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Taxation of Extractive Industries

Proposed Guidance on Fiscal Take in the Extractive Industries

Summary

This is an updated version of the Fiscal Take guidance note presented as CRP 3, Attachment E, during the 12th Session of the Committee of Experts in Geneva. The note is for further consideration and approval at the Thirteenth Session of the Committee of Experts in December, with a view to its being incorporated in the 2017 Handbook on Selected Issues for Taxation of the Extractive Industries by Developing Countries. Please refer to the Twelfth Session Coordinator's report, by Committee Member Mr. Eric Mensah (E/C.18/2016/CRP.3) for an overview of the Subcommittee's work.

Executive Summary

Government's share from development of natural resources can include many components. Their nature and scope can be wide ranging. While likely to include income taxes and royalties normally associated with the extractive industry (EI), the government's share can also include other taxes and fees, as well as obligations placed upon investors, such as making infrastructure investment, employing and/or training residents, purchasing services and supplies from local businesses and contributions to decommissioning and environmental costs. It is this total contribution to a developing country's economy that should be considered in evaluating fiscal take.

Both government and business objectives should be clear, and clearly communicated, in order to create a framework for decisions in the design of a sustainable total contribution and tax policy. The government should form an idea of its potential resource revenues, what kind of return it expects, how it wants to receive its resource value as well as the timing of the expected return, and how it wants to manage and use the funds generated by its resources. Businesses should provide a clear description of the risks they perceive as investors and an overall description of what they believe is necessary to make the investments required to achieve the sound and successful development of the natural resources at issue. Key elements in this assessment for both the government and potential investor are the fiscal instruments a government ultimately applies.

Great variation in the types and design of such fiscal instruments is available and each one has differing implications for both governments and investors. Many combinations of such instruments exist in developing a good fiscal policy for the extractive industry, and given the long term nature and scope of these projects, long term government objectives should drive the choice of instruments. Ideally, governments and investors should work together such that the ultimate take commanded by the government promotes government objectives while attracting the investment required to develop the country's natural resources.

Implementation issues for any particular fiscal regime (including monitoring, auditing and revenue collection) should also be considered at an early stage. It is crucial for there to be upfront and ongoing coordination between the various governmental departments relevant to the government take, and perhaps even dependent on those funds. Consideration should be given upfront on allocation of profits/ tax revenues between parts of the national government and between various subnational entities in order to make long-term investments in natural resources sustainable for all the parties involved in the administration of the venture.

Purpose

The purpose of this note is to provide context for stakeholders as to how value derived from the development of a country's natural resources can be shared between the government and investors and to elaborate on what building blocks are available to allocate that value. Besides an overview of the types of government take available, the note elaborates on how the various

fiscal instruments can influence investment and revenue. In addition to sharing knowledge about the specific instruments, several potential interactions between these instruments and the existing, general tax regime in a country, including its international aspects, are covered.

This note is intended to assist policy makers and members of the tax administration of developing countries in participating effectively in extractive industries tax policy development and tax implementation as well as to provide information to other stakeholders. It should allow policy makers and tax administrators to understand implications of the choices they make when formulating tax policy and when applying existing legislation. Since fiscal policy and decisions around government take are at times made outside the Ministry of Finance (e.g. by the Ministry of Energy or Mines), the guidance note underscores the importance of tax authorities' participation with their counterparts in other departments to ensure government take decisions can be applied consistently and in alignment with the existing constitutional and fiscal framework.

Background contained in this note provides a broader context for viewing the overall issue of natural resource taxation and relates to other guidance notes, such as the taxation of indirect asset transfers, value added tax issues and the tax treatment of decommissioning. Those other notes give more detail on these significant issues.

Status

This note is for guidance only. It is intended to identify the main issues arising as a result of the taxation and government take of the extractive industries, briefly addressing the most significant ones, help build awareness, and ultimately help those faced with these issues to make policy and administrative decisions in relation to them.

Terms Used

[DEFINITIONS TO BE UPGRADED AND TO BE ALIGNED WITH OVERVIEW NOTE]

Bonuses Lump sum (or sometimes staged) payments made to a government upon award of a natural resource license or some other project event.

Concession Regimes Structures involving government grants to an entity of the rights and/or licence for exploration, development, and extraction of natural resources at the grantee's sole risk. Grants generally cover a fixed area and impose certain time limits for the activities; sometimes also known as "tax and royalty" regimes; common in both petroleum and mining industries.

Consortium or Joint Venture An arrangement between several investors who may pool the capital and expertise to jointly exploit and share the risks connected with exploiting a particular extractive project.

Contract Regimes Structures involving government appointment of an entity as a contractor who agrees to bear exploration, development and other costs at its own risk in return for a share of production in the case of a success. It is more common in the petroleum industry and can be structured as a Production Sharing Contract/ Arrangement (PSC or PSA) or a Risk Service Contract.

Cost Oil Cost oil is the portion of produced oil that the operator applies on an annual basis to recover defined costs specified by a production sharing contract.

Cost Stop

Creaming mechanism

Extractive Industries Those engaged in finding, developing, producing, and selling non-renewable resources such as crude oil, natural gas, and hard minerals (such as gold, copper) and their products.

Fiscal Systems The general framework governing natural resource activities, generally falling into two broader categories: concession regimes or contract regimes.

Fiscal Terms Specific economic elements relating to extractive industry activities within a particular country including taxation, other payments such as bonuses and royalties, legal framework and state participation.

Fiscal Arrangement

International Oil Company (IOC)

Internal Rate of Return (IRR)

License holder A person obtaining the licence to explore and extract the natural resource from its owner, usually the country.

National Oil Company (NOC)

Operator/Contractor The entity in charge of performing the actual extractive industry activities with respect to a particular project. It can be the licence holder or one of the licence holders, if the licence was granted to a consortium or joint venture.

Profit Oil "*Profit oil*" is the amount of production, after deducting cost oil, allocated to costs and expenses that will be divided between the participating parties and the host government under the production sharing contract.

Royalty In the extractive industries, the term 'royalty' refers to the obligatory payment made by the operator of the extraction project to the state as compensation for the extraction rights. Royalties are generally calculated with reference to the type, quantity, quality and/or value of the extracted mineral resource as a percentage of the gross volume or value of the production (i.e., costs generally do not reduce the base), and are due once production commences. The term 'royalties' as defined under article 12 of the UN Model has a different meaning and refers

to the payment for the right to use property (in case of the UN Model both tangible and intangible).

Reserves Replacement Ratio (RRR) A performance metric which indicates to what extent entities are able to find and prove new hydrocarbon reserves in comparison to the hydrocarbon reserves produced. The RRR is an indication to what extend future resource production equals current resource output from existing sites.

R-factor

Service Provider or Subcontractor A company or individual providing various types of services and other supplies to the Operator/Contractor in the framework of the extractive industries.

State Participation Direct government ownership or shareholding in a portion of a project and or extractives company (beyond its ownership of the underlying resource reserves); also known as "Equity Participation".

Tax Oil Tax oil is the part of the profit oil that is used to actually pay income taxes owed by the investors on their profit oil.

Background and scope

Developing a country's natural resources can provide a significant boost to economic development for a country. Planned well, and implemented with care, natural resource development can provide revenues and other economic benefits to a country and its citizens. Special considerations are required when a country agrees to natural resource development since such resources are finite—thus the country needs to be especially careful that it obtains the maximum benefit from the "one-time" extraction of such natural resources. From an investor standpoint, extractive industry investment also has special considerations from regular investments: while the resources are finite, their extraction and development is risky and very capital intensive, with particularly large investment required at the "front end" of the project life. The business often requires specific expertise and generally involves a long lead time into profitability[1].

Countries embarking on natural resource development will seek to find a balance between achieving a maximum benefit for the country while providing investors with a return on their investments commensurate with the risks taken. Resource holders should set up clear rules on how to secure an appropriate government share from these finite resources and while it is difficult to provide guidance that applies equally in all circumstances, there are a number of general considerations that are relevant when designing and implementing extractive fiscal systems around the world.

