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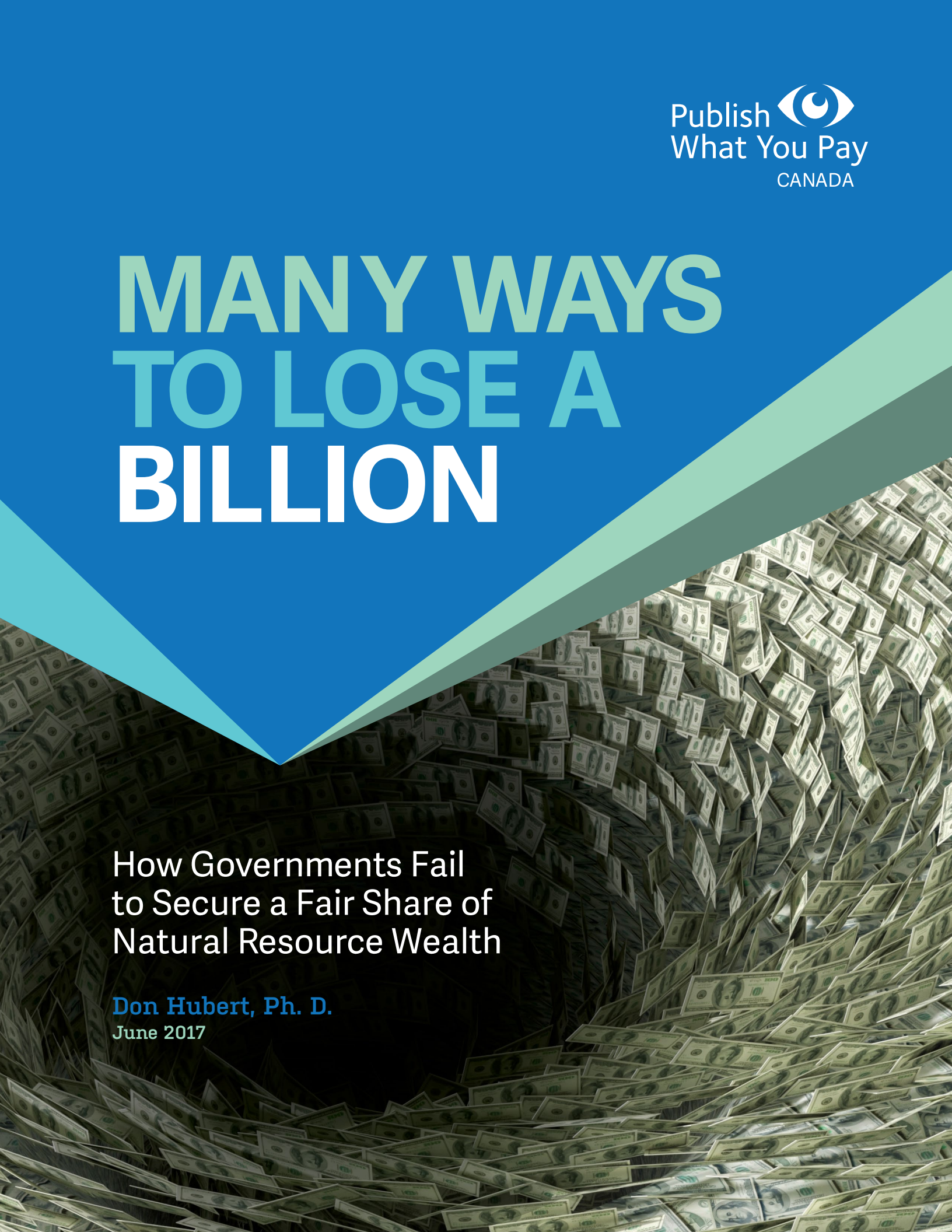
MANY WAYS TO LOSE A BILLION



How Governments Fail to Secure a Fair Share of Natural Resource Wealth

Don Hubert, Ph. D.

June 2017

About **Publish What You Pay** and **Publish What You Pay Canada**

PUBLISH WHAT YOU PAY

Publish What You Pay is the world's leading coalition of civil society organizations united in the call for a more transparent and accountable extractive sector. With more than 800 members, a global secretariat and 40 national coalitions that span the globe, PWYP is committed to working together to ensure that citizens have a say over whether their resources are extracted, how they are extracted and how their revenues are spent.

