of their sales of oil and gas as per the PSCs, oil companies have to pay taxes on their income, profits, and an additional tax when a project's profitability crosses a threshold. Operating expenses can be deducted by the companies when taxes are calculated through a process called "cost recovery," which is in effect a subsidy for project expenses. The PSCs specify which costs are recoverable, and each month the companies supply a list of the expenses they have taken off their taxes. This brings about some subjectivity to the calculations as well the possibility of manipulation.

Given the highly technical and complex task of ascertaining the correct revenues owed to the government, companies might err in their calculations or government officials might find it difficult to determine whether the regulations are being followed. This is why there have been a few problems between Timor-Leste and multinational oil and gas companies in recent years. For instance, the government of Timor-Leste is pursuing unpaid taxes which it claims could total as much as $3 billion from the ConocoPhillips-operated Bayu-Undan oil and gas project.[718]

Timor was able to access the oil and gas companies' financial records only in 2010 after which the specialized tax task force put together in the nation's finance ministry began its forensic auditing investigations.[719] Of the dozens of cases of tax underpayment so far discovered, 28 have been settled for a total of $362 million.

The law was not enforced as the administrative capacity to manage the complex regulations governing the industry were not in place. Several of the companies

[717] See http://timor-leste.gov.tl/wp-content/uploads/2010/03/Law_2003_4_petroleum_development_timor_sea_.pdf.
[718] See http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/7117097.
[719] See http://www.abc.net.au/news/2012-10-01/miners-owe-east-timor-millions-in-taxes/4289612; http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/7117097.

involved are appealing in the Dili District Court against the tax reassessments of the East Timorese government.

REGULATORY UNCERTAINTY

The issues mentioned in the previous section wherein multinational companies are being asked pay back-taxes have lowered Timor's attractiveness. The unevenness with which regulations are enforced usually affects business confidence. For instance, the Fraser Institute Global Petroleum Survey (2012) shows that perceptions of the country's openness to investment in the petroleum sector have been lowered due to the recent tax issues.[720]

Furthermore, to date Timor-Leste has not yet enacted a law on expropriation. However, Article 54 of the constitution states that requisitioning and expropriation of property for public purposes shall only take place following fair compensation in accordance with the law. The Foreign Investment Law of 2005 provides for the equal treatment of foreign and national investors. The private investment bill before Parliament includes the principle of equal treatment for Timorese and non-Timorese.

Timor-Leste is party to the Convention on the Settlement of Investment disputes between States and Nationals of Other States (the ICSID Convention). It is not party to the New York Convention of 1958 on the Recognition and Enforcement of Foreign Arbitral Awards. The Court of Appeals must recognize a foreign judgment or arbitral award for its enforcement in Timor-Leste.

The justice system is in transition. Parliament has not yet completed enacting a full a set of national legislation. Hence, the legal foundations are an uncertain and changing mix of Portuguese, Indonesian, United Nations interim administration, and Timorese jurisprudence. New legislation is enacted in Portuguese. Many legislators, prosecutors, judges, attorneys, police officers, plaintiffs, and defendants lack the mastery of Portuguese to operate effectively in the new system.[721]

The Fraser Institute's regulatory climate index ranks jurisdictions according to investors' perceptions of the regulatory hurdles they impose, including regulatory uncertainty and duplication, labor regulations, fairness and transparency of the legal system, and the cost of compliance. Poor performance on regulatory issues

[720] See http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/global-petroleum-survey-2012.pdf.
[721] US Department of State (2011). "2011 Investment Climate Statement: Timor-Leste," Bureau of Economic, Energy and Business Affairs.

is a major reason why many countries are regarded as relatively unattractive for investment.[722] On this metric, Timor fared worse than Myanmar and the Republic of Congo.

The fact that the country is still undergoing many changes given that it has about a decade of sovereignty after many years under colonial rule add to the larger uncertainty as to how the country's laws will evolve.

LACK OF REGULATORY CAPACITY

The United Nations' Human Development Index (HDI) measures a country's achievement on the mortality and morbidity of its citizens, access to knowledge, and standard of living.[723] The index is classified into four quartiles: very high, high, medium, and low. Timor-Leste ranked in the bottom-most quartile achieving a score of 147 out of the 187 countries surveyed in 2011.[724] This is unsurprising given the country's history if colonialism that ended with the creation of the world's newest nation in 2002. However, this has meant that human resource is scarce in the country.

Consequently, there has proven to be a great need for increased administrative support and development of the education program for the petroleum sector in the country.[725] There seems to be the opinion that most government employees lack administrative experience, while those that do have the requisite skill-set come from when Timor was governed by Indonesia. Given Indonesia's own problems with regulatory planning and execution, this is far from desirable.

The government of Timor-Lester has acknowledged the need for building capacity in press release following allegations of tax-evasion against multinational oil and gas companies.[726] This problem might be overcome by direct technical assistance to raise the skills of government employees and ensure that the best practice regulations enacted do receive the necessary administrative support allowing for proper execution.

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[722] See http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/global-petroleum-survey-2012.pdf.
[723] See http://hdr.undp.org/en/statistics/
[724] Ibid.
[725] GEO ExPro (2005). "Surrounded by hydrocarbons," May 2005.
[726] See http://www.laohamutuk.org/Oil/tax/AgioPetroRevs11oct2012en.pdf.

ECONOMIC EFFICIENCY AND EQUITY CONSIDERATIONS

REVENUE MANAGEMENT

Established in July 2005, the Petroleum Fund is Timor-Leste's sovereign wealth fund created as per the Petroleum Fund Act (Law no. 9/2005). The Minister of Planning and Finance is responsible for its overall management and investment strategy; the Banking and Payments Authority (the central bank equivalent) is responsible for its operational management. By law, all petroleum and related revenues must be paid into the fund, with the balance of the fund invested in international financial markets.[727] By law, the Fund cannot be used as collateral on sovereign debt and at least 90% of its assets must be invested in low-risk bonds.

The Petroleum Fund publishes monthly, quarterly, and annual reports on-line. The law governing the fund provides that there shall at all times be appointed an independent auditor, which shall be an internationally recognized accounting firm. In 2009, the Peterson Institute ranked the Petroleum Fund third best managed in the world after New Zealand and Norway.[728] With a ceiling on annual withdrawals set by law, the Petroleum Fund is the primary source of funding for the government budget.[729]

The ceiling is known as the Estimated Sustainable Income (ESI), calculated as 3% of the total value of the money in the Fund and the expected future revenues from oil and gas fields which are already being developed. The Law allows the Government to spend more than the ESI contingent to the Parliament agreeing after have received a detailed presentation on how the extra spending was in Timor's long-term interest.

With increasingly ambitious development goals, the Government has been overdrawing from the Petroleum Fund. In 2009, the Government overspent the ESI by $104 million. The Ministry of Finance calculated the ESI for 2010 as $502 million. But although the original 2010 budget stayed within the re-estimated $502 million ESI, the mid-year budget rectification exceeded the amount by $309 million.

It now seems that the ESI is gradually being considered as a guideline rather than a strict upper bound. Furthermore, the recent revision of the Petroleum Fund Law takes on more risk now allowing half of the fund to be invested in financial

[727] See http://www.nytimes.com/2006/02/21/business/worldbusiness/21iht-timor.html?_r=3&,
[728] See http://www.forbes.com/global/2009/0907/power-women-09-east-timor-finance-emilia-pires.html.
[729] US Department of State (2011), op. cit.

markets, using the Fund as collateral for borrowing, and weakening the sustainable spending rule. It also undercuts the roles of the Investment Advisory Board and the Banking and Payments Authority, concentrating power in the Minister of Finance. These revisions also reduce transparency.[730]

TRANSPARENCY AND ACCOUNTABILITY

TRANSPARENCY

Best practice regulation requires that a transparent, user-centric approach to the regulatory process. This means that stakeholders are consulted in the policy formulation process and the information is made available to them at minimal cost. Evaluation of the transparency of the policy formulation and administration process requires careful analysis as to its inclusiveness, information access, and ease of understanding.

Timor-Leste does looks to public consultation before the enactment of its law. Draft decrees presented to the stakeholders and their opinion sought. However, many organizations within the country do not have the capacity to effectively critique government proposals which may limit their influence over government policy. In the case where input is provided, it not necessarily taken into consideration. Take for instance the occasion wherein the Ministry of Natural Resources, Minerals and Energy Policy (MNRMEP) circulated three proposed decree-laws for a 15-day public consultation in March 2007.

However, stakeholders felt that the time, notice, language (Portuguese) and media used for this public consultation made it impossible to get meaningful input from Timor-Leste's population or outside experts, and the consultation should have be extended or re-opened. The proposed legislation had not been discussed in Parliament till date and did not contain any environmental safeguards. As the draft laws excessively concentrated power in the hands of the MNRMEP, it increased the risk of corruption, abuse of power, and maladministration.

The Government of Timor-Leste publishes an annual budget which includes revenues and non-donor funded expenditures. Over the past few years, growth in budget revenues has been financed mainly out of growth in ESI, which has increased with new oil and gas discoveries and, more recently, with changes to the calculation formula.

[730] See http://www.laohamutuk.org/Oil/PetFund/revision/10PFRevision.htm.

Government expenditures have grown significantly each year since independence as well, from just over $200 million in 2003 to $985 million planned for 2011, excluding donor-supported projects. The proposed 2011 State Budget allocates 44% to domestic investment and 17% to direct transfers to citizens, mainly to veterans and survivors of the conflict with Indonesia. While petroleum funds are not explicitly earmarked, they account for 89% of the budget, so Timor-Leste effectively operates a direct distribution scheme through cash transfer programs.

The Open Budget Survey 2010 ranks Timor-Leste below average in terms of budget transparency and reporting on financial activities with a score of 34/100. According to the International Budget Partnership, the Government failed to publish a pre-budget statement, an enacted budget, budget highlights, a mid-year review, or a public audit prior to 2010. Timor-Leste does not yet have a supreme audit institution, and budgets that have been released fail do not include disaggregated expenditures, such as information on extra-budgetary funds (e.g., foreign aid), quasi-fiscal activities, tax expenditures, assets or liabilities.

In addition, the Secretariat of State for Natural Resources reports revenues by type of payment, as well as on a company-by-company basis, in its EITI reports. Timor-Leste received poorer Index scores on access to information, specifically as relates to contract transparency, internal audits and parliamentary oversight.[731] Timor-Leste often refers to its having been awarded the EITI compliance status in July 2010, being the third country in the world to be granted this status. However, it has been slow to produce its ETI reports. By May 2012, neither the 2010 nor 2011 EITI reports had been published. Although it should be noted that EITI rules allow the country to publish its 2010 report until the end of 2012.