[1] *[reference to be added]*

Risk/Return

One of the most important considerations is how various risks involved in natural resource development are allocated between the resource holder and the investing company. Risks include many items - geological, political, and development risks, influencing the ongoing operating costs, and the inherent and high risk in the pricing (or value) of the revenue stream over long periods of time. Commodity prices influence the return for the resource holder and investor, the cost recovery for the investing company and the ultimate price of the final product. Activities related to the extractive industries (EI) typically carry higher levels of risk than other business sectors e.g. the typical success rates for an oil and gas 'green field'[2] exploration activity globally varies from 1 in 3 to 1 in 4. This is fundamentally a risky, capital intensive business which can take decades to provide an economic return to an investor. The presence of fiscal stability will also influence the risk/return balance.

Investors generally bear the risks of providing the funding and technical expertise for the exploration and development of a natural resource project. They are generally comfortable with bearing the risks associated with the geology, development, overall project costs, and commodity prices. They are less comfortable, and seek ways to reduce or minimize, political risks, including changes in fiscal terms. But they evaluate whether to invest on the basis of the full level of risks involved at the time they make their investments compared to the level of economic return that they can expect. Key in making this evaluation are the fiscal terms and overall government take.

The risk/return ratio can change over the life cycle of the development of resources and again, the return required to induce initial investors that were prepared to take on the "higher risk/ higher return" activity may be quite different from what may be required at later stages in the development of a country's natural resources. It can be influenced by the accuracy of the seismic information or sampling of the underground and its analysis, but also by the price at which the resource is being traded internationally, the scarcity of the resource, the existing technology used to extract the resource, amongst other factors. Countries should, as a policy, consider whether they would be willing to provide a better treatment towards investors who were, from the start, ready to undertake a "high risk/high return activity" as a way to attract that form of investment. These considerations will be influenced by the type of natural resource the country has within its territory, the historic risk associated in removing that resource from the soil, the location of the resources as well as other factors.

No "One size fits all"

The interaction between costs and fiscal terms is critical in the design of the fiscal system. Terms that are sensitive to the cost intensity of the resource being developed and extracted will be the most effective. For example, in the oil and gas industry, the old adage "cheap oil and tough terms come together" has been well demonstrated by resource holding countries around the

[2] 'Green field' exploration implies no previous exploration and production activities have taken place in an area. Only theoretical information is available about the underground and quality of the resources to be extracted. In case of pre-existing drilling, one speaks of 'brown field'

world, that typically command a high level of 'Government Take' for low cost / low risk developments onshore. The opposite is also true – high cost / high risk exploration, e.g. in frontier deep water acreage, typically requires higher levels of investor return potential to incentivize companies to take on these higher risks.

Different perspectives on the geological attractiveness of the acreage, the long term commodity price outlook, risk appetite, and internal profitability screening criteria often lead to a range of bids from interested companies. These risks and criteria are not assessed in the same way by all actors. In the oil and gas industry, for example, very often national oil companies will have drivers and internal criteria which are different from international oil companies' standards to determine an "economic return".

Throughout the lifecycle of a project the host government may want to increase jobs or develop domestic competencies. Developing countries may consider local content or other infrastructure requirements on investors to meet these objectives, and may adopt that approach in lieu of an increased fiscal take. Whichever way the objective is achieved, specific requirements will generally change the overall cost and risk profile of the venture for an investor, and as a result, will impact the fiscal terms.

Finally, as access to conventional oil and gas opportunities has declined, investing companies and investor countries have become more prone to pursuing 'unconventional' opportunities, which tend to involve a greater degree of difficulty in removing the resource, be more expensive or both. Unconventional oil and gas projects may require an adjustment of existing terms on offer – for example, the risk/return ratio may be different from conventional oil and gas opportunities; the cost structure, impact on environment and even the timing required to generate profit may be different.

Predictability

Investing companies are generally prepared to take the technical sub-surface, cost, and commodity price uncertainties over the life of the venture, but they are very uncomfortable about shouldering fiscal uncertainty as well. Risks associated with an unstable fiscal or tax environment impact an investor's overall risk profile and therefore the return levels required. The more a government can reduce investor risks, the higher the amount the investor will be willing to pay in terms of government take.

All things being equal, stability and predictability in a fiscal regime positively influence the risk/return ratio by creating certainty which is more likely to attract investment. This is true throughout the project life, even late in the life of a basin or license where the size of discoveries statistically becomes smaller and smaller and the cost of abandonment and decommissioning come into consideration[3]. Developing ever smaller discoveries may increase risk to the point

[3] Referring to the Guidance Note on Decommissioning, the incidence and fiscal treatment of decommissioning costs should best be considered upfront. The focus on these costs and their treatment will become more prevalent later in the development as their Net Present Value increases.

where there is no longer an acceptable chance of making an economic return, especially if there is the risk of further adverse fiscal change. Often fiscal regimes are stabilized in the contract to ensure predictability.

The ideal is to anticipate as many scenarios as possible (e.g., high and low prices, drilling and development cost changes, recoverable reserve levels, etc.) and develop flexible fiscal terms to deal with such possibilities from the start. These can ideally deal with a variety of technical risks and different types of opportunities as well (e.g., onshore, deep water and unconventional oil and gas developments). To illustrate, Russia has a tax system that proposes different terms depending on the type of opportunity. This deals with uncertainty by providing flexibility in a predictable manner.

If this flexibility cannot be addressed in the terms from the beginning, investors will value (and see less risk in) changes introduced by modifying the terms of the successive licensing rounds if available or via a mutual renegotiation process rather than through unilateral modification of the fiscal terms. Whilst there may be merit in competitively tendering exploration acreage, there may be other situations where it is not in the best interest of the government to follow this approach e.g. where licenses are due to expire and it is mutually advantageous to enter into negotiations to extend the license. [See also the Guidance Note on Negotiation and Renegotiation of Contracts]

Predictability is also enhanced through simplicity of terms, which is an important driver and may need to be balanced with the other considerations. Especially when considering administrative implementation, the terms should be clear and simple enough to be administered with the human and financial resources and capacity at hand.

Long term perspective

Many oil and gas fields have a life cycle from exploration to abandonment of 30 to 40 years or longer. The life cycle of mining activities can be even longer. Fiscal certainty over a long time span is therefore critical in investment decision making but will be challenging in view of what may be shorter political horizons.

In the taxation of EI, it is important to look at the profitability over the life cycle of projects, which underscores the benefit of developing a fiscal terms structure that is flexible and works appropriately in periods of both high and low prices, costs, etc. It is also important to focus on the overall government take, rather than comparing individual elements of a tax and fiscal regime structure. Especially in developing countries government take almost always includes indirect charges such as investments based on infrastructure, employment, training, and local content requirements.

Integrating environmental considerations in fiscal system design is also important and is often not effectively addressed since environmental considerations may be dealt with by another part of Government. Policy makers should consider including a framework to deal with those issues and

obligations upfront, even if the environmental requirements like decommissioning are only expected to come in at the end of the project's lifecycle. [See the Decommissioning Note]

Simplicity and clarity

There are a number of ways to structure and design implementation and administration of the regime. Favouring simplicity in design, avoiding multiple creaming mechanisms, and ensuring flexibility in the system, are a few of those features. 'Simplicity' should be the guiding principle, not in the least to ensure effective and efficient enforcement.

Efficient, predictable and stable tax regimes that are simple enough to be applied efficiently and consistently, can incentivise long-term investment as well as reduce disputes. Developing a predictable and risk based approach to deal with potential disputes and deal with compliance could help increase clarity whilst using government resources as efficiently as possible.

Scope

To assist Tax Authorities in developing countries to contribute to the design of EI fiscal systems and to administer such systems in an effective manner, the note:

- Elaborates on framework considerations both the resource holder and the investor may have when developing and evaluating the fiscal terms;
- Describes the most typical fiscal instruments used in the extractives industries;
- Lists potential consequences of the interaction between the various instruments as well as with the regular tax regime; and
- Considers some specific issues regarding tax administration and their impact on the effectiveness of a fiscal system

This note does not deal with the determination of what an appropriate risk/return and fiscal share allocation should be. This will vary from country to country and even from project to project within a country. As noted, the share of natural resource value a resource holder receives from resource development is larger than the pure fiscal take. Therefore, the mandate to determine the appropriate return as well as the expertise to determine it, will generally be beyond the tax administration's competence. The content of the note should however allow the relevant tax authorities to challenge assumptions made regarding fiscal take determinations and contribute to the design of fiscal terms to ensure policy makers include tax specific considerations when defining the contractual arrangement for exploration of resources and negotiations of terms for an agreement[4].