Publish What You Pay CANADA

Publish What You Pay Canada is the Canadian coalition of the global PWYP network. Since its foundation in 2007, PWYP-Canada has been at the forefront of the national movement for transparency in the Canadian extractive sector, championing and driving forward the passage of legislation that requires that Canadian extractive companies disclose their payments to governments in Canada and across the globe. In addition, the coalition has worked to actively encourage and support the use of Canadian company information in global advocacy efforts.

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RESOURCES for DEVELOPMENT CONSULTING

Don Hubert is the President of **Resources for Development Consulting**, a firm that assists resource-rich developing countries to secure a 'fair share' of extractive sector wealth. The firm draws on a wide range of experts to deliver tailored, project-specific and sector-wide analyses. Services include the design of EI fiscal regimes and contracts, design and delivery of financial and fraud audits, preparation of revenue risk assessments and government revenue projections, and design and delivery of capacity development programs for government officials, parliamentarians and civil society. The firm has conducted detailed economic analyses of petroleum and mining projects in more than a dozen countries for clients that include governments, the World Bank, bilateral donors and non-governmental organizations.

Foreword

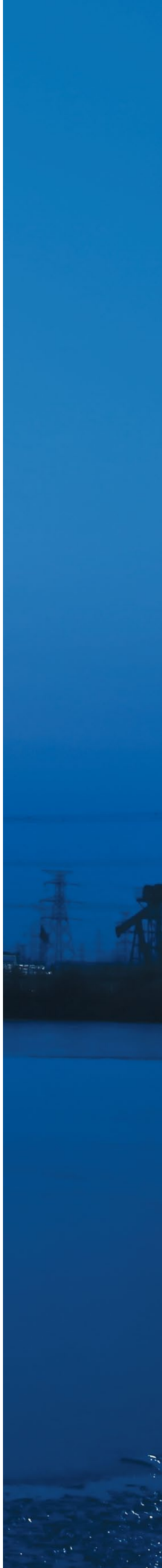
Over the 10 years that I have been involved with the Publish What You Pay (PWYP) global network, the coalition has expanded its reach and the breadth of issues it works on, all while demonstrating a clear ability to affect global change. Our work has been complemented and amplified by other global movements focused on illicit financial flows, tax evasion, corporate accountability and, more recently, open data. Despite persistent challenges, the result of this collective work is an extractive sector that is more transparent and accountable than it was just a decade ago.

With greater transparency, the link between transparency and accountability is being tested. Civil society is challenged to use new disclosures to change government policies, company behaviour and even global systems. Despite many documented successes, the complexity of both global corporate arrangements and the national laws/contracts that govern the extractive sector, pose a serious analytical challenge. As this report shows, companies can employ a wide array of legal and illegal means to reduce their payable taxes and royalties, often in an environment where there is insufficient government oversight.

This report responds to a persistent question: is my government receiving its fair share of revenues from extractive sector projects? While no single report can specify what constitutes a fair share for every resource project, by identifying and illustrating the common pathways to government revenue loss in the extractive sector, this report will help stakeholders pinpoint mechanisms and policies that can safeguard critical revenues. It will equally serve as a tool to enable deeper and more systematic analysis of data on company payments to governments. A need made more pressing as new laws, such as that in Canada, see hundreds of extractive companies report payments to governments around the world every year.

Publish What You Pay has very successfully advocated for new laws and standards that require that mining, oil and gas companies disclose the payments they make to governments. We have equally worked for changes to standards that support contract disclosure and transparency of company ownership, amongst other things. With new data at hand, there is a growing focus on strengthening the mechanisms by which transparency is used for accountability. At the global level, the PWYP network has recognized this challenge and is developing different programs focused on using the data. At the national level within the PWYP global network, there is a plethora of initiatives focused on putting data to use. This report aims to enhance and enable those discussions; to be a critical tool for those analyzing government revenues and fiscal regimes; and to be a platform for more informed discussions about whether governments are receiving their 'fair share.'

Claire Woodside
Director, PWYP-Canada



This report will help stakeholders pinpoint mechanisms and policies that can safeguard critical revenues.

Executive **Summary**

Countries rich in oil, gas and minerals often fail to secure a fair share of their natural resource wealth. Revenue loss from the extractive sector is particularly significant given the large number of countries that depend on natural resource revenues for a substantial portion of their annual budgets. Companies employ a wide range of strategies to minimize their payments to governments. Their efforts to avoid tax are facilitated by weak institutions, inadequate policies and regulations, badly negotiated contracts, and insufficient government monitoring and auditing.