REGULATORY CAPTURE

The recent revision of the Petroleum Fund Law takes on more risk now allowing half the fund to be invested in financial markets, using the Fund as collateral for borrowing, and weakening the sustainable spending rule. It also undercuts the roles of the Investment Advisory Board and the Banking and Payments Authority, concentrating power in the Minister of Finance. These revisions also reduce transparency and increase the possibility of capture by vested interests.[732]

Timor-Leste has been having more frequent charges of corruption leveled against high-standing civil servants. To tackle increasing corruption allegations

[731] See http://www.revenuewatch.org/countries/asia-pacific/timor-leste/transparency-snapshot.
[732] See http://www.laohamutuk.org/Oil/PetFund/revision/10PFRevision.htm.

against senior government officials, the Government of Timor-Leste instituted the Anti-Corruption Commission (ACC) in 2010.[733] By August 2012, the ACC had filed 142 cases of allegations of corrupt conduct by state officials that were reported by members of the public. Between 2010 and 2011, 103 cases had been filed while another 39 cases had been filed in the first six months of 2012.[734]

Complex legislation, insufficient checks and balances on administrative procedures, and a paucity of human resource to properly enforce regulations can make regulatory capture a serious problem in the country.

[733] See http://news.bbc.co.uk/2/hi/asia-pacific/8527628.stm.
[734] See http://easttimorlegal.blogspot.com/2012/08/battle-against-corruption-continues-in.html.

1.1 OIL IN TIMOR-LESTE

Key Findings

- Timor-Leste is ranked 52nd in the world in terms of oil production per day in 2011 with output of approximately 83.7 thousand barrels of crude per day.
- Despite Timor-Leste striving to enact laws and regulations that enhance transparency, the country has ranked very poorly on Transparency International's (TI) Corruptions Perceptions Index ranking 143rd out of 183 countries.

Quality of the regulatory framework

- Regulations governing Timor's petroleum sector are quite intricate especially regarding revenue collection. This complexity makes adherence to the regulations difficult to follow as well as police.
- Furthermore, to date Timor-Leste has not yet enacted a law on expropriation. However, the constitution states that requisitioning and expropriation of property for public purposes will be followed by fair compensation.
- The justice system is in transition. The country's parliament has not yet completed enacting a full a set of national legislations. Hence, the legal foundations are an uncertain and changing mix of Portuguese, Indonesian, United Nations interim administration, and Timorese jurisprudence.
- Government employees often lack administrative experience. While those that do have the requisite skill-set come from when Timor was governed by Indonesia.

Economic efficiency considerations

- Timor-Leste manages its petroleum wealth via a Petroleum Fund established in 2005 as per the Petroleum Fund Act (Law no. 9/2005). By law, all petroleum and related revenues must be paid into the fund, with the balance of the fund invested in international financial markets.
- The Government of Timor-Leste publishes an annual budget which includes revenues and non-donor funded expenditures. Over the past few years, growth in budget revenues has been financed mainly out of growth in the petroleum fund, which has increased with new oil and gas discoveries.

- Timor-Leste does not yet have a supreme audit institution, and budgets that have been released fail do not include disaggregated expenditures, such as information on extra-budgetary funds (e.g., foreign aid), quasi-fiscal activities, tax expenditures, assets or liabilities.

Transparency and accountability

- Timor-Leste does look to public consultation before the enactment of its law. Draft decrees presented to the stakeholders and their opinion sought. However, many organizations within the country do not have the capacity to effectively critique government proposals which may limit their influence over government policy.
- The Open Budget Survey 2010 ranks Timor-Leste below average in terms of budget transparency and reporting on financial activities with a score of 34/100.
- Timor-Leste has been having more frequent charges of corruption leveled against high-standing civil servants. To tackle increasing corruption allegations against senior government officials, the Government of Timor-Leste instituted the Anti-Corruption Commission (ACC) in 2010.

Recommendations

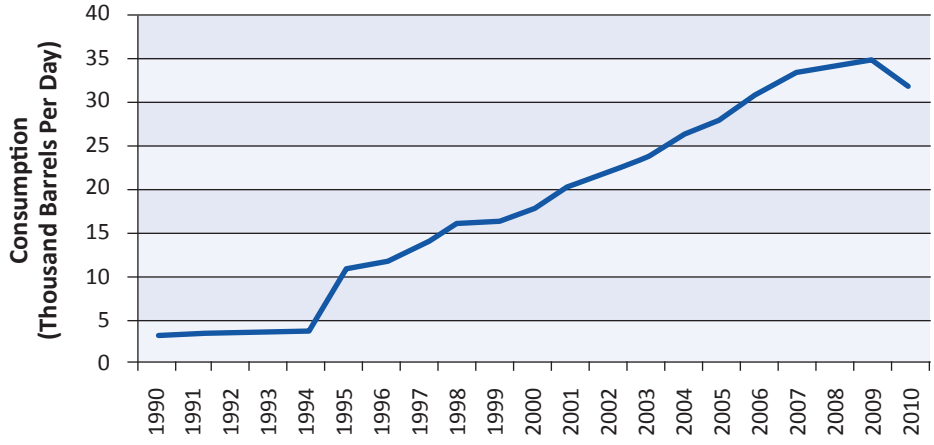
- While transparency underpins Timor-Leste's regulations, this should not be the only criterion used to judge good governance. The country needs to establish a broader set of metrics to gauge its performance.
- The reports that the country produces under its transparency initiatives need to provide information in greater detail in order to allow for greater scrutiny by concerned groups. Also, these reports need to be produced in a timely manner lest the exercise become redundant due to delays.
- Timor-Leste needs to build up its regulatory capacity ensuring that personnel are technically adept at providing administrative support to the complex regulatory regime in place
- The country needs to simplify its regulations to ensure that compliance cannot be circumvented due to lack of understanding on the part of companies or regulatory authorities.
- Changes to the regulatory fund need to be deliberated over keeping in mind the guiding principles for creating the fund.

CAMBODIA
OIL

OIL IN CAMBODIA

Cambodia does not produce any oil or natural gas, and does not have any refining facilities. As such Cambodia does not import any crude oil. Instead, all commercial fuels in Cambodia are imported in the form of LPG, gasoline, fuel oil and other petroleum products. Figure 6.2.1 shows how Cambodia's annual consumption of petroleum products has evolved over the last two decades. There was a sharp increase in petroleum consumption between 1994 and 1995. Petroleum consumption increased steadily at an average rate of 9% annually between 1995 and 2009, before declining in 2010.[735]

Figure 8.1 Annual consumption of all petroleum products in Cambodia, 1990-2010 (thousand barrels per day)



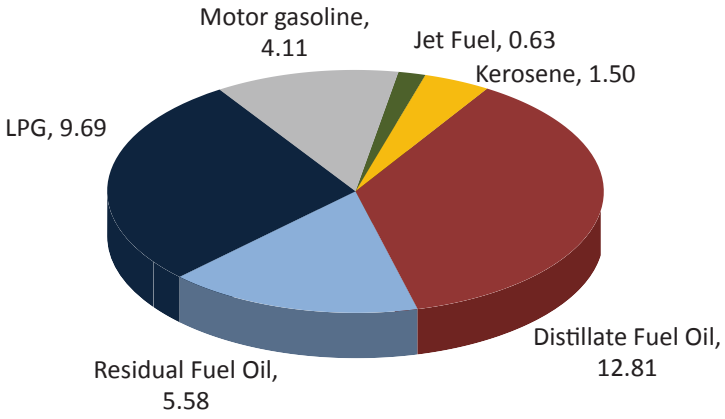
Source: Energy Information Administration (EIA), USA (2012). International Energy Statistics.

Figure 8.2 below shows the breakdown of petroleum consumption in Cambodia into various fuels in the year 2008. The major consumption is of fuel oil (whether distillate or residual), while significant amounts of liquefied petroleum gas (LPG) and motor gasoline are imported as well. It should be noted that very high taxes are imposed on petroleum products, and these taxes account for around one-fifth

[735] Annual growth rate calculated based on data from Energy Information Administration (EIA), USA (2012). International Energy Statistics.

of total government revenues. As such petroleum product prices in Cambodia are among the highest in the region, exceeding prices in Malaysia, Vietnam and Thailand and comparable to prices in Singapore.[736]

Figure 8.2 Consumption of various petroleum products in Cambodia, 2008



Source: Energy Information Administration (EIA), USA (2012). International Energy Statistics.

Cambodia has both offshore and, potentially, onshore reserves of oil and gas.[737] Petroleum exploration activities are largely at the preliminary stage, and as such the total potential reserves are not yet well-known. Cambodia has awarded six offshore exploration blocks to various consortiums of foreign companies. Block A has been awarded to Chevron (30%) in partnership with Mitsui (30%), KrisEnergy (25%) and GS Caltex (15%); Block B to PT Exploration and Production (33.34%), Singapore Petroleum (33.33%) and Resourceful Petroleum (33.33%); Block C to Polytec Petroleum Hong Kong; Block D to China Petrotech Holdings Limited; Block E to Medco Energi (60%), Kuwait Energy (30%), and JHL Petroleum (10%); and Block F to Chinese National Offshore Oil Corporation (CNOOC).[738] Of these, though, Blocks B to F are still at the early stages of exploration.

[736] World Bank (2006). Cambodia Energy Sector Strategy Review. World Bank Issues Paper, April 2006.
[737] K. Phyrum (2007). Prospects of Oil & Gas in Cambodia. Workshop on Capital Market Development in Cambodia, Intercontinental Hotel, Phnom Penh. May 30-31, 2007. Accessed at http://www.eicambodia.org/events/upfile/Prospects_of_Oil_Gas_in_Cambodia_Phyrum.pdf.
[738] Cambodian National Petroleum Authority (CNPA) (2011). Offshore Operations. Accessed at http://www.cnpa.gov.kh/index.php?option=com_content&view=article&id=51&Itemid=126.

Exploration activities are most advanced at Block A in the Gulf of Thailand. Oil reserves in Block A were initially estimated to be around 400 million barrels by Chevron.[739] To put this into context, this is comparable to proved reserves of oil in Thailand, but is much lower than proved reserves in Indonesia, Malaysia and Vietnam.[740] Given that Cambodia consumed 32,000 barrels per day in 2010, these reserves would be sufficient to cover 34 years of Cambodian oil consumption at its current rate.[741] Subsequently, though, Chevron has found that the oil is scattered in pockets and difficult to extract, meaning proved reserves from Block A are likely to be lower than the initial estimates.[742]

In September 2010, the group submitted a production permit application outlining details of the first phase of development of the Apsara field in Block A.[743] Chevron expects government approval, and a final investment decision, by the end of 2012.[744] As such production is unlikely to begin before at least mid-2013 and in recent announcements the Cambodian government has not specified any starting date for production.[745] This is in contrast to earlier government pronouncements that oil production would begin on the 12th of December 2012 at 12.00 A.M,[746] a target subsequently extended to 12 noon on the 12th of December 2012.[747]

In addition to the reserves in block A, an unspecified amount of crude oil reserves as well as an estimated 12-14 Tcf of natural gas exist in offshore blocks

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739 S. Postlewaite (2008). Next Stop for Big Oil: Cambodia? Bloomberg Businessweek, 14 February 2008.