[4] Economic modelling is very relevant and tax experts should be involved in the economic modelling done by a country on EI fiscal take. They should be in a position to challenge what tax assumptions have been made for the modelling and whether the pre-existing fiscal rules have been considered in the overall economic modelling. Modelling support is available with the IMF (FARI model) and various other institutions (e.g., Columbia University with economic modelling on gas).

Stakeholders

The overall framework determining government take will do more than allocate EI revenues between the resource holder and the investor. The choice of specific EI related instruments or combinations thereof is likely to have an impact on the business a country seeks to tax (and attract to make investments) rather than just have a revenue raising capability. This is more so the case for extractive industry taxation as for general profit taxation as general profit taxation is primarily set up to raise government revenue where an EI fiscal regime allocates risks and returns of a venture.

There are EI specific drivers that need to be considered in order to fully understand a government take regime and its potential consequences on government and investor behaviour. The more clarity various stakeholders have with respect to each other's drivers and objectives, the more they can be aligned, which in itself will improve the sustainability of the project.

Resource holder considerations

***Overall fiscal take*:** A country's natural resources should contribute to the general development of an economy. The way the government take is set up and applied will directly affect the ability of a country to achieve those objectives and if and how investors engage in natural resource development projects. As note, when assessing the level of government take that will come from developing the country's resources, resource holders and administrators should consider the total contribution this development could and should make and what the economic and social developments are that they wish to achieve with and through this contribution. This may include the development of new infrastructure, eventual transfer of infrastructure, the fulfillment of local content requirements, contribution to training funds and community projects, as well as tax, royalty, and other revenues that arise as a result of the fiscal terms. Local content development is often very important for developing countries.

***Timing*:** The government holding resource often is faced with managing expectations from its citizens with respect to ongoing exploration activities, especially as they are announced as proving to be successful. Due to the long term nature of those extractive projects, the timing of revenue generation and overall contribution to the local economy needs to be carefully planned and managed. Governments can make use of different instruments in order to obtain the government share and many have different timing effects– some are more "front loaded" than other, having an earlier "realization" date. Frontloading may be helpful in gaining revenues early and demonstrating to the country the benefits of resource development, but since such front-loading generally negatively impacts the risk/return assessment by investors, the interplay in addressing a country's expectations on timing and the competitiveness of its regime is critical to a successful outcome.

***Funding concerns*:** Fiscal terms can often include the government owning an equity stake in a project. If a country considers taking on an equity stake, how it will fund its obligations for exploration and development costs is a key question. Where high risk exploration is involved, such as in areas without existing fields/mines, a country's willingness to accept this risk, in whole or in part, can introduce new challenges for Governments. This decision will be influenced by their ability to bear risks, e.g. drilling exploration wells is very costly, and to deal

with public concerns and expectations in the case of unsuccessful results. Not all Governments will have the funds or technical expertise to embark on such projects. The funding requirements for the host government will be even larger in case a National Oil Company (NOC) participates in the venture. The NOC will have to finance its ventures with the revenues only coming in much later. Even governments that do have the funds available, may decide to rely on investors for funding such higher risk projects, and reserve their own funds for other important country objectives. ***Development objectives:*** Resource rich countries may seek to achieve very different objectives, and thus tailor fiscal terms quite differently, depending on the level of political, economic, and natural resource development:

- In the early years of opening up acreage for exploration, a government may want to focus on incentivizing high risk exploration activity, e.g. to 'prove' that the acreage has oil and gas resources or to assess the grade of the minerals. Terms can be tailored accordingly to achieve this objective.
- Once the acreage has been 'de-risked' and the geological play has been 'proven', the focus may switch to maximising early revenues to the Government, e.g. to fund social development programs. Terms can be tailored to achieve this objective.
- In mature EI provinces, Governments may shift their focus to maximising ultimate (economic) recovery from a basin, particularly if there are limited "windows of opportunity" from an infrastructure or resource perspective. For example, the pressure on oil and gas reserves tends to diminish towards the end of life in a basin. Effective production may require artificially increasing pressure, the costs of which may make a venture economically unattractive at a certain point. Again, terms can be tailored to meet this objective.

Environmental impact: Investor countries are more and more concerned about the potential impact of EI on the environment, specific ecosystems. With extraction becoming technically possible in more remote areas and situations like extreme deep water or unconventional resources requiring fracking, consideration will be given to how the risk of extraction on the environment will be managed and allocated. Environmental taxes applicable will be considered to determine the overall fiscal take. If such specific taxation does not exist in the country, terms can be set up to cover the issue. Environmental conservation is often dealt with by different government organisations than the fiscal take though. In any case, environment issues need to be considered upfront to ensure appropriate decommissioning regulation and tax treatment.

Competitiveness**:** Upfront clarity on overall objectives as well as on the future use of (expected) revenues is very relevant to assess whether the resource holder can, should or wants to provide incentives to attract foreign direct investment in or related to the development of its extractives sector. Overall, countries that are perceived to have lower levels of risk (technical, political, or economic) will be able to command higher levels of 'Government Take', i.e. higher rent taxes or other fees and obligations. Countries perceived to have higher levels of risk will need to design their fiscal regimes to be more attractive to incentivize companies to put capital

at risk. There are ways related to contract negotiation and re-negotiation that can harness the competitiveness.

***Internal allocation – funding subnational entities*:** Projects and investments tend to be more sustainable if the overall sharing of risks and benefits within a country, amongst various subnational entities, is clear. This is especially the case in larger countries or in cases where the extractives are centralised in certain areas of the country. This clarity is important for policy makers as well as investors. If the allocation of funds is not clear, this could have a negative impact on the stability of the terms agreed.

***Interaction with pre-existing legislation*:** The specific fiscal instruments for the extractive industry will interact amongst themselves but also with the corporate and other tax systems that may be applicable in the national or subnational sphere of the country. This interaction is not always addressed timely or appropriately, not in the least due to the fact that the upstream fiscal instruments are often regulated by a government department (e.g., a Ministry of Energy or Mining) other than the one dealing with the general tax system (generally the Ministry of Finance or the Treasury Department). It will be important for a country to ensure close coordination among the affected governmental departments to ensure that whatever is negotiated or regulated by one Ministry is not inconsistent with laws and regulations that have to be administered by other governmental agencies.

Investor considerations

***Risk/return*:** In the global competition for limited capital and human resources, investing companies will seek investment opportunities which offer the best risk / return balance. Attempts to introduce higher resource rent after investment has been made can also lead to 'capital flight', which in turn may require counter-acting measures (such as the introduction of incentives) to try to bring capital back.

Free market fundamentals can be achieved through the use of competitive bid rounds and through direct negotiations when the technical scope or economics of an area are difficult or require expertise that is limited. Considering EI's life cycle, the terms required to promote investment in the early stages of exploration of a frontier resource may evolve for future licensing rounds when EI activities becomes less risky. To ensure investing companies remain prepared to take on the "high risk"/ high reward" activity, investors will expect different terms that would yield more government take only for future licensing rounds to affect such new projects, rather than being retroactive to earlier, higher risk activities.

***Stability*:** If companies perceive the need to manage the risk around an unstable tax and operating environment, this will impact the overall risk profile and therefore the underlying return. Investment decisions are impacted by the risk of adverse fiscal change, meaning the return required by an investor will increase if faced with an uncertain fiscal environment. That will result in much less attractive bids for Governments as investors factor in potential future changes. Fiscal uncertainty can also adversely affect the transfer of oil and gas properties among different companies which in turn can lead to less than optimal development of the resources.

Competitiveness: Many types of fiscal regime can work if they are competitive and predictable for investors. However, it is important to understand the allocation of risks and returns under the fiscal regime ultimately adopted by the country. While any fiscal system can be designed to give a level of economic return at a specific commodity price, how the underlying risk and return profile changes under different cost / revenue scenarios will determine the interest levels from investing companies. Often progressive systems are considered more competitive by investors as they move the timing of government share closer to the economical break-even point. As previously noted, more frontloaded systems (such as systems including signing bonuses, or introducing ring-fencing per well) are generally considered less competitive by investors.

Predictability: Changes to the tax law in general will impact the return to investors. As noted above, investors place a high value on stability, and stability includes the consistent application, and administration, of tax rules and regulations. It is important that Country Treasury and Tax officials be aware of these considerations and engage with their counterparts in other governmental departments if EI is an important sector in the country before making general changes to tax law. Attempts to introduce higher government take, such as increased rent taxes, after investment has been made can also lead to 'resource flight', which in turn may require the introduction of incentives to try to bring capital back.