740 BP (2012). Statistical Review of World Energy June 2012.

741 However, it is important to note that initial reserve estimates (such as Chevron's 400 million barrels estimate for Block A) are qualitatively very different from "proved reserves" which are defined as 'those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions.' See BP (2012), op. cit.

742 The Economist (2009). Cambodia's oil resources: Blessing or curse? Waiting for the oil (and money) to flow. 26 February 2009.

743 Platts (2012). Cambodia eyes domestic oil production, refinery for energy security: official. 27 September 2012.

744 Chevron (2012). Cambodia Fact Sheet. April 2012. Accessed at http://www.chevron.com/documents/pdf/CambodiaFactSheet.pdf

745 Platts (2012), op. cit.

746 Energy-pedia (2010). Cambodia says oil production set to begin in 2012. 5th July 2010. Accessed at http://www.energy-pedia.com/news/cambodia/cambodia-says-oil-production-set-to-begin-in-2012.

747 J. Daly (2012). Cambodia – Next Oil and Natural Gas Frontier? Oilprice.com, 7th February 2012. Accessed at http://oilprice.com/Energy/Energy-General/Cambodia-Next-Oil-and-Natural-Gas-Frontier.html.

near the southwestern coast of Cambodia in the Gulf of Thailand. However, these blocks fall under the Overlapping Claims Area that is claimed by both Cambodia and Thailand. In 2000, the two countries signed a Memorandum of Understanding proposing joint development of the blocks furthest offshore and division of the blocks nearer to the shore between the two countries.[748] However, the Thailand government put the MoU on hold in November 2009, and negotiations over the Overlapping Claims Area are still ongoing.[749]

Cambodia also has potential onshore oil reserves. In the northern provinces of Preah Vihear, Siem Reap and Kampong Thom, seismic studies are being carried out in 17 oil blocks covering an area of over 2,300 square miles.[750] The Tonle Sap basin, which contains Tonle Sap Lake which is Southeast Asia's largest freshwater lake, may also have oil reserves. Airborne gravity and magnetic surveys were carried out by the Japan National Oil Company over the area in the late 1990s.[751] In May 2010, a Memorandum of Understanding was signed between the Cambodian National Petroleum Authority (CNPA) and Japan Oil, Gas and Metals National Corporation or JOGMEC (formed in 2004 by the merger of the Japan National Oil Company and the Metal Mining Agency of Japan). The MoU requires JOGMEC to carry out a feasibility study in Block 17 (located in the province of Kampong Thum) in the Tonle Sap basin in search of oil reserves.[752]

748 Platts (2012), op. cit.
749 Cambodian National Petroleum Authority (CNPA) (2011). Overlapping Claims Area. Accessed at http://cnpa.gov.kh/index.php?option=com_content&view=article&id=51&Itemid=126&limitstart=1; Xinhuanet.com (2012). Cambodian, Thai energy exports talk on oil-rich overlapping area. 27 July 2012. Accessed at http://news.xinhuanet.com/english/world/2012-07/27/c_131743635.htm.
750 J. Daly (2012), op. cit.
751 H. Vichit (2006). Oil and Gas Prospects in Cambodia: Overview of status of current exploration and future plans for oil and gas development and production. ASEAN Energy Business Forum 2006.
752 U.S. Geological Survey (USGS) (2012). The Mineral Industry of Cambodia. *2010 Minerals Yearbook.* May 2012.

EVOLUTION OF OIL INDUSTRY AND REGULATORY FRAMEWORK

The 1970s and the 1980s were turbulent years for Cambodia. Civil war in the early 1970s was followed by a takeover of the government by the communist Khmer Rouge regime in the late 1970s. In 1978 Vietnamese forces invaded Cambodia and the Khmer Rouge regime was overthrown, but guerrilla warfare continued throughout the 1980s. The Vietnamese forces withdrew only in 1989, and a peace agreement was signed in 1991.[753] Unsurprisingly, there was little in the way of oil exploration and production (E&P) activities in Cambodia during these years. Oil exploration began in earnest after the creation of the Cambodian National Petroleum Authority (CNPA) in 1998, and the oil reserves in Block A were discovered by Chevron in December 2004.[754]

Two major regulations underlie the governance of the oil industry in Cambodia. The Petroleum Regulations that were passed in 1991 put the Ministry of Industry (later to become the Ministry of Industry, Mines and Energy) in charge of petroleum and mandated the creation of a Petroleum Advisory Board consisting of representatives from a variety of government bodies, including the Ministry of Industry, the Ministry of Finance, the Ministry of Commerce, the Ministry of Interior, and the National Committee of Foreign Investment, among others.[755] Subsequently, in 1995, the Inter-Ministerial Technical Committee for Oil Exploration and Exploitation was created.[756]

Under the Petroleum Regulations, exploration blocks are to be awarded to companies on the basis of a bidding process. Companies are invited to bid via notices published in national and international newspapers, and have to submit sealed bids specifying a number of details including the work budget. The Ministry of Industry evaluates each bid on the basis of several criteria, including the competence

753 BBC (2012). Cambodia profile. 6 September 2012. Accessed at http://www.bbc.co.uk/news/world-asia-pacific-13006828.
754 World Bank (2006). Cambodia Energy Sector Strategy Review, op. cit.
755 Council of Ministers, State of Cambodia (1991). Petroleum Regulations. Accessed at http://www.cnpa.gov.kh/files/Regulations/petroleum_regulation_1991(E).PDF.
756 Cabinet of the Council of Ministers, Royal Government of Cambodia (1995). Sub-decree On the establishment of the Inter-Ministerial Technical Committee for oil exploration and exploitation. 3 March 1995. Accessed at http://www.cnpa.gov.kh/files/Regulations/subDecree_1995.pdf

and experience of the bidder, proposed expenditure during the exploration, and proposed allocation of net petroleum, and may also enter into negotiations with any qualified bidder. The Ministry then submits its recommendations to the Cambodian government which has the final say in deciding whether to sign a Petroleum Agreement. Normally a bidder cannot be awarded more than two exploration blocks.[757] Subsequently, in the 1995 sub-decree that established the Inter-Ministerial Committee for Oil Exploration and Exploitation, the Committee was given the responsibility of examining and evaluating bid proposals for petroleum exploration and exploitation.[758]

These Petroleum Agreements give companies the right to explore for petroleum as well as engage in production, so that there is no distinction between exploration permits and production permits. Each Petroleum Agreement allows exploration to be carried out for a maximum initial period of 4 years over an Exploration Block of not more than 7,500 square kilometers. The exploration period may be extended twice for periods of up to 2 years each, though at least 30% of the original contracted area must be relinquished at the end of the initial exploration period and 25% must be relinquished at the end of the first extension (excluding any Petroleum Area which has been marked for production).

As far as production goes (in case petroleum is discovered), the Petroleum Agreement essentially functions as a production-sharing contract. The time period granted for production is 30 years, with a 5 year extension possible. A royalty of at least 12.5% is charged on the gross value of the petroleum. The balance of the petroleum remaining after the deduction of the royalty and costs incurred by the contractor (or the "profit oil") is divided among the Cambodian government and the contractor. The contractor's share of profit oil is further subject to income tax at a rate of 25 to 50%.[759]

In 1998, King Sihanouk of Cambodia passed a Royal Decree that established the Cambodian National Petroleum Authority (CNPA) that is governed by a permanent board of Directors consisting of one chairman (or co-chairmen), one vice chairman and the Director General of CNPA, and is itself under the authority of the Prime

[757] Council of Ministers (1991). Petroleum Regulations, op. cit.
[758] Cabinet of the Council of Ministers (1995). Sub-decree, op. cit.
[759] Council of Ministers (1991). Petroleum Regulations, op. cit.

Minister.[760] Under the Royal Decree, CNPA is designated as the authority in charge of all petroleum operations, including both upstream and downstream operations, with the Ministry of Industry, Mines and Energy no longer playing any governing role in petroleum. Following the 1998 Royal Decree, the Cambodian government passed two amendments to the 1991 Petroleum Regulations in 1998 and 1999 respectively.[761] These amendments explicitly grant to CNPA all authority over petroleum previously granted to either the Ministry of Industry (later the Ministry of Industry, Mines and Energy) or the Inter-Ministerial Technical Committee for Oil Exploration and Exploitation.

The provisions of the 1991 Petroleum Regulations regarding exploration and production largely remain in place, such as the exploration period and area, the production period, and the production-sharing arrangement embodied in the Petroleum Agreement. However, the 1998 and 1999 amendments significantly modified the awarding process for exploration blocks. They specified that in addition to the standard bidding procedure (involving publicly announced invitations for bids and evaluation of the bids according to set criteria), the CNPA may establish alternative procedures for the issuing of bid invitations and the evaluation of proposals if "circumstances exist which warrant the adoption of an alternative procedure" (the amendments do not specify what these circumstances are).[762] The Production-Sharing Contract terms in the CNPA website are largely similar to those specified in the 1991 Petroleum Regulations, though they include additional provisions such as signature bonuses and production bonuses (negotiable) and cost recovery (negotiable) and set the profit oil split according to a sliding scale, the royalty at 12.5% and the income tax at 30%.[763]

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760 King of Cambodia (1998). Royal Decree on the Formation of the Cambodian National Petroleum Authority. 22 January 1998. Accessed at http://www.cnpa.gov.kh/files/Regulations/RoyalDecree_CNPA[1998].pdf.

761 Royal Government of Cambodia (1998). Decision on the Amendment of the Chapter 2 of the Petroleum Regulation 1991. 16th October 1998. Accessed at http://www.cnpa.gov.kh/files/Regulations/first_amendment(E)_16101998.PDF; Royal Government of Cambodia (1999). Decision on the Amendment of the Petroleum Regulation 1991. 19th March 1999. Accessed at http://www.cnpa.gov.kh/files/Regulations/Second_Amendment_(1999).PDF.

762 Royal Government of Cambodia (1998), op. cit.; Royal Government of Cambodia (1999), op. cit.

763 Cambodian National Petroleum Authority (2011). Legislation and Contract Terms- The Production Sharing Contract. Accessed at http://www.cnpa.gov.kh/index.php?option=com_content&view=article&id=48&Itemid=122&limitstart=1.

Currently the Cambodian government and CNPA plan to replace the 1991 Petroleum Regulations with a new legislative framework that would include a Petroleum Law, a sub-decree on implementation of the Petroleum Law, a Cambodian Petroleum Policy, provisions such as Local Content and Accounting Procedures, and an updated Model Petroleum Sharing Contract (PSC). CNPA expects these to be forwarded shortly to the Council of Ministers for approval, and to the National Assembly.[764]

While the CNPA is dominant in the governance of the oil industry, other ministries play a role in some specific functions. The Ministry of Economy and Finance is in charge of managing fuel imports, the fuel import tax and the excise tax, while the Ministry of Commerce issues licenses to fuel distributors.[765]

GOVERNANCE
TRANSPARENCY AND ACCOUNTABILITY

TRANSPARENCY

The website of the CNPA provides detailed information on the role of the CNPA, the laws and regulations pertaining to oil exploration and production, maps and seismic profiles of exploration blocks and information tailored towards investors. The full texts of the 1991 Petroleum Regulations, the 1995 Sub-Decree, the 1998 Royal Decree establishing the CNPA and the two amendments to the 1991 regulations can also be downloaded from the website.[766] The NGO Global Witness had in 2009 criticized the Cambodian government for not announcing the names of the companies to which it had awarded exploration blocks; however this appears to have been rectified with such information now available from the CNPA website.[767]

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[764] Cambodian National Petroleum Authority (2011). Legislation and Contract Terms. Accessed at http://www.cnpa.gov.kh/index.php?option=com_content&view=article&id=48&Itemid=122&showall=1.

[765] World Bank (2006). Cambodia Energy Sector Strategy Review, op. cit.

[766] The CNPA website can be accessed at http://www.cnpa.gov.kh/.

[767] In 2009 Global Witness reported that information on which companies were awarded contracts was not made publicly available- see Global Witness (2009). *Country for Sale: How Cambodia's elite has captured the country's extractive industries.* February 2009. This information is now available at the CNPA website http://www.cnpa.gov.kh/index.php?option=com_

Transparency is emphasized in the 1991 Petroleum Regulations in a number of ways. Before exploration blocks can be awarded to any contractors, the 1991 Regulations require that an invitation for bidding is issued and published in national and international newspapers. The 1991 Regulations also require that invitations for bids, the signing of petroleum agreements, relinquishment of areas by contractors and the issue of production permits to contracts all be published in the Cambodian Gazette.[768] Following the enactment of these regulations, an initial bidding round was carried out in 1991 that adhered to the above requirements.[769]

The amendments to the Petroleum Regulations in 1998 and 1999 have, however, significantly diminished the transparency of the allocation process for oil blocks. As described earlier, these amendments give CNPA the authority to establish alternative (and unspecified) procedures for allocating exploration blocks. While the amendments only allow for this authority to be exercised "where circumstances exist which warrant the adoption of an alternative procedure for the award of contracts", they make no mention of the kind of circumstances that would justify jettisoning public bidding.[770] In practice this has meant that open bidding has not been conducted at all since the initial 1991 bidding round, and there is no publicly available information on the process by which exploration blocks are issued by the CNPA.[771] In the past, the results of the allocation process were not announced either, but this appears to have changed with the CNPA website now containing information about which companies have been awarded exploration blocks, as discussed above.

However, details of the contracts, revenue-sharing arrangements and signature bonuses are confidential, as is commonly the case in extractive industries in South-east Asian countries. Information on revenue received from the petroleum agreements already awarded to different companies has not been made public, even though the 1991 Petroleum Regulations specify the payment of annual surface rental fees and a number of other fees.[772] Analysis by Global Witness based on a

content&view=article&id=51&Itemid=126.

768 Council of Ministers (1991). Petroleum Regulations, op. cit.

769 Global Witness (2009). *Country for Sale: How Cambodia's elite has captured the country's extractive industries,* op. cit.

770 Royal Government of Cambodia (1998). Decision on the Amendment of the Chapter 2 of the Petroleum Regulation 1991, op. cit.; Royal Government of Cambodia (1999). Decision on the Amendment of the Petroleum Regulation 1991, op. cit.

771 Global Witness (2009), op. cit.

772 Council of Ministers (1991). Petroleum Regulations, op. cit.

draft model Petroleum Agreement suggests that such revenue from the awarding of the six offshore oil blocks could amount to almost US$4.5 million in the first year of agreement alone, but how much revenue was actually received and how it was disbursed or spent has not yet been disclosed. A similar lack of transparency surrounds an even larger amount paid by companies to the CNPA as signature bonuses, which for just one company (Medco Energi) amounted to US$ 7.5 million.[773]

Thus, the overall level of transparency is not high. Membership of the Extractive Industries Transparency Initiative (EITI) would require that Cambodia make public details of the contracts it signs with different companies. The United Nations Development Program (UNDP) has further recommended that if and when Cambodia begins earning petroleum revenue, it should practice a high level of disclosure with respect to its petroleum operations. The UNDP has also suggested that Cambodia should set up a petroleum fund, but opines that such a fund will only be effective if operated on the principle of transparency, in particular by adopting measures such as quarterly reporting of revenues received, quarterly reporting of investment income earned by the fund, and quarterly reporting of the investments undertaken by the fund.[774]

ACCOUNTABILITY

Accountability in the governance of Cambodia's oil industry is very limited. The 1998 Royal Decree designated CNPA as the sole authority in charge of all petroleum operations, including both upstream and downstream operations. Following that, the 1998 and 1999 amendments to the 1991 Petroleum Regulations explicitly granted CNPA all authority over petroleum previously granted to either the Ministry of Industry (later the Ministry of Industry, Mines and Energy) or the Inter-Ministerial Technical Committee for Oil Exploration and Exploitation, reducing the accountability of the governance process. CNPA is not directly accountable to Cambodian citizens or the Cambodian Parliament: for instance, there is no parliamentary oversight of the allocation of exploration blocks.[775] Instead, CNPA is directly accountable only to the Prime Minister of Cambodia.[776]

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[773] Global Witness (2009), op. cit.

[774] United Nations Development Programme (UNDP) Cambodia (2006). Insights for Action: Review of Development Prospects for the Cambodian Oil and Gas Sectors. Discussion Paper No. 2.

[775] Global Witness (2009), op. cit.

[776] Cabinet of the Council of Ministers, Royal Government of Cambodia (1995). Sub-decree On the establishment of the Inter-Ministerial Technical Committee for oil exploration and exploitation, op. cit.

The internal governance structure of CNPA is also marked by limited accountability. CNPA is governed by a permanent board of Directors consisting of one chairman (or co-chairmen), one vice chairman and the Director General of CNPA.[777] Given that the actual chairman is also the Deputy Prime Minister, ultimately all employees report to the Cambodian Deputy Prime Minister, and through him, to the Prime Minister. The top-down structure is a considerable barrier to accountability.

CORRUPTION AND REGULATORY CAPTURE

Corruption and regulatory capture exist to a severe degree in Cambodia. In Transparency International's Corruption Perceptions Index 2011, Cambodia ranked 164th out of 182 countries, lower than all other ASEAN countries except Myanmar. Cambodia's index score of 2.1 is in the low range between 10 (indicating a country perceived to be very clean) and 0 (indicating a country perceived to be extremely corrupt).[778] According to the World Bank Worldwide Governance Indicators, Cambodia performs poorly on the criterion of control of corruption, which reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Cambodia scored only in the 13th percentile of all 215 countries ranked during 2011, as opposed to its 21st percentile ranking in 2000.[779] The generally high incidence of corruption is likely to both diminish the incentives for companies to invest in the Cambodian oil sector and reduce the benefits Cambodia can reap from oil exploration and production. To cite a specific dimension of corruption, bribe-taking is common in Cambodia, with 84% of the respondents to Transparency International's Global Corruption Barometer 2010-11 reportedly having paid a bribe to obtain services.[780] If bribe-taking becomes prevalent in the petroleum sector as well, it would increase the cost of carrying out

[777] Ibid.
[778] Transparency International (2011). Corruption Perceptions Index 2011. http://cpi.transparency.org/cpi2011/results/.
[779] World Bank (2012). World Governance Indicators. Accessed at http://info.worldbank.org/governance/wgi/index.asp.
[780] Transparency International (2012). *Global Corruption Barometer*. Accessed at http://gcb.transparency.org/gcb201011/in_detail/.

oil operations in Cambodia as well as diminish the revenues that accrue towards benefitting Cambodian citizens.

The incidence of corruption implies that the possibility of regulatory capture, or a divergence between the objectives of the decision-makers and the broader objectives of Cambodia as a whole, cannot be discounted. Regulatory capture risks are accentuated by conflicts of interest at the higher level of the governance of the Cambodian petroleum industry. For instance, Resourceful Petroleum, which has a 30% stake in offshore block B, is owned by an economic adviser to the Prime Minister of Cambodia.[781]

QUALITY OF REGULATORY FRAMEWORK:

GOVERNANCE AND REGULATORY PERFORMANCE

The quality of the overall regulatory framework and governance in Cambodia is not high. According to the World Bank Worldwide Governance Indicators, Cambodia does not perform too well on the criterion of government effectiveness (which reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies), scoring in the 26th percentile of all 215 countries ranked during 2011. It should be noted though that this is its highest percentile ranking in the 1996-2011 period, indicating some improvement over the period. On the criterion of regulatory quality, which reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development, Cambodia ranks somewhat better (but still well below average) in the 35th percentile; more worrying is the fact that Cambodia's ranking has declined from a peak 50th percentile ranking in 1996.[782] As such, the regulatory environment in Cambodia is not very conducive to business operations in general. For instance, in the World Bank's annual Ease of Doing Business assessment, Cambodia ranked 133rd out of 183 assessed economies in 2012; within South-east Asia, Lao PDR, the Philippines and Timor Leste ranked

781 Global Witness (2009), *op. cit.*
782 World Bank (2012). World Governance Indicators, *op. cit*.

lower.[783] The Ease of Doing Business assessment examines issues such as starting a business, enforcing contracts, and dealing with construction permits.

The oil sector is not immune from the general weaknesses in the governance and regulatory framework in Cambodia. In addition, though, the oil regulatory framework has some specific weaknesses. The 1991 Petroleum Regulations, for instance, are over 20 years old and outdated, especially in light of the creation of the CNPA in 1998, since the Petroleum Regulations were written with the Ministry of Industry (later the Ministry of Industry, Mines and Energy) in mind as the regulatory authority in charge of the petroleum sector was. After the creation of the CNPA, as noted before, amendments to the Petroleum Regulations explicitly granted to CNPA all authority over petroleum previously granted to the Ministry of Industry (later the Ministry of Industry, Mines and Energy). However, this can at best be described as a stopgap measure. The World Bank has noted that the regulatory framework for the petroleum sector is "essentially fragmented and incomplete" despite the existence of the Petroleum Regulations and proposed the establishment of a comprehensive "Petroleum Law" covering upstream, midstream and downstream activities for the sector.[784]

The Cambodian government has recognized the deficiency and (together with CNPA) plan to replace the 1991 Petroleum Regulations with a new legislative framework that would include a Petroleum Law, a sub-decree on implementation of the Petroleum Law, a Cambodian Petroleum Policy, provisions such as Local Content and Accounting Procedures, and an updated Model Petroleum Sharing Contract (PSC).[785] However it remains unclear when such a framework will be finalized and implemented.