Similarly, investors see a benefit when other departments engage with Treasury and the tax authorities before finalising fiscal take. Often the interaction between fiscal terms and general taxation comes to a head when actually applying the fiscal regulations, e.g. at the moment of filing returns, tax assessment or tax collection, and this can be too late if there is any ambiguity or misunderstanding between governmental agencies regarding the interpretation and application of fiscal terms. Resolving such ambiguities or misunderstandings at the negotiation stage (or at the time fiscal terms are developed and statutorily approved) reduces investor risk and benefits both the investor and the country. Also, for the country itself, a particular fiscal policy will not yield the sought after results in government revenues if ambiguities and inconsistencies exist and the responsible government department is not in a position to consistently and predictably assess and collect revenues. ***Ownership of underlying reserves:*** One of the performance metrics relevant to international oil and gas companies is the Reserves Replacement Ratio (RRR). The RRR indicates to what extent companies are able to find and "book" hydrocarbon reserves to replace the amounts produced each year. A company would have an RRR of 100% if for every barrel of hydrocarbon produced, another barrel is found/discovered and booked. The ownership of the extractives will be determined by the contractual arrangements. Generally, concessionary systems and contract systems contribute to RRR, but acreage covered by service contracts will not.

Building blocks for government share

A whole range of EI specific instruments are available to allow resource rich countries to allocate the revenue from their natural resource wealth and to tax the extractives industries sector.

There are a number of excellent sources available to describe in detail fiscal instruments that have typically formed a part of fiscal regimes for the extractives sector[5].

The share a government will receive or retain regarding development and production of its natural resources can take many shapes and forms. And as noted, overall government take is certainly not limited to the taxation of the revenues generated by the EI:

- Signature bonuses – to be paid, often in cash, at the moment the contract is granted to a specific part;
- Part of the production – can be obtained directly by the host country in various ways:
    - Through state participation in the venture in which case the host country will obtain a certain part of the production in accordance to its participation. The country will have to contribute its part of the costs as well in accordance to its participation in case of paid equity. In case the host country will not pay its part of the costs, the equity is carried and an additional part of the production may come to the host country to allow them to pay the costs;
    - In production sharing a fixed share of production is reserved for government
- Production based contributions like royalties, often determined based on volume or price of the commodity
- Various forms of taxation on the corporate result, taxing either the profit or the cash flow generated – corporate taxation, hydrocarbon taxation, resource rent taxation
- Indirect taxation like VAT, customs, other import or export related taxation
- Required investment in training, infrastructure like production or transport facilities, local social facilities, – often stipulations are included that transfer ownership of these facilities at one point.
- Other contributions

There are various aspects to determining the government share of natural resources. Who owns the resources throughout the development? Who is responsible for the costs? Who is entitled to the revenue? Who decides? The eventual tax take will be influenced by different allocations of risks and revenues and by the resulting rules that are not always drafted for and by tax officials.

Determining who owns the resources and the revenues is largely governed by the local legal framework, statutory rules or contractual arrangements between the resource owner and the entity exploring and developing the resources. Therefore, understanding these arrangements is critically important to understanding a government's fiscal take risk/return.

[5] Chapter 11 contains an overview of sources used. A number of basic works are recommended for further reading on this subject. [Intention is to highlight some of these works, not duplication:

- [Daniels, Philip et al. edited book "International Taxation and the Extractive Industries"—Routledge, , 2016
- IMF paper "Fiscal Regimes for Extractives Industries: Design and Implementation"
- World Bank Working Paper No 123 "Fiscal Systems for Hydrocarbons" — S Tordo
- Carol Nakhle "Petroleum Fiscal Regimes: evolution and challenges"
- Lindsay Hogal and Brenton Goldsworthy "International mineral taxation: experience and issues"]

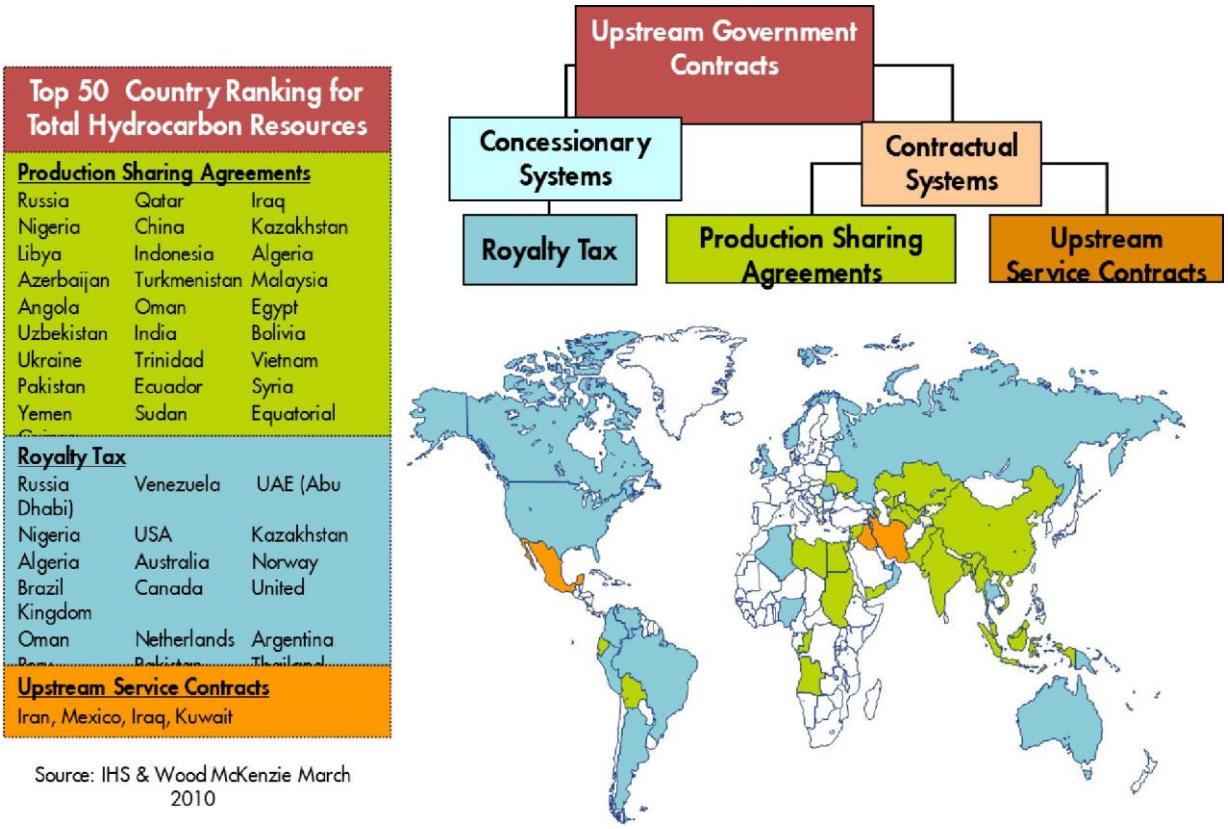
Contractual arrangements

The resource holder sets the legal framework within which to work or agree with the investor. Sometimes the details of the legal arrangements are set by law or even by the constitution, sometimes only the framework is set. In certain countries the terms are negotiated and set contractually.

Regardless of the legal instrument involved, , there are largely three different types of natural resource arrangements:

- Concessionary systems
- Production Sharing Contracts
- Service contracts

[Diagram for illustration purposes- to be updated and paraphrased in editing]



The different systems tend to differ in the level of risk and ownership that is granted to the investor, with the concessionary systems generally transferring most away from the resource holder and service contracts transferring least.

As noted, any fiscal system can be designed to give a level of economic return at a specific commodity price, but how the underlying risk and reward profile changes under different cost / revenue scenarios will determine the government share as well as the interest levels from investing companies. The main fiscal instruments are not limited to specific contractual arrangements.

Concessionary systems

A concession is an agreement regarding a fixed area where government grants a company the exclusive right to explore for, develop and produce resources at its own risk and expense, generally for a specific amount of time. The company is entitled to ownership of the resources it produces from the concession, when extracted at the wellhead (or at another agreed point of transfer of title).