REGULATORY CLARITY AND COHERENCE

Regulatory coherence in Cambodia is enhanced by the fact that the governance of the upstream oil sector is quite centralized. The CNPA is the main authority in charge of upstream oil exploration and production, and only the Prime Minister has oversight over CNPA's operations. While this leads to obvious deficiencies in

[783] For details of the methodology, please refer to http://www.doingbusiness.org/rankings. Note that among the South-east Asian countries, Myanmar is not included in the rankings.
[784] World Bank (2006). Cambodia Energy Sector Strategy Review, op. cit.
[785] Cambodian National Petroleum Authority (2011). Legislation and Contract Terms, op. cit.

accountability, as described before, it also means that oil companies have to deal with a relatively small set of stakeholders, which somewhat clarifies the regulatory process.

However there is much less coherence in the regulation of the midstream and downstream sectors, and in the overall regulatory framework for the oil sector. Under the 1998 Royal Decree, CNPA is designated as the authority in charge of all petroleum operations, including both upstream and downstream operations. At the same time, though, the Ministry of Economy and Finance is in charge of managing fuel imports, the fuel import tax and the excise tax, while the Ministry of Commerce issues licenses to fuel distributors. As the World Bank has pointed out, the roles and responsibilities of these different authorities are not clearly delineated from one another and there is significant potential for regulatory overlap.[786] In addition, there are overlaps of roles within the CNPA. The CNPA chairman is also the Cambodian Deputy Prime Minister, which leads to problems in oversight and role overlap given that it is the role of the Prime Minister's Office to oversee the CNPA.

REGULATORY UNCERTAINTY

To an extent regulatory uncertainty in Cambodia is mitigated by the fact that the governance of the oil sector is quite centralized. There are though a number of other factors that create uncertainty. The absence of a comprehensive legislative framework (or a Petroleum Law) means that the legal basis for oil operations is the Petroleum Agreement, the terms of which can vary from case to case (unlike the terms set in a Petroleum Law).[787] This creates uncertainties for investors into the oil sector.

There is considerable uncertainty as to when a new legislative framework for the oil sector in Cambodia will be established. As far back as 1995, Cambodia began planning the development of a new Petroleum Law, at that time through the Inter-Ministerial Technical Committee for oil exploration and exploitation.[788] Efforts by foreign donors such as the Asian Development Bank to develop such a legislative

[786] World Bank (2006). Cambodia Energy Sector Strategy Review, op. cit.
[787] Global Witness (2009), op. cit.
[788] Cabinet of the Council of Ministers, Royal Government of Cambodia (1995). Sub-decree On the establishment of the Inter-Ministerial Technical Committee for oil exploration and exploitation, op. cit.

framework (that can be dated back to 2000) did not succeed.[789] More recently, in December 2006, Wikborg Rein, a law firm in Norway, was appointed by the CNPA and the Norwegian Petroleum Directorate to develop a legislative framework for Cambodia's petroleum industry (in cooperation with the Norwegian Agency for Development Cooperation). A proposal for such a framework was presented to members of the Cambodian National Assembly in 2009.[790]

CNPA expects the new framework new legislative framework that would include a Petroleum Law, a sub-decree on implementation of the Petroleum Law, a Cambodian Petroleum Policy, provisions such as Local Content and Accounting Procedures, and an updated Model Petroleum Sharing Contract (PSC) to be forwarded shortly to the Council of Ministers for approval, and to the National Assembly.[791] However, given the historical context, it is difficult to be optimistic about the rapid implementation of such legislation.

Regulatory lags of a different kind have also impeded the development of the offshore Block A. Though the Chevron-led consortium applied for a production permit back in September 2010, the government has yet to reach on approving or rejecting the permit, which has pushed back the final investment decision on the project. This in turn has meant that earlier goals set by the Cambodian government to begin production by mid-December 2012 have been pushed back indefinitely.

ADMINISTRATIVE AND TECHNICAL CAPACITY

As the World Bank has pointed out, there can be significant administrative and technical capacity constraints in the ability of governments to directly regulate and govern the petroleum industry. Because the government does not itself conduct oil exploration and production, it is at an informational disadvantage to the private players it is overseeing and moreover typically lacks the technical expertise and knowhow.[792] Within the CNPA, lack of specialized staff has been an issue.[793] This is particularly so as there are very limited opportunities for getting educated in

789 Global Witness (2009), op. cit.
790 B. Gunnerud (2009). Establishing a Legal Framework for the Petroleum Industry. Presented to Members of the Cambodian National Assembly, 20 November 2009. Accessed at http://www.cnpa.gov.kh/files/Establishing_Legal_Framework-Borre_Gunnerud.pdf.
791 Cambodian National Petroleum Authority (2011). Legislation and Contract Terms, op. cit.
792 S. Tordo, B. S. Tracy and N. Arfaa (2011). National Oil Companies and Value Creation. *World Bank Working Paper No. 218.* Washington D.C.: The World Bank.
793 Global Witness (2009), op. cit.

engineering or geology in Cambodian universities.[794] The CNPA upstream staff has benefitted from donor-funded capacity training programs, but the top-down governance structure of the CNPA has meant that they are often unable to fully contribute.[795]

The informational disadvantage that developing country governments typically face relative to private players makes contract negotiations particularly tricky to handle, especially since international exploration companies typically rely on large legal teams and outside counsel when negotiating production-sharing contracts. In the view of the UNDP, though, the CNPA has underutilized its legal advisors, preferred to consult them as resource persons rather than allowing legal counsel to be the primary negotiator. Switching to the latter strategy and relying more on legal counsel would create additional negotiating room for the CNPA, and may be particularly valuable when Cambodia negotiates the Overlapping Claims Area and any Joint Development Agreements with Thailand.[796] Finally, the capacity of the Cambodian government and regulatory bodies to adequately handle future revenues from the oil sector remains in question: the Cambodian present annual government budget is small and future revenues could well amount to multiples of the present budget.[797]

ECONOMIC EFFICIENCY AND EQUITY

REVENUE-SHARING ARRANGEMENTS

Revenue-sharing in the Cambodian oil industry is by way of production-sharing contracts (PSCs), taxes and royalties, and is governed by Petroleum Agreements signed between CNPA and contracting companies. Table 8.3 illustrates how production is shared in the model production-sharing contract for oil operations in Cambodia. A royalty of 12.5% on gross production is charged, while the cost recovery limit is set at 90%, meaning that the oil produced will be used to cover costs amounting to at most 90% of post-royalty production (i.e. 78.75% of gross production). The remainder of the oil produced is profit oil to be shared between

794 UNDP Cambodia (2006), op. cit.
795 Global Witness (2009), op. cit.
796 UNDP Cambodia (2006), op. cit.
797 *Ibid*.

CNPA and the contractor on a sliding scale that is 58-42 in favor of the contractor at lower levels of production and 58-42 in favor of CNPA at higher levels of production.

Table 8.3 Model production-sharing contract for oil in Cambodia

State Royalties (% of gross production)	12.5%
Cost Oil (% of gross production)	≤78.75%
Profit Oil (min) (% of gross production)	≥8.75%
• CNPA's share of profit gas • Contractor's share of profit gas	*42-58%* *52-48%*
Estimated share received by Cambodia*	**≥62%**

* Assuming crude oil prices are at least $65/barrel and a fixed cost of $10 per barrel, and including revenue from corporate taxes.

Source: UNDP Cambodia (2006). Insights for Action: Review of Development Prospects for the Cambodian Oil and Gas Sectors. Discussion Paper No. 2.

The UNDP has estimated that at oil prices of $65/barrel or more, such a model production-sharing contract will allow Cambodia to capture at least 62% of the oil revenue per barrel. Within the region, only Indonesian PSCs result in a higher share accruing to the government, while PSCs implemented in Vietnam, Myanmar, and the Philippines all result in a lower share accruing to the government.[798]

This, however, is in part fortuitous: the model PSC was first negotiated when oil prices were much lower than they are now. In many respects, the model PSC in Cambodia is skewed in favor of the investing company. The 90% cost recovery rate is very generous by regional standards, with most other countries in Southeast Asia opting for cost recovery at between 40-70%. In addition, the profit oil split is quite generous to contractors, often allowing them to capture the bigger share of

[798] UNDP Cambodia (2006), op. cit.

profit oil, whereas all other countries in the region capture the bulk of the profit oil. The implication of giving investors a guaranteed recovery of at least 90% of their operating costs is that the guaranteed revenue for the Cambodian government itself is very low at only around 16% of gross production.[799] This means that Cambodian petroleum revenues are highly sensitive to petroleum prices and especially to operating costs, in contrast to other countries in the region.[800]

Thus in the tradeoff between maximizing rent from petroleum revenue and encouraging increased investment, Cambodia has chosen to emphasize the latter. The UNDP has, however, recommended that Cambodia revise its model PSCs to shift the scale towards the former policy objective, in particular by adopting a stricter cost recovery limit.[801] Such a recommendation may well be justified given the context of Cambodia's petroleum industry. For one, virtually all the companies investing in the oil sector are foreign companies, meaning that the share of profit oil they capture is unlikely to flow back into the Cambodian economy. In addition, most offshore oil blocks have already been handed out to companies, and the total recoverable oil reserves appear to be small; hence, maximizing rent capture takes precedence over increasing the level of investment in the sector, the latter being naturally capped by the small potential size of the sector. Reducing the cost recovery would also increase incentives for the contractor to enhance productivity and cut down on costs.

One positive feature of the model PSC is the sliding scale used for splitting the profit oil, with CNPA capturing a greater share of profit oil when production is at higher levels. Higher production is likely to imply greater profit oil, so the sliding scale mechanism means that the production-sharing scheme is progressive. Progressive profit-sharing has been recommended by the IMF in the past since it allows governments to optimize its response to the aforementioned rent-investment tradeoff. The sliding scheme allows the Cambodian government to capture the largest portion of the windfall from increased profitability while continuing to provide sufficient profits for contractors to compensate for the opportunity cost of capital invested.[802]

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799 Authors' calculations based on Table 6.2.1..

800 UNDP Cambodia (2006), op. cit.

801 Ibid.

802 For the IMF recommendation, made in the context of the fiscal regime governing the petroleum industry in the Philippines, see E. M. Sunley, S. Craner, R. Krever and O. Luca (2012). Reform of the Fiscal Regimes for Mining and Petroleum. International Monetary Fund Country Report No. 12/219, August.

AWARDING OF CONTRACTS

Under the 1991 Petroleum Regulations, exploration blocks are to be awarded to companies on the basis of a bidding process, with companies invited to bid via public notices and each bid evaluated on the basis of several criteria, including the competence and experience of the bidder, proposed expenditure during the exploration, and proposed allocation of net petroleum. Such a procedure effectively amounts to a 'beauty contest", and while there are transparency issues associated with these as opposed to auctions, they also give governments the flexibility to use a multitude of criteria in deciding who to allocate the contracts to.[803]

However, as described earlier, the 1998 and 1999 amendments to the Petroleum Regulations give CNPA the authority to establish alternative (and unspecified) procedures for allocating exploration blocks. In practice this has meant that open bidding has not been conducted at all since the initial 1991 bidding round. The transparency issues with such a procedure have already been highlighted, but this process has some shortcomings from a purely economic perspective as well. Without open bidding, not all the companies best qualified to undertake oil operations may be well-informed enough to risk entering the sector. More importantly, with an ad-hoc procedure for block allocation, there is no guarantee at all that the best qualified companies or the companies with the most competitive bids will be selected to explore and produce oil. The NGO Global Witness has noted, for instance, that some of the companies that have been allocated exploration blocks are relatively inexperienced.[804]

EXTERNALITIES

The production of natural gas generates environmental and social externalities i.e. costs that, in the absence of intervention, would not be taken into account by the contractors in their decision-making process. The existence of negative externalities in itself is not a reason to reject the development of oil resources. An optimal social outcome instead requires that all such costs be taken into account in deciding whether to pursue resource extraction and how.

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[803] P. Cramton (2009). How Best to Auction Natural Resources. *Handbook of Oil, Gas And Mineral Taxation*. Ed. Philip Daniel, Brenton Goldsworthy, Michael Keen, and Charles McPherson. Washington, DC: International Monetary Fund, 2009; A. Prat and T. Valletti (2001). Spectrum Auctions Versus Beauty Contests: Costs and Benefits, *Rivista di Politica Economica*, vol. 91, issue 4: 65-114.

[804] Global Witness (2009), *op. cit.*

In this regard the absence of a Petroleum Law is problematic since the 1991 Petroleum Regulations do not specify what environmental guidelines oil projects should follow. The CNPA has, however, stated that environmental issues are given emphasis in project development and environmental impact assessment (EIA) is required for oil and gas operations. The EIA is conducted under the auspices of the CNPA, but the authority in charge of reviewing projects and approving an Environmental Permit (that must be obtained before a project can commence) is the Ministry of Environment (MoE).[805]

Oil developments in the Tonle Sap Basin may well prove to be a litmus test for how effective the environmental framework for oil and gas in Cambodia actually is. The Tonle Sap Lake is the largest freshwater lake in Southeast Asia.[806] The lake is a designated UNESCO Biosphere Reserve and has been nominated for World Heritage status. Given the fragility of the eco-system, and recent deterioration in the eco-system manifested in reduced soil and water quality and decreasing fishing stocks, the prospect of future oil exploration in the area has led to concerns about the environmental impacts.[807] How such impacts will be assessed and handled, and whether consultations with local communities are undertaken and incorporated into decision-making, could determine how effective environmental governance of Cambodian oil is.

[805] CNPA (2011). Environmental Protection in Oil and Gas Operations. http://www.cnpa.gov.kh/index.php?option=com_content&view=article&id=77&Itemid=131&showall=1.
[806] USGS (2010), *op. cit*.
[807] Global Witness (2009), *op. cit*.

7.1 OIL IN CAMBODIA

Key Findings

- Cambodia does not produce any oil and does not have any refining facilities, and thus imports all commercial fuels in the form of LPG, gasoline, fuel oil and other petroleum products. Moderate offshore and onshore oil reserves do exist but oil production is not expected to commence before at least mid-2013.
- The regulatory structure is highly centralized, with the Cambodian National Petroleum Authority (CNPA) designated as the authority in charge of all petroleum operations. The 1991 Petroleum Regulations (amended subsequently in 1998 and 1999) underlie the governance of the oil industry in Cambodia.

Transparency and accountability

- The overall level of transparency is not high. Details of the contracts, revenue-sharing arrangements and signature bonuses are not disclosed, and revenue transparency is largely absent. However, information such as the relevant laws and regulations, maps and seismic profiles of exploration blocks and information tailored towards investors is available.
- Accountability in the governance of Cambodia's oil industry is very limited, both due to the fact that the CNPA is directly accountable only to the Prime Minister and because of the centralized internal governance structure.
- Corruption exists to a very severe degree in Cambodia, which ranked 180th out of 182 countries in Transparency International's Corruption Perceptions Index 2011. Regulatory capture risks are accentuated by conflicts of interest at the higher level of the governance of the oil sector.

Quality of the regulatory framework

- The quality of the overall regulatory framework and governance in Myanmar is not high and not conducive to business operations. The 1991 Petroleum Regulations, for instance, are over 20 years old and outdated, especially in light of the creation of the CNPA in 1998. However, the Cambodian government has recognized the deficiency and (together

with CNPA) plans to replace the 1991 Petroleum Regulations with a new legislative framework.

- Regulatory coherence in Cambodia is enhanced by the fact that the governance of the upstream oil sector is quite centralized. However there is much less coherence in the regulation of the midstream and downstream sectors, and in the overall regulatory framework for the oil sector, due to overlaps of roles and responsibilities.
- There is considerable uncertainty as to when a new legislative framework for the oil sector in Cambodia will be established, increasing risks for investors. Significant delays in the process for approval of production permits further increases uncertainty.
- There are legal and technical capacity constraints in the ability of the CNPA to directly regulate and govern the petroleum industry.

Economic efficiency considerations

- The model production-sharing contract will allow Cambodia to capture on average at least 62% of the oil revenue per barrel, which compares favorably with the rest of the region. Nevertheless in many respects, the model PSC in Cambodia is skewed in favor of the investing company and the guaranteed revenue for the government is only 16% of gross production.
- The 1998 and 1999 amendments to the Petroleum Regulations have meant that open bidding has not been conducted at all since the initial 1991 bidding round. This leads to a lack of transparency and the awarding process fails to ensure that the best qualified companies will be selected to explore and produce oil.

Recommendations

- Cambodia should practice increased transparency in its governance of the oil industry, and in particular needs to emphasize transparency with respect to how oil revenues are obtained, managed and spent.
- Increased parliamentary oversight and the use of public consultation procedures are recommended to increase accountability and limit the scope for corruption and regulatory capture.

- Cambodia should accelerate the process for adopting and implementing of the new legislative framework to replace the 1991 Petroleum Regulations in order to increase regulatory clarity and certainty.
- Given the context of limited oil resources, Cambodia should consider modifying the production-sharing contracts it awards so as to capture a greater share of the oil revenues and reduce the exposure to oil price volatility, for instance by reducing the cost recovery limit and increasing the royalty rate.
- It is recommended that Cambodia return back to an open bidding process in the awarding of blocks so as to increase transparency and allow blocks to be awarded to companies best able to explore and produce oil.

Conclusion & Recommendations

Conclusion & Recommendations

Scoping Study **Governance of Extractive Industries in Southeast Asia**

CONCLUSION & RECOMMENDATIONS

8.1 INDONESIA has sought to improve the governance of her extractive industries via the formulation of new regulations. There has been an emphasis on increasing transparency in the regulatory process, obtaining input from industry stakeholders, and encouraging investment in the sector. Indonesia has also played an important role in promoting the Extractive Industries Transparency Initiative (EITI) in the region striving to receive certification in a couple of years. However, the country has a long way to go before their governance structures and regulatory processes match up to international best practices.

Indonesia has begun a program of resource nationalism that will hinder the development of its extractive industry, where foreign investment is viewed with much suspicion by the government. The demand for coal in the region is booming and will continue to do so in the next decade as Chinese and Indian demand grows rapidly. In the absence of these investments, it is unlikely that Indonesia will reap the benefits of this uptrend in coal demand losing out to competitors in Australia and South Africa.

The regulations in Indonesia need to be improved ensuring that ambiguously-worded laws do not encourage corrupt practices on the part of companies or the regulators. Indonesia suffers from a high degree of uncertainty concerning the administration, interpretation, and enforcement of existing regulations. This uncertainty can reduce investment appetite in the sector, contrary to what policymakers at the helm seek to encourage. Also, given the overlapping jurisdictions of the myriad agencies that are part of the regulatory formulation and administration process, systems promoting alignment of policies need to be instituted. In the absence of this, the desired outcome of the policy-makers will be far from achieved as in evidence from these countries to date.

Indonesia has sought to decentralize government raising the self-governance by provincial and local governments. While it might be good to get local communities involved in governing themselves, it has proved to be the bane of good governance of the extractive industries. Regional governments have not yet developed the institutional capacity to administer their new responsibilities and lack accountability for their actions. Also, the lack of coordination amongst federal and

local governments results in regulations that conflict in their objectives and result in a duplication of effort. Furthermore, decentralized governance has resulted in increased opportunities for regulatory capture as transparency and accountability are compromised.

Indonesia has established a system whereby stakeholders are required to play an active role in the regulatory process. However, there are concerns regarding the extent to which the public consultation process affects policy formulation.

Indonesia needs to raise the transparency with which regulations governing the extractive industry are formulated. This will ensure that the variety of inputs received from stakeholders are able to identify the potential negative externalities generated via proposed regulations prior to their implementation however equitable they might appear in principal. Staff involved in the regulatory process need to be adequately trained to ensure technical competence and compensated well enough to lower the possibility of being incentivized to game the system.

An institution that coordinates the regulations that affect the extractive industry should be set up. It should consist of technocrats from the energy, public finance, and planning ministries to ensure that the regulations are statically and dynamically efficient. There is also a need for very clear guidelines as to the extent of the local government's regulatory authority relative to the federal government. And finally, regulations need to be clear and, once in place, adhered to. The unevenness with which regulations are imposed will affect investment in the sector which is much required if Indonesia is to benefit from increased demand for her coal output.

Indonesia needs to regularly revisit her regulatory policies to ensure that they are up-to-date and align with the country's developmental needs. The environmental impacts of mining practices in the coal and copper industry, which generates several negative environmental externalities, need to be taken into consideration. Indonesia might consider instituting environmental impact assessments that are adjudicated by independent agencies to ensure that societal welfare is enhanced by coal and copper mining activity.

8.2 MALAYSIA, has a relatively decentralized gold mining regulatory regime. The states own all mineral resources and charge royalties on mineral extraction, with the federal government earning revenue from income tax levied on company earnings from gold mining. In Malaysia, governance of the mining industry is characterized

by decentralization, which enhances accountability. Provisions for direct public participation and consultation are, however, weak or non-existent, limiting accountability. However, the governance of natural gas is relatively centralized, and the national oil company, PETRONAS, has ownership and exclusive exploration and exploitation rights over all onshore and offshore petroleum resources.