A concession is sometimes called an exploration license or production lease. These systems apply to both the Oil and Gas and Mining sectors. In the mining sector, such concessionary systems are generally implemented by way of leases which cover a specific area for the purpose of underground or surface mining.

Unlike the contractual systems, where the production allocation under the contract itself is part of the fiscal take, the concession agreement itself contains little specific fiscal features. The production of natural resources under a concession system is, however, generally subject to a variety of other fiscal instruments. More commonly, the concession holder will be taxed on the profits generated, often under the general corporate income tax regime. In addition the concession holder may also be required to compensate the resource holder country for the resources extracted in the form of an oil and gas or mineral royalty. Concession systems are therefore often referred to as tax/royalty systems. It is not uncommon for resource holders to add elements of government take on top of the regular corporate income tax and royalty. For example, many countries impose an additional profits tax on top of, or separate from, the regular income tax.

Contracts

Various types of contract systems are possible, Und under the more typical ones, a company is designated as a contractor on a certain area. The title to the resources (in this case generally oil and gas) will remain with the state and the resources produced will belong to the government until and to the extent it is explicitly shared under the contract terms. The company operates in accordance with the terms of the contract, at its own risk and expense under the control of government. The government agrees with the company that the company contract partner meets and finances the exploration and development costs in return for a share of production in kind or in cash.

Contract arrangements are generally called Production Sharing Agreements (PSA) or Contracts (PSC). A PSA is an agreement between the parties regarding the percentage of production each party will receive after the participating parties have recovered a specified amount of costs and expenses. They tend to only be used in the oil and gas sector. Often various international oil companies and national oil companies are partners under the same PSA, worked by the one designated operator. The operator will be either one of the parties to the agreement. Which party is to be the operator is agreed by the parties and designated in the PSA. Depending on the circumstances, it can be the party with the highest participation, or the party with the best connections or biggest presence in the host country. The choice can also be determined by the specific expertise or technology one of the parties has and it can be a different party for the various stages of the contract. The operator is not considered a subcontractor and is not entitled to

remuneration for the work that exceeds the recovery of its costs, which are shared as such between the agreed partners.

In the oil and gas industry, PSAs are used in case the parties agree to share the production and related costs of the oil and gas produced. Unlike concession agreements, the production sharing under the PSA in itself is part of the fiscal take in that part of the production will be designated directly to the host country as compensation for allowing the production. An additional part of production can be due to the host country in case it participates as a partner and thirdly as profit taxation being paid in kind.

A PSA will be specific about how the contract partners share the production and uses specific terminology to describe how they "split the barrel" of oil. The split can be done in cash or in kind. To understand the fiscal take under a PSA, it is important to understand certain of the terminology:

- The barrel will first and foremost contain "*cost oil*". Costs that can be recovered can be exhaustively listed or generally indicated and typically include production costs like infrastructure investments, other exploration costs like seismic tests or sample analysis, technical services, financing costs. The costs that are mentioned as cost oil are often similar but may differ from costs acceptable for accounting purposes or corporate income tax.
- The amount of costs recoverable is sometimes limited to an amount called the "*cost stop*". The company is entitled to recover only the costs limited to the cost stop. If the costs exceed the cost stop the contract is defined as saturated and the excess costs will not be recoverable. The cost stop guarantees a part of the production to the government (as long the value of the crude produced is higher than the cost stop), and can be especially important during the first years of production when the costs are higher. The cost stop can be a fixed amount, but in most cases it is a percentage of the costs of the crude oil. If a cost stop is in place, it is often important to specify what that will mean to the determination of the taxable result. There is often disagreement whether the cost stop also means some costs are nondeductible for tax purposes, making certain costs non-recoverable under both the production sharing formula and the corporate income tax.
- When the costs incurred are less than the cost stop, the difference between the costs and the cost stop is called "*excess oil*". Usually, but not necessarily, the excess oil is shared between the government and the company according to the same rules applied to the profit oil (see below). Again, it is important to specify what this means for the determination of the taxable base.
- "Profit oil" after allocation is generally the portion of production that will constitute the basis to apply profit taxes under the PSA. It is important to determine how much of the costs will be deducted from the profit oil and how the countries' tax rules will apply to the taxable "profit oil" allocation.
- Certain contracts refer to "*tax oil*". In case the contract is a "tax paid PSC" the government partner, generally a national oil company, pays the income tax for and on behalf of the investors. In this case, there is no explicit "tax oil" as the tax would be paid out of the host government's share of the profit oil. In effect, a "tax paid PSC" provides greater stability to the investor on its income tax as any changes in the tax rules would affect only the allocation of the government's share into profit and tax oil. Tax paid PSCs

act like stability clauses. They can be set up on a simple basis, where the income tax is calculated normally on the profit oil. Alternatively, they can be set up on a gross up basis.

Unlike the concessionary systems, various aspects of a production sharing agreement give rise to government take. Part of the government take will come from the production sharing, with the cost reimbursement – as defined in the cost oil under the PSA an important part. Any ring-fencing, cost stop or other restrictions of cost compensation will increase the government take and influence the risk/return balance. The profit oil, which generally is represented by the profit but is increased by any restrictions in cost compensation, will then be subject to income tax rules – income tax, which constitutes a further part of the government take. The determination of the taxable profit may however be different under general tax rules compared to the PSA determination of costs. Clarity needs to be provided on how the various rules interact and it is highly recommended to include these clarifications in the PSA, the income tax code or both.

In the mining sector, agreements on production sharing tend to include:
- Lease rental payments
- Hard minerals distributed in kind (?) in lieu of royalty payments or dividends

Service contracts

Service contracts are sometimes referred to as Technical Assistance Contracts or Technical Service Agreements because they are generally contracted regarding existing fields. Service contracts tend to be typical for countries where the country only seeks to attract additional expertise. The contractor tends to hold less risk in these situations and provides its services for a fee. In some cases, the contractor may be exposed to cost overruns as compared to approved budgets, and thus sometime these arrangements are referred to as "risk service contracts." As the marginal costs are more relevant in these types of contracts, cost and timing estimates as well as fiscal terms are critical. Very often it is a State company or NOC that manages the actual resources and contracts the service provider. The service provider has no right to the underlying resources.

In the mining sector, the lease holders may choose to mine the leased area themselves (known as owner mining) or subcontract the mining operations to a sub-contractor based on clear production and cost criteria (known as contract mining). In addition, service providers (generally known as mine support service companies) may be awarded contracts to perform specific services (such as drilling, blasting or hiring of mining fleet).

The service provider is generally subject to the regular corporate income tax system, potentially at an increased tax rate. In addition, certain fiscal instruments will be added.

Fiscal instruments

A multitude of fiscal instruments[6] exists that can generate revenue for the resource holding country.

Mechanism	Description	Prevalence Number of countries	
		Mining	Petroleum
Signature bonus	Up-front payment for acquiring exploration rights. Commonly used as a bid parameter (Notably for petroleum in the US offshore continental shelf)	1	16
Production Bonus	Fixed payment on achieving certain cumulative production or production rate	None	10
Royalties	Specific (amount per unit of volume produced)	2	1
	Ad-valorem (percentage of product value)	17	31
	Ad-valorem progressive with price	1	9
	Ad-valorem progressive with production		8
	Ad-valorem progressive with operating ratio/profit	3	1
	Royalty applied to operating margin (net profits royalty)	2	0
State, provincial, and/or local CIT'	Rate of corporate income tax at the state, provincial, or local level in addition to federal level. Common in Canada and the U.S. as a province/state resource charge in addition to federally imposed CIT.	2	5
Variable income tax	CIT where the tax rates increase with the ratio of taxable income to revenue, between an upper and lower bound	3[2]	None
Resource rent taxes	Cash flow with accumulation rate/uplift. Can be assessed before or after CIT.	5	5
	Cash flow with limited uplift on losses (UK). (surcharge tax on cash flow)	None	2
	Allowance for Corporate Capital	None	1''
	Allowance for Corporate Equity	None	1[4]
Other additional income taxes	Other profit taxation mechanisms that do not fall under any of the categories above	1	3
Production sharing	Fixed production share	None	5
	Cumulative production	None	None
	R-Factor: ratio of cumulative revenues to cumulative costs	None	13
	Rate of return, pm- or post-tax	None	3
	Production Level	None	13
State participation	Free equity: government receives percentage of dividends without payment of any costs	2	None
	Carried equity: government contributions met by investor and recovered from dividends with interest	3	8
	Paid equity: government pays its sham of costs	None	19
Social investments/infrastructure	Resource companies build infrastructure or make other social investments (hospitals, schools, etc).	1	6

Some of the revenue sources are profit related, others volume related, and they can be specifically applied to EI or for certain types of extractives. Alternatively, the EI can be subject to the general taxation rules of the country. There is an increasing variety of fiscal instruments and they are often used in combination. The indirect taxation of the EI is also a fiscal arrangement which forms part of the fiscal take[7].