Malaysia ranks 22nd among 41 countries (or in the 2nd tier) whose extractive industries have been evaluated by the Revenue Watch Institute on the criterion of transparency. Malaysia scores particularly well on the criterion "natural resource funds", which captures transparency with respect to the National Trust Fund, and transparency with respect to how much revenue accrues from PETRONAS to the government has been increasing. There is however much less transparency with respect to how the government spends the revenue.

Accountability in the governance of Malaysia's natural gas sector is very limited, since PETRONAS is not directly accountable to Malaysian citizens or the Malaysian Parliament and PETRONAS is both the enforcer of the rules governing the market as well as a participant bound by the rules. PETRONAS has increased its anti-corruption efforts in recent times and become more transparent with respect to such efforts. The Malaysian governance structure for the natural gas industry lends itself to a risk of regulatory capture, but the empirical evidence generally suggests that regulatory capture has not occurred.

Malaysia federal laws and regulations on gold mining appear to be fairly clear and coherent, and the use of standardized State Mineral Enactments has led to consistency of regulations across states as well. The revenue-sharing arrangement in Malaysia performs has its shortcomings. The flexible royalty regime benefits the State government by allowing it to extract the maximum rent possible, although it can increase investor uncertainty. A shortcoming is that the royalty regime specified by the State Mineral Enactments is non-progressive, meaning that the royalty rate is the same for highly profitable and less profitable projects. Because state and federal revenue are clearly distinguished at the outset, the question of equitable distribution of mining revenues between the federal government and the state governments is less of an issue. Malaysia has implemented measures to encourage investment in the mining sector which have been effective in increasing investment in the gold mining sector as well as gold production.

There is evidence that the negative externalities of gold mining are significant. While environment impact assessments are carried out to attempt to ensure that such costs are taken into account in decision-making, their practical effectiveness is questionable. A key shortcoming is the lack of public participation and consultation in such processes.

Malaysia also has had a fairly stable set of laws and regulations governing the mining industry, and frequent changes to regulations are uncommon. However alignment between the federal government and state governments is a challenge. In general, Malaysia performs relatively well with respect to the quality of governance and the regulatory framework.

Internationally, PETRONAS has a good reputation for governance due to factors such as competent management, close alignment of the objectives of the company, the government and the economy, and its technical capacity. Federal laws and regulations on natural gas extraction appear to be fairly clear and coherent, but the absence of a distinct regulator has meant that many of the relevant procedures (e.g. the process for production-sharing) are not encoded in law, contributing to a lack of clarity as to how the unregulated aspects of natural gas exploration and production are governed. Malaysia provides a favorable business environment for companies with low levels of regulatory uncertainty, but this may sometimes entail a lack of regulatory flexibility.

Malaysia utilizes 'production sharing contracts' and the revenue-sharing arrangements perform fairly well from the perspective of maximizing rent extraction from natural gas exploration and production, without noticeably diminishing incentives for investment in the sector. Malaysia splits profits between PETRONAS and a contractor at 50-50 or 70-30 (40-60 or 60-40 in the case of deep water drilling) depending on the volume of production. The cost recovery limit is sober at 40-60% range in Malaysia.

Malaysian environmental assessment procedures are strong and good environmental practices are followed, though, the domestic revenue-sharing arrangement is by design skewed in favor of the federal or central government at the expense of states/provinces.

The governance process in Malaysia would benefit from increased transparency, in particular with regard to how the sizeable revenue from natural gas and gold production is managed and spent by the government. Provisions for direct public participation and consultation in the governance should be improved, both to enhance accountability and to strengthen the environmental impact assessment process. Coordination issues between the federal and state governments could be addressed by setting up a consolidated governance regime applicable for the entire country, which can continue to retain some of the decentralized features of the current regime (e.g. state governments having the greatest say over policies implemented in their own states). A progressive royalty regime should be adopted to increase state rents from gold mining, and while a flexible royalty rate has some benefits, some guidelines limiting the extent to which they can be varied would be useful in order to address investor uncertainty. Finally, instead of specifying maximum areas for exploration and not production, State Mineral Enactments should specify area limitations for the production phase and relax the limitations on area for the exploration phase (where ECONOMICS OF SCALE are especially important).

In respect to natural gas governance, a regulatory body that functions independently from PETRONAS should be set up and some of PETRONAS's regulatory and licensing powers should be transferred to this body in order to overcome conflicts of interest and enhance accountability. This should be complemented by introducing provisions for direct public participation and consultation in the governance should be improved in order to enhance accountability particularly with regards to management of natural gas revenue. In addition, the Petroleum Regulations should be modified to include guidelines on many of the relevant procedures (e.g. the process for production-sharing) that are currently not encoded in law. This will increase regulatory clarity and reduce uncertainty. A more equitable revenue-sharing scheme between the federal and state governments is recommended, which can be done by increasing the royalty rate or specifying a share of the profit gas to accrue directly to the state governments. Finally, the federal government should reconsider its policy of using gas revenues to support fuel subsidies, which are distortionary and have resulted in a fiscal deficit.

Malaysia is one of the few examples of resource rich developing countries that have managed to avoid the "resource curse" and instead utilized its resources to advance economic development. Malaysia's strategies such as policies encouraging a high savings rate, macroeconomic and revenue management policies to counter the Dutch disease, and economic diversification policies have enabled it to avoid the resource curse. However oil and gas revenues have also been used to support fuel subsidies, which are distortionary and have resulted in a significant fiscal deficit. Nonetheless, Malaysia's macroeconomic and revenue management strategies can, on the whole, provide a model for how to avoid the "resource curse".

8.3 The Philippines has a relatively decentralized governance regime of natural gas, with several key stakeholders though the Department of Energy is designated as the lead agency. The regulatory process of natural gas in the Philippines is characterized by a certain degree of accountability, with multiple stakeholders involved and a well-developed NGO movement existing in the Philippines. Accountability is a central feature of the environmental impact study (EIS) for natural gas projects, with public participation playing a major role in the EIS process. Accountability is more limited, however, when it comes to revenue sharing. The governance of gold, however, is relatively centralized, with mining companies signing production-sharing agreements with the central government.

Corruption and regulatory capture are general problems affecting government institutions in the Philippines, and institutions involved in natural gas and gold governance have not been immune from this either. Given that the Department of Energy is the main agency in charge of the Philippine natural gas industry, there exists a certain amount of regulatory coherence since regulatory overlap is cut down and conflicts between different bureaus are avoided. Lack of clarity is not generally an issue with the regulatory regime in the Philippines, but poorly defined property rights and territorial jurisdiction have sometimes been problematic. Regulatory certainty has been enhanced by broad stabilization provision in the model service contract specified in the 1972 Petroleum Exploration and Development Act as well as by the fact that the laws and regulations have not been subject to frequent changes. However this has constrained the flexibility of the government to adjust and tweak regulations. Delays and lags in policy formulation and implementation are problematic as well.

In the Philippines, although the decision-making authority over gold is concentrated in the central government, accountability of a kind still exists, since groups excluded from the formal mining regulatory regime have been able to challenge the regime from the outside through the Local Government Code, civil society and the courts, and Indigenous Peoples' Right Act (IPRA) of 1997. The gold regulatory regime in the Philippines often suffers from a lack of clarity given that at least twenty statutes and regulations govern various aspects of mining and property rights are often poorly defined. Regulatory certainty has been cited by mining companies as a strong deterrent to investing in the Philippines, with frequent delays and lags in policy formulation and implementation a major source of uncertainty. There is significant overlap of jurisdiction between the various agencies and levels of government in mining, and regulations governing gold mining often overlap and contradict with one other.

The revenue-sharing arrangements in Philippine gold mining are skewed towards mining companies, with mining companies capturing 29% of total revenue as opposed to around 25% of revenue captured by the central government, local government, workers and managers, and indigenous people and local communities. This is sub-optimal from the point of view of maximizing state rents from mining. Moreover, despite the numerous incentives for increased investment in the gold mining sector, the direct contribution of gold mining (and mining in general) to the economy has been limited, and spillover benefits are comparatively low. There are also significant and legitimate concerns about the domestic sharing of benefits from gold mining, with few benefits accruing to local governments and indigenous communities affected by mining operations.

In the Philippines, the governance process would benefit from increased transparency; in particular, greater transparency could play a role in reducing local government and indigenous community suspicions regarding gold mining projects. A more devolved decision-making process for mining (such as with the Multi-Sectorial Mineral Council in the Mineral Resources Act proposed in 2009) would lead to accountability while avoiding the inefficiencies of the current regulatory structure, where the conflicts between the central government and other stakeholders impede regulatory effectiveness and create regulatory uncertainty. The process for the adoption of a new legislative framework to replace the 1995 Act needs

to be accelerated, since the current moratorium on the granting of new mineral agreements has led to significantly greater investor uncertainty. The revenue-sharing arrangements in the Philippines should be modified so that the government captures a greater share of the mining revenue, as the present structure results in little contribution made by gold mining to the economy either directly or indirectly. Finally, equity in revenue-sharing needs to be emphasized to a much greater degree, and the share of benefits accruing to local governments and communities affected by mining should be increased. This has to be done both by increasing the revenue share accruing to them and by strengthening the procedures in place to ensure that such negative externalities are taken into account in decision-making.

In the Philippines, a fixed share of net proceeds from natural gas accrues to the government, constraining the ability of the government to increase rent when profitability is high. The natural gas cost recovery limit of 70% in the Philippines is likely to be too generous. Environmental assessment procedures are strong and good environmental practices are followed, and this is enhanced by having very active public participation and stakeholder engagement in the process. Because of imperfect implementation of existing laws the domestic revenue-sharing arrangement in natural gas is skewed in favor of the federal or central government at the expense of states/provinces.

To increase transparency, the Malampaya Fund should be included in the National Budget and expenditures from the Fund should be recorded separately. Accountability should also be increased by introducing procedures for parliamentary oversight as to how the funds are spent. With regards to the stability assurance in the service contracts, while fiscal stability performs a useful function by reducing uncertainty in investor returns, the justification for extending the stability provision to all laws and regulations (even if they do not affect the fiscal regime) is by no means clear. The stability assurance should thus be narrowed and limited only to fiscal laws and a time limit of between five to ten years should be imposed for the stability assurance to improve the ability of the government to adjust regulations in response to changing circumstances. A progressive fiscal regime should be adopted for the service contracts, whereby increasing profitability is accompanied by an increasing government share of net proceeds, allowing the government to capture the largest portion of the windfall from increased productivity. The cost recovery

limit should be reduced from 70% so as to increase incentives for companies to limit operating costs, while the ineffective FPIA should be scrapped. Finally, while equity in revenue-sharing is emphasized in regulations such as the Local Government Code, equitable revenue-sharing should be implemented in practice as well and the dispute over whether 25% or 40% of the Malampaya revenue should accrue to Palawan province should be rapidly resolved in accordance with the laws.