Profit based

Profit based fiscal instruments include:

- *Corporate profits tax* – which is applied to mining as well as oil and gas activities. It can be a flat tax rate on profit or a variable rate to capture more revenues when profits are above a

[6] IMF, Fiscal Regimes for Extractives Industries: Design and Implementation, August 2012.
[7] Specific VAT issues are elaborated on in a separate note. Oil and gas tend to be excisable products – therefore customs and excises are relevant. As explained in the VAT note, it is important to point out that where a country largely exports its natural resource production, VAT should not be viewed as a viable source of country revenues and fiscal take, since VAT is rebated on exports.

given threshold (generally called an R factor). The corporate tax applied can be the corporate profit tax generally applicable to all businesses, either at the same rate or a special rate. For example, Italy and the UK apply a supplementary tax for oil and gas - the corporate tax base of oil and gas companies is subject to an additional percentage of profits tax. It can also be a specific corporate profits tax applicable only to EI.

- *Special petroleum – hydrocarbon tax* – which is strictly for oil and gas. It is often based on a country's corporate profit tax but with special features that can significantly deviate from the general regime. Whereas the general corporate profit tax on EI is generally covered under double tax treaties, special petroleum taxation is sometimes not covered. This can impact investors differently, depending on their home country tax regimes and is important for a developing country to consider.
- *Resource rent taxation* – which can be applied to mining as well as oil and gas. It is generally a profit related tax but not on the basis of normal corporate profits. It is based on gross revenue, generally restricted to the revenue from the resource development and allows for certain allowances or deductions. Often, interest costs are not considered deductible and restrictions are in place for cost deductions regarding overhead services. It shares similar features with hydrocarbon taxation.
- *Windfall profits tax* – excess profits tax or cash flow taxes – windfall taxes can be profit related. A windfall profits tax imposes a higher tax rate on profits from a sudden windfall gain of a particular company or industry. Often the windfall or the increase in rate to deal with the windfall is not profit related but is linked to commodity price hikes. (??) Is this common?? Can it be said that often the "trigger" for applying a higher rate of tax is linked to commodity price levels rather than actual increased profitability of a company.

Example – Mining taxation in Senegal

¤***Tax on mining revenue.*** *It is a tax triggered once the project reached a rate of return predefined and beyond which it generates an extraordinary profit, or revenue.*
The revenue is a kind of "abnormal" profit in link with the scarcity of the resource. In practice, the revenue is calculated as the total cash receipts in excess of the cumulative costs increased by a rate of return required by the investor.
The mining revenue or economic revenue is the difference between the gains generated by the mining activity and the expenses, these gains include the "regular" pay of the capital. It is then a surplus which can be taxed at 100% without affecting the exploitation of the resource, that is to say, without affecting the choice of the investor and without economic distortions, it is where lies its interest for Governments as a source of revenue collection.
The calculation is done by raising the annual losses of the rate of return required by the investor ("uplift") and by adding them up to a level at which the losses are recovered.
(In accordance with what has been developed initially in the economic literature, the "uplift" is fixed in a way to give the investor a minimum required rate of return, but this choice is now disputed).
Everything that goes beyond these plus costs is the revenue which can be taxed at a rate to be determined. Australia uses this mechanism for mining activities of coal and iron. It is also planned to be implemented in Sierra Leone with a deduction of the corporate tax paid from the taxable base. It is generally applied with a tax barrier ("ring fence") by license.

¤***The Additional tax on cash flow***
The taxable base is the positive cash flow of the project, once the investment is recovered and by including in the costs the corporate tax. The profit is adjusted annually by adding the depreciation and the interests, by deducting totally any expense in capital.
This one can be also a base of a plus tax. Instead of allowing a supplementary provision in respect of losses carried forward, as it is done in the case of the tax on mining revenue, we can add a simple provision ("uplift") for the investor to recover to the expenses on capital at the beginning of the project. It is the case in United Kingdom through an additional allowance of losses limited in time.

Special features on profit based taxation:

- Depreciation rates – considering appropriate rates for capital expenditure deduction that provide an optimal level for both tax revenue and investment. For instance assets that require high capital expenditure may have a high depreciation rate to encourage investment. In both Mining and Oil and Gas taxation, accelerated depreciation is often available, sometimes limited or focused on the early years of production. Increase depreciation rates support asset investment.
- Uplift – Unlike accelerated depreciation where depreciation rates are increased but the amount of depreciation in total is limited to the investment costs (i.e. the depreciation base), the uplift actually increases the depreciation base. For example, both Denmark and Norway apply an uplift in their hydrocarbon taxation. For every 100EUR spend, an uplift of 25% is permitted such that depreciation on 125EUR is allowed. Uplifts have been used effectively by both countries to keep the asset investment pipeline filled.
- Ring-fencing – ring-fencing occurs when certain costs or revenues are considered separate from other costs and revenues, creating separate bases for taxation within a single taxable entity. The ring-fence can occur per type of activity. For example, in the United Kingdom the upstream taxable base is ring-fenced and subject to a higher rate compared to other business activities. The ring-fence can go further into detail, e.g. requiring a taxable base be determined per mine or per field. Ring-fencing will bring forward the timing of realization of government take for the government. It may give rise to tax payments before an overall venture is profitable. In case certain mines or fields never become profitable, ring-fencing will actually create "sunk costs" – costs that will never be recovered by the investor in the host country although the investor may be making tax payments on other mines or fields in the country.

Production related

Royalty: The main example of production related taxation or government take is the royalty. Royalties are paid, by the holder of the right to extract natural resources, to the resource holder to compensate for natural resources that are extracted. Royalties are generally determined:

- on gross production;
- based on either volume or value of the extracted commodities; and
- at a certain rate, which can be fixed or at a sliding scale.

[examples to be added in editing – including calculation sheet]

In jurisdictions where most extraction occurs on privately owned land or where subsurface minerals are privately owned (for example, the United States), the main production related taxes are called "*Severance taxes*".[8] Severance taxes are defined as volume or value related payments due when non-renewable natural resources are extracted (or severed) within a taxing jurisdiction. Resources that typically incur severance taxes when extracted are oil, natural gas, coal, uranium, and timber. Some jurisdictions use other terms like gross production tax. Where the resources are

[8] Since royalties are generally paid to the resource owner, in the case of private ownership they are paid to the private owner(s). Severance taxes are imposed in addition to any private royalty payment obligations, and are paid to governmental bodies.

publicly owned to begin with (for example, in most Commonwealth and European Union countries), a resource royalty is paid instead of a tax.

Specific arrangements

Other arrangements often used to "tax" EI or to provide resource holders with additional revenues or other economic value:

- State participation (mainly for Oil and Gas);
- Bonus payments – often related to the signature of the contract or the transfer of the lease;
- Carry (mainly for Oil and Gas and generally involving PSAs);
- Land rentals (mainly for Mining); and
- Other non-revenue/cash based systems like:
    - Infrastructure requirements – building roads, hospitals, schools, water projects, housing communities. E.g. in Ghana, one investor has committed to building a 15km road, taking over this responsibility from Government;
    - Infrastructure transfer/Intellectual Property transfers;
    - Training levy/support for study costs; and
    - Sponsorship of specialist courses at universities.

State participation can be another effective route to ensuring Governments secure an appropriate share of the upside in times of high prices or lower costs, whilst maintaining progressivity. Government equity ownership essentially places the government, or a government owned entity, in the position of a partner in the joint venture, along with the operator and any other investor partners involved. This participation can align investor and government interests, providing project advantages such as risk sharing, development ownership, and ensured support for development. Participating partners are however expected to equally share in the costs of the venture – thus government will have to consider how to fund this.

Bonus payments provide early, upfront revenues to countries, and thus have a timing appeal to governments, but are least favoured by investors as they are upfront payments, unrelated to actual production and thus are most regressive. Where bonus payments are involved, it will be important to consider which part of government receives the payment, how transparent the payment is and whether it goes to the national budget or to the budget of the administrative entity where actual exploration and extraction will take place.

A "*Carry*" is a situation whereby a party pays for an agreed part of another party's share of the cost in proportion to the participating interest in a jointly owned exploration license / venture in the expectation of recovering those costs from a share of future production. As it generally relates to situations covered by PSAs, it is more often applicable in oil and gas ventures and it generally only applies during the exploration phase. The carry can apply towards another IOC as well as towards the Government or NOC. In the first case is the carry not considered to be part of the government take because it is an arrangement between private parties? In any case, it is important to determine the tax treatment of carried costs.

Some special EI taxation consists of one off levies targeting specific sectors. An example of one such "special tax" is the National reconstruction levy/National Fiscal Stabilisation Levy (NFSL) in Ghana, where the levy was earmarked to finance a specific sector of the economy. In 2013, the

government of Ghana announced a number of tax initiatives passed by Parliament. The initiatives included reinstatement of the National Fiscal Stabilisation Levy Act. Under the Act, a 5 per cent National Fiscal Stabilisation Levy was applied on profits before tax for specific companies and institutions operating in the country. The list included companies providing mining support services.

[additional editing required to include examples]

Indirect tax

Indirect taxation is taxation not of profits but of certain transactions. Often a general indirect tax exists which is specified for certain products or transactions. It is generally considered part of the fiscal take, at least by the investor. Some examples are:

- VAT – focus on EI related issues and impact on government take/fiscal terms[9];
- Import/export related taxes, duties, or fees; and
- Excise taxes for certain related products, such as for mining imports of certain fuel or pre-curser chemicals, which are key components in mining processes.

Special issues regarding indirect taxation for extractive taxation is covered in a separate Guidance Note.

How to evaluate Fiscal Instruments

To make the investment sustainable and guarantee the revenue flow to the resource holder, all stakeholders' interests should be balanced when managing the fiscal instruments applicable to the extractive venture. In order to do so, it is important to understand their effects derived from the implementation of each of the instruments.

Most fiscal instruments have various effects – e.g. on the timing of the revenue, on its overall policy objectives, and how they impact the risk/return balance—and it is important to understand these relationships.

Timing of revenue

Certain fiscal instruments focus on achieving government take from ventures early on, often regardless of whether the venture is generating profits or even revenue. These instruments move the moment of taxation or government take forward to a date before the venture achieves profitability. In these cases, the taxation of the venture is considered to be "frontloaded".

From a government point of view, some frontloading may be required to manage the expectations of the country or to ensure government funding can be achieved to ensure participation in the venture. Generally frontloaded systems are more "regressive" – systems that tax smaller ventures/production relatively heavier than larger ventures - whereas progressive systems tend to delay the moment of taxation beyond the point of profitability. (See below for further discussion of progressivity and regressivity in fiscal terms)

[9] See Guidance Note on VAT matters [at para …]

From an investor point of view, frontloading negatively affects the risk/return balance which, depending on degree, can affect the project's competitiveness. Investors generally evaluate and compare projects on a discounted cash flow basis, thus the timing of investments or payments has a direct impact on the investor's perceived return from a project. From an investor point of view, terms that defer cash payouts or accelerate the value return of costs will be favoured.

Signature bonuses generate revenue early in the venture. They provide government take before any revenue or production is generated from the venture. If equity elements, i.e., state participation rights, are reserved, depending on their size and funding, they also can impact the risk/return balance significantly. Equity rights generally do not require cash payments from investors, (unlike especially the signature bonus), except in the case that the equity rights of the government include a carry arrangement.

Royalty systems come into play once production starts but do not require the venture to be profitable. As they are production related, their make-up may have an impact on the production profile. They are less regressive than bonus payments, since they at least require production and thus some revenue generation, but they are less progressive than income or profit related payments.

Profit related fiscal instruments give rise to government share around the time the venture becomes profitable However there are aspects of profit related instruments that may frontload though ring-fencing or other types of limitations of cost recovery tend to accelerate the moment of taxation and impose taxes before the investor, on an overall basis, is profitable.

Uplifts and increased depreciation on the other hand push the moment government share is achieved from profit related fiscal instruments further into the future. Depending on how the depreciation regime is set up, these instruments generally have a positive impact on the quantum of investment. [editing to include schedule of EI lifecycle – see Overview note – with various instruments]

Overall objectives

To evaluate whether fiscal instruments achieve overall governmental objectives, it is important for the host country to ensure clarity and transparency on its objectives. Various fiscal instruments in EI give rise to specific consequences besides the generation of revenue[10].

Progressivity vs regressivity

A potential proxy for assessing the risk/return balance is the progressive versus regressive nature of a fiscal instrument.

Profit taxation is 'progressive' to the extent the tax burden increases if the taxable base increases i.e., it both incentivises incremental investment in small opportunities (which may be marginally economic) and provides a proportionally higher share of the economic rent to the Government at higher oil/gas prices or if large discoveries are made. This is particularly

[10] IMF "Fiscal Regimes for Extractives Industries: Design and Implementation" August 2012 P19

important in the later stages of the basin life where the size of discoveries statistically becomes smaller and smaller. It helps to manage the risk that discovered resources are left in the ground. Progressive systems can also be designed to cater for differing conditions, such as water depths, remoteness of locations, production levels and discovery size.
[examples to be included in editing]

Progressive fiscal attributes often make it easier to ensure that the interests of all parties remain aligned over the life of the venture, and under a wide range of macro-economic conditions. R-Factors[11] or Internal Rate of Return (IRR) creaming mechanisms[12] are examples of fiscal attributes that are progressive in nature. Value based creaming mechanisms, for example, can be tuned to ensure that the government keeps an appropriate share of the economic rent from the natural resource development interests regardless of the commodity prices. This avoids the need for arbitrary / unilateral increases in levels of taxation (which may not always be reduced when prices fall i.e. the 'ratchet' effect). They should respond automatically to changes in both cost and revenues.

Windfall profit taxes are not always progressive – due to the cyclical nature of the EI and in commodity pricing. It can be difficult to determine what constitutes a windfall for EI. For example, should the assessment of whether or not extra-ordinary or windfall profits have been realized be done on a one-year comparison basis or should consider the long term and cyclical nature of EI investment.

Ring-fencing is not progressive – ring-fencing occurs when a portion of a company's assets or profits are taxed separately even though they are not part of a separate entity. Ring-fencing in the context of oil and gas generally moves the moment of taxation forward, often before profitability of a venture and it influences the risk/return balance. E.g. in case assets are ring-fenced on a well basis, on a field or license basis, the revenue generated by one field or license will not be offset against the losses generated by another field or license of the same investor, thus giving rise to tax payments irrespective of the fact that the investor may not be profitable. In the mining context ring-fencing applies with respect to surface mining.

Whilst royalties can be very attractive to host Governments (by providing early revenues), they are by their nature 'regressive.' In some cases, they may result in resources being left in the ground, either by:

- Early termination of economic cash flows i.e. early abandonment, or

[11] R factor is a ratio of revenues to expenses. R factors deal with various revenues vs expense variables that affect project economics depending on how they are defined. E.g. some are defined considering gross revenues instead of net earnings. It can deal with accrued total expenditures or on a field by field basis. In general, the use of R factors contract potential upside from price increase, but also protects the downside. [example]

[12] Creaming mechanisms are any aspects of a fiscal regime that increase government take in case of an increase in revenue. Some are more balanced than others. E.g. an increase in royalty rates related on price increase is considered less balanced by investors than a sliding royalty rate based on IRR (internal rate of return). An increase in commodity price will generally induce an increase in cost which is not considered in a slide rate based on price alone. [example]

- By making small discoveries uneconomic to develop i.e. they result in Governments taking a proportionally larger share of small discoveries and a smaller share of large discoveries[13].

For example, over the life of oil and gas basins, many royalty systems have had to be changed frequently by Governments wishing to remain competitive. Effectively, the changes have been made to give a royalty system features of a profit-based system, thereby making it more progressive.

Whilst some governments have chosen to abolish royalties, e.g. UK and Norway, for the reasons outlined above, they remain a popular choice for governments that seek to guarantee early cash flow in the life of an oil or gas field development. However, absolute royalty levels need to be carefully considered so as not to lead to the regressive and counter-productive attributes described above.