8.4 MYANMAR has looked to improve on the regulatory regimes that govern their country's extractive industries. Myanmar has also looking to revamp its minerals laws holding conferences in the middle of the year to advertise its mineral industry to the rest of the world. Whilst there have been some positive developments with regard to improving transparency of governance and including stakeholders in consultations on proposed changes to regulations, much more needs to be done.

Regulations in Myanmar require clarity such that there is little room for misinterpretation. Such amendments will reduce the possibility of regulatory capture. There is also the perception that the regulatory environment is quite uncertain especially with regard to the administration, interpretation, and enforcement. Uncertainty often has the effect of reducing foreign investors' propensity to invest in the country going precisely against what the country's leadership hopes to achieve.

Myanmar has a severe lack of transparency and accountability with respect to oil and copper governance. Details of production-sharing contracts reached with companies are confidential and revenue transparency is very limited. It is recommended that Myanmar practice increased transparency in the governance of the oil and copper industries, and in particular emphasize transparency with respect to how revenues are obtained, managed and spent. Myanmar's centralized governance structures and lack of effective oversight have led to very limited accountability. Corruption is a particularly severe problem in Myanmar. Regulatory capture risks exist both due to corruption and due to conflicts of interest at the higher levels of the oil governance structure. Oil and copper governance is still relatively primitive in Myanmar with the oil regulations so outdated that it is highly unlikely that they can be implemented. Therefore Myanmar would benefit from the adoption and implementation of comprehensive and updated petroleum legislation.

In Myanmar, the technique for recording petroleum revenues in the national budget ensures that the vast majority of revenues is not included in the official

budget. The model production-sharing contracts (PSC) in Myanmar allows the government to capture approximately 60% of the oil revenue. In Myanmar, the PSC is geared towards maximizing the rent accruing to the government through features such as progressive profit-sharing and limited cost recovery.

Myanmar should also practice increased transparency in its governance of the oil industry, and in particular needs to emphasize transparency with respect to how oil revenues are obtained, managed and spent. Increased parliamentary oversight and the use of public consultation procedures are recommended to increase accountability and assuage concerns about equitable sharing of the benefits of oil production. A comprehensive and updated legislative package is urgently needed to improve the quality of the regulatory framework and increase regulatory clarity and certainty.

Myanmar has recently been seen to encourage industry viewpoints on proposed mining legislation. However, it is quite uncertain as to how much weight these opinions will be given. Myanmar's mining law and its annexes are extremely short on standards of good mining practice; procedures to ensure their implementation; or avenues for any public or individual recourse should practices fail.

Regulations governing the extractive industry in Myanmar need to be amended via a more transparent process taking into account the different viewpoints of stakeholders. This will ensure that potential negative externalities on account of poorly thought through regulations will be apprehended prior to the policy being instituted. Staff involved in the regulatory process need to be adequately trained to ensure technical competence and compensated well enough to lower the possibility of being incentivized to game the system.

An institution that coordinates the regulations that affect the extractive industry should be set up. It should consist of technocrats from the energy, public finance, and planning ministries to ensure that the regulations are statically and dynamically efficient. There is also a need for very clear guidelines as to the extent of the local government's regulatory authority relative to the federal government. Regulations need to be clear and, once in place, adhered to. The unevenness with which regulations are imposed will affect investment in the sector and needs to be carefully looked into.

Myanmar needs to regularly revisit her regulatory policies to ensure that they are up-to-date and align with the country's developmental needs. The environmental impacts of mining practices in the copper industry, which generates several negative environmental externalities, need to be taken into consideration. Myanmar might consider instituting environmental impact assessments that are adjudicated by independent agencies to ensure that societal welfare is enhanced by copper mining activity. Finally, given that considerable unexplored or partially explored petroleum resources still exist, Myanmar should consider increasing the revenue share of the contractor companies in the production-sharing contracts in order to achieve a significant increase in the scale of oil exploration and production activities in the country.

8.5 VIETNAM has sought to improve the governance of her extractive industries via the formulation of new regulations. There has been an emphasis on increasing transparency in the regulatory process, obtaining input from industry stakeholders, and encouraging investment in the sector. However, Vietnam still has a long way to go before her governance structure and regulatory processes match up to international best practices.

Vietnam's anthracitic coal resource is of great interest to Japanese and South Korean power producers. Unless the country manages to get its act together and improve its perception as a good place to do business with good governance and a stable regulatory regime, Vietnam stands to lose out on coal export dollars in the coming decade.

The regulations in Vietnam need to be improved ensuring that ambiguously-worded laws do not encourage corrupt practices on the part of companies or the regulators. Vietnam suffers from a high degree of uncertainty concerning the administration, interpretation, and enforcement of existing regulations. This uncertainty can reduce investment appetite in the sector, contrary to what policymakers at the helm seek to encourage. Also, given the overlapping jurisdictions of the myriad agencies that are part of the regulatory formulation and administration process, systems promoting alignment of policies need to be instituted. In the absence of this, the desired outcome of the policy-makers will be far from achieved as in evidence from these countries to date.

Vietnam has sought to decentralize government raising the self-governance by provincial and local governments. While it might be good to get local communities involved in governing themselves, it has proved to be the bane of good governance of the extractive industries. Regional governments have not yet developed the institutional capacity to administer their new responsibilities and lack of accountability for their actions. Also, the lack of coordination amongst federal and local governments results in regulations that conflict in their objectives and result in a duplication of effort. Furthermore, decentralized governance has resulted in increased opportunities for regulatory capture as transparency and accountability are compromised.

In recent years, illegalities in Vietnam's mining sector have become more visible, resulting from several factors which include unclear laws, poorly equipped local governments, collusion between provincial governments and mining companies, and corruption.

Vietnam needs to raise the transparency with which regulations governing the extractive industry are formulated. This will ensure that the variety of inputs received from stakeholders are able to identify the potential negative externalities generated via proposed regulations prior to their implementation however equitable they might appear in principal. Staff involved in the regulatory process need to be adequately trained to ensure technical competence and compensated well enough to lower the possibility of being incentivized to game the system.

An institution that coordinates the regulations that affect the extractive industry should be set up. It should consist of technocrats from the energy, public finance, and planning ministries to ensure that the regulations are statically and dynamically efficient. There is also a need for very clear guidelines as to the extent of the local government's regulatory authority relative to the federal government. And finally, regulations need to be clear and, once in place, adhered to. The unevenness with which regulations are imposed will affect investment in the sector which is much required if Vietnam is to benefit from increased demand for her coal.

8.6 TIMOR LESTE, as a newly-formed sovereign nation, has embarked on formulating a regulatory regime based on transparency, consulting with industry stakeholders so as to produce regulations that are aligned with best practices.

However, despite being the only country in this sample considered in this study to be certified under the Extractive Industries Transparency Initiative (EITI), Timor-Leste's regulations and industry governance have a long way to go yet. The country's experience makes the criticism of transparency as the most important metric of governance more pertinent reminding us that transparency is a necessary but not a sufficient condition for good governance.

Timor-Leste does look to public consultation before the enactment of its law. Draft decrees are presented to the stakeholders and their opinion sought. However, many organizations within the country do not have the capacity to effectively critique government proposals which may limit their influence over government policy.

Timor-Leste has been having more frequent charges of corruption leveled against high-standing civil servants but efforts are being made to correct this via the institution of a high-level anti-corruption agency.

Regulations governing Timor's petroleum sector are quite intricate especially which makes adherence to the regulations difficult to follow as well as police. The justice system is in transition with a full a set of national legislations not yet enacted, making for uncertain legislative outcomes.

Government employees in Timor-Leste often lack administrative experience. While those that do have the requisite skill-set come from when Timor was governed by Indonesia which is not the best of qualifications.

Timor-Leste manages its petroleum wealth via a Petroleum Fund established in 2005 as per the Petroleum Fund Act (Law no. 9/2005). By law, all petroleum and related revenues must be paid into the fund, with the balance of the fund invested in international financial markets. The Government of Timor-Leste publishes an annual budget which includes revenues and non-donor funded expenditures. Over the past few years, growth in budget revenues has been financed mainly out of growth in the petroleum fund, which has increased with new oil and gas discoveries.

While transparency underpins Timor-Leste's regulations, this should not be the only criterion used to judge good governance. The country needs to establish a broader set of metrics to gauge its performance. The reports that the country produces under its transparency initiatives need to provide information in greater detail in order to allow for greater scrutiny by concerned groups. Also, these reports

need to be produced in a timely manner lest the exercise become redundant due to delays. Timor-Leste needs to build up its regulatory capacity ensuring that personnel are technically adept at providing administrative support to the complex regulatory regime in place. The country needs to simplify its regulations to ensure that compliance cannot be circumvented due to lack of understanding on the part of companies or regulatory authorities. Changes to the regulatory fund need to be deliberated over keeping in mind the guiding principles for creating the fund.

8.7 CAMBODIA severely suffers from lack of transparency and accountability with respect to oil governance. Details of production-sharing contracts reached with companies are confidential and revenue transparency is very limited. It is recommended that Cambodia practice increased transparency in the governance of the oil industry, and in particular emphasize transparency with respect to how oil revenues are obtained, managed and spent. In Cambodia centralized governance structures and lack of effective oversight have led to very limited accountability. Corruption exists to a severe degree in Cambodia. Regulatory capture risks exist both due to corruption and due to conflicts of interest at the higher levels of the oil governance structure.

The regulatory framework in Cambodia is outdated and there is significant uncertainty about when a new legislative framework will be adopted. Cambodia would benefit from the adoption and implementation of comprehensive and updated petroleum legislation. In Cambodia, there are legal and technical capacity constraints in the ability of the CNPA to directly regulate and govern the petroleum industry. Cambodia does not yet have the experience of producing petroleum and handling petroleum revenues, and as such would benefit if it were to use Timor-Leste's revenue management (through a Petroleum Fund) approach as a model.

The model production sharing contracts (PSC) in Cambodia is skewed in favor of the investing company and the guaranteed revenue for the government is only 16% of gross production, with revenues highly exposed to oil price and operation cost fluctuations.

Cambodia should practice increased transparency in its governance of the oil industry, and in particular needs to emphasize transparency with respect to how oil revenues are obtained, managed and spent. Increased parliamentary oversight and the use of public consultation procedures are recommended to increase

accountability and limit the scope for corruption and regulatory capture. Cambodia should accelerate the process for adopting and implementing of the new legislative framework to replace the 1991 Petroleum Regulations in order to increase regulatory clarity and certainty. Given the context of limited oil resources, Cambodia should consider modifying the production-sharing contracts it awards so as to capture a greater share of the oil revenues and reduce the exposure to oil price volatility, for instance by reducing the cost recovery limit and increasing the royalty rate. Finally, it is recommended that Cambodia return back to an open bidding process in the awarding of blocks so as to increase transparency and allow blocks to be awarded to companies best able to explore and produce oil.

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