The desire to tax on revenue rather than on profit is generally disfavored by investors, since in times of low commodity prices; companies are likely to make a financial loss position for a considerable period of time. In spite of that, companies will still be required to make royalty payments. Thus, taxes on profit, rather than on revenue, generally remain the preferred fiscal model of investing companies.

9. Issues of interaction

Fiscal systems for EI have over time continued to proliferate and gain complexity Governments should asses the economic impact in the accumulation of several different fiscal instruments. They should analyse how the fiscal instruments relate to each other and how they interact with the general tax legislation.

Risks of interaction between various fiscal instruments

Each of the various instruments serves specific objectives and can promote certain intended behaviors[14]. However, once various instruments are combined, the intended objective can be counteracted by other considerations. For example, subjecting EI to a royalty system can provide governments with revenue faster. It is however a regressive system and when combined with other

[13] E.g. a 20% flat rate royalty will take 20 royalty of a production of 100 and 40 of a production of 200. Costs for smaller developments tend to be proportionately higher for than costs for larger development – e.g. the cost of casing a well for a small development will cost the same for a well producing more or relating to a larger oil and gas deposit. Therefore a flat rate government take on a small development will be relatively heavier than on a larger production. This disproportionality in comparison to profitability can be addressed by applying a sliding royalty rate, related to R factors for example.

[14] The IMF overview (p19) provides a good summary of various instruments and what key objectives they serve.

regressive instruments such as a signing bonus or a ring fenced system, a tax system can become so frontloaded it becomes uncompetitive. This may delay exploration or production, leading to reduced or no revenue.

Delineation issues

In case various types of taxation or rates are combined, the delineation of costs and revenue will require special attention in the legislative process.

The rules need to be clear and precise as to which costs and which revenue belong in which instrument. If not, the overall fiscal and tax regime becomes unclear in its results. For example, in case activities are ring-fenced, the legislator should determine against which revenues the costs are to be deducted. It is not always clear which activities are covered within each ring-fenced instrument and a specific separation or allocation of costs is not always possible. Since the costs associated with EI tend to be quite high, the risk of not being able to deduct appropriately is highly problematic.

Enforcement equally poses additional concerns and may become cost prohibitive. Countries may want to consider including examples of tax base calculations into legislation, commentaries to the legislation or have these agreed upon regulations that have the effect of legislation. Delineation issues are especially relevant in profit based taxation as well as in capital gains taxation[15].

Interdependency

When using multiple taxation instruments, it is important to determine how the various taxes relate to each other. Some taxes are deductible costs in computing other taxes. For example, pipeline fees or royalties are often considered tax deductible costs for profit based taxes. In other cases, the various taxes may be credited against each other.

If the various instruments give rise to revenue arising based on mandates from various government institutions, (e.g., some revenues to the Minerals Ministry and others to the Finance Ministry), it is important to ensure full understanding and agreement of the matter by all of the different government entities to ensure a sustainable enforcement.

The interdependency with subnational taxation also needs to be addressed and clarified. It is important to know whether the taxation at various levels can be credited or deducted.

Each of these issues, if not clarified, will increase uncertainties and risks, adversely affecting the risk profile of the country from an investor standpoint, and consuming resources of the government in their ultimate resolution. Avoiding such an inefficient use of such resources and providing clarity from the outset benefits both the country and the investor.

Interaction between EI taxation and general taxation

It is not always clear how to deal with the production that is allocated under a PSA in conjunction with general corporate income tax system. Production can be shared in cash or in kind. There are various aspects that can have interactions with general corporate income

[15] See Guidance note on Indirect transfers and capital gains taxation [at para …]

taxation. It is important to understand how production sharing is done, how and where the volume of the production and the sharing is determined. Timing, responsibility of measurement, reporting and verification are important as is the allocation of risks. It is important to understand who will bear the commodity price risk in case production is shared in kind and who bears the exchange rate risk and for how long in case of sharing in cash. If the PSA and the corporate income tax are mute on these points, or if the arrangements under the PSA are not in line with the corporate income tax, it will be unclear as to how these issues will be dealt with under the general taxation regime.

When sharing production, the composition of the group of investors and their legal arrangements should also be considered from a tax point of view. Apart from the potential direct tax consequences, the indirect tax consequences should be considered. For example, under PSAs the production tends to be transferred from the government to the operator and from the operator to the Joint Venture (JV) or the JV partners. Especially in case of transfers in kind, each of these transfers could be subject to indirect tax at federal or subnational level. It may not be economically intended to levy tax at each of these transfers but arrangements need to be made to ensure the applicable laws are complied with and expectations are managed. Again, resolution and clarity of these types of interactions is "common ground" –countries and investors both benefit.

International tax aspects

It is important to define whether and which part of the fiscal take is considered for foreign tax credit purposes[9]. This is influenced by the provisions of the relevant double tax treaty as well as by the characterization of the tax or levy in the relevant law or contract and by the taxation rules of the home country of a particular investor. Even if the tax or levy is clearly profit related, attention needs to be given to the description and features, especially if agreed in a PSA.[example to be included under editing]

The existence as well as the wording of a double tax treaty and of national taxation in the home country of the investor is relevant for the eventual tax burden on a project. The interaction between the tax system of the home country of the investor and that of the host country of the investment influences the eventual economics of a project. In other words, clarity in these rules, and oftentimes the existence of a negotiated tax treaty, can allow an investor to enter a higher bid.

Relevance of sub-national taxation and allocation of revenues

It is important to consider how the revenue from EI is to be allocated amongst the subnational levels of government of the host country. The imposition of taxes and their allocation depend on the country's constitutional and administrative structure.

In certain countries, subnational levels of government have a mandate to introduce their own fiscal instruments. In other countries, only the federal government imposes taxes and subsequently appropriates the revenue.

Without clarity on allocation, the fiscal terms may not be stable as local entities may become dissatisfied with the revenues they are receiving. [reference to recent studies to include as editing]

Issues of enforcement

To ensure effective enforcement, best practice should be considered when designing, negotiating and applying the applicable fiscal systems.

Best practice should ensure:

- that a tax administrator be part of the team to test administrative ease and feasibility of execution;
- that examples be included on how to calculate the taxable base as well as taxes due in the relevant legislation or contracts. This should provide clarity to tax administrators and taxpayers on how to implement EI taxation; and
- that alignments exist in definitions and enforcement between various taxes, both federal as well as subnational.

The administrative capability of the Government can be a limiting factor in the options for fiscal regimes. Using multiple systems can cover multiple policy objectives in revenue raising but often put additional strain on limited resources. Coordination and exchange of information between departments and parts of government can assist in improving efficiency and reducing costs related to information gathering and audits.

Improving administrative capability could be addressed by creating a dedicated office/unit within the Tax Administration that focuses on the EI. Sustainable and appropriate resourcing should be ensured when setting up such administration. This would include:

- Appropriate training of staff – audit routines, understanding of EI (e.g. mining cycle, risk areas that can impact revenue);
- Appropriate audit tools and equipment;
- Framework to access third party information on production (e.g. from the ministry of mines, ministry of energy or customs); and
- Sharing of knowledge with other EI countries.

For resourcing and capacity building initiatives, it is important to include other government departments from the start. Capacity building is offered by various international organisations and through exchanges with other country tax authorities. Multi-stakeholder capacity building – involving not only other government officials but also academics and expert business representatives – is not always readily available but can provide valuable information and perspectives. Exchanges with taxpayers that increase capacity can include work on cooperative compliance and other forms of dispute avoidance[16].

More information [more detail to be added]

- Calder, Jack - "Administering fiscal regimes for extractive industries"
- Daniels, Philip et al. edited book "The taxation of Petroleum and Minerals: principles, problems and problems" — Routledge, 2010

[16] E.g. participation in Advanced Pricing Agreements and arbitration processes can support capacity development.

- Daniels, Philip et al. edited book "International Taxation and the Extractive Industries"—Routledge, 2016
- Hogal, Lindsey and Goldsworthy, Brenton "International mineral taxation: experience and issues"
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- Le Leuch, Honore "Recent Trends in Upstream Petroleum Agreements: Policy, Contractual, Fiscal, and Legal Issues" — Handbook of Global Energy Policy 2013
- Nakhle, Carol "Petroleum Fiscal Regimes: evolution and challenges"
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- World Bank Working Paper No 123 "Fiscal Systems for Hydrocarbons" — S Tordo