There has been a flurry of activity in recent years, at the international level and at national levels, to combat extractive sector tax avoidance. But much more still needs to be done. Reliable data on the scale of potential revenue loss is not available. However, the experiences of both developed and developing countries suggest that many billions of dollars in government revenue are at stake.

The extraordinary success of the global movement for greater transparency surrounding extractive sector revenues has made it easier to assess whether governments are receiving a fair share from oil, gas and mineral extraction. But for greater transparency to translate into increased extractive sector revenues, the data must be analyzed and that analysis must be used.

There are many mechanisms companies use to reduce their payments to governments, but the pathways are not unlimited. There are clear patterns to how companies reduce payments to governments. Knowing what to look for can help those seeking to conduct more effective data analysis.

This paper sets out a revenue risk assessment framework that maps the main pathways through which governments lose extractive sector revenues (See **Textbox 1**). The framework is based on a comprehensive review of public domain information on risks to government revenue. The main pathways introduced in this report are all illustrated by real-world case studies.

The framework distinguishes between revenue loss due to the *tax rates* applied to an extractive sector project, and revenue loss due to the *tax base* against which those revenues are assessed.

Tax **Rates**

While companies may make many payments to governments, the bulk of government revenue usually comes from only two or three sources, including a production-based tax, often a royalty, alongside profit-based taxes, such as corporate income tax or production entitlements. To promote investment, governments may grant investment incentives or tax holidays, which can significantly reduce government revenues. These fiscal terms are often locked in for the lifespan of the project through stabilization agreements, making them difficult to revise even when they are recognized to be unfair. Best practice suggests avoiding, or at least carefully limiting, stabilization provisions in new contracts. For existing projects, where fundamental circumstances have changed and game-changing revenues are at stake, governments should renegotiate the fiscal terms.

Negotiating the most favourable tax terms possible is not the only way that companies can reduce payments, they can also take advantage of the existing network of Double Taxation Agreements (DTAs) to reduce or even eliminate withholding taxes on dividends and interest payments as well as taxes on capital gains. This is accomplished by creating a shell company in a jurisdiction that has a DTA with the producing country and sending payments through that subsidiary. When negotiating or renegotiating DTAs, governments should ensure that agreements are designed to deny treaty benefits to companies that create mailbox companies in order to engage in "treaty shopping."

Textbox **1:**

Revenue Risk Framework and Case Studies

Risks to Revenues

Tax Rates

TAX BREAKS

Tax Incentives
- Accelerated depreciation

Tax Holidays
- Corporate tax exemptions

TREATY SHOPPING

Withholding Taxes
- Dividend payments
- Interest payments

Capital Gains Tax

Tax Base

UNDER-REPORTED PROJECT REVENUES

Production Volumes
- Under-reporting production
- Non-reporting of by-products

Sale Price
- Intra-firm sales agreements
- Excessive marketing fees
- Forward sales / price hedging

OVER-REPORTED PROJECT COSTS

Ineligible Costs
- Falsified or duplicate invoices

Misallocated Costs

Inflated Goods and Services
- Over-priced used machinery
- Transport (rail, ports, pipelines)
- Management fees

Debt Financing
- Thin capitalization
- Abusive interest rates

Resources for Development Consulting (2016)

Tax **Base**

Where governments believe that they are not receiving a fair share, they often seek to revise the tax rates, such as increasing royalty rates. In many cases, however, the problem is not the tax rates but erosion in the tax base against which the rates are applied. Tax base erosion can lead to revenue loss through two main pathways: under-reporting project revenues and over-reporting project costs. Multinational companies have a strong incentive to shift profit as a result of the differing tax burden between producing countries, home countries and tax havens. Through elaborate networks of subsidiaries, companies shift profits out of highly taxed producing countries to lower tax jurisdictions, while at the same time shifting costs into those same highly taxed producing countries.

There are many ways that companies reduce the project revenue that they report. For example, companies can under-report the quantity or quality of the principal commodity produced or fail to declare valuable by-products. To guard against both practices, it is important that the government independently assesses the quantity and quality of production. Another means by which a company can reduce project revenue is to under-report the market value of the commodity. This can be done by selling at a reduced price to an affiliated company, through the use of forward sales or price hedging, or by inflating the costs of marketing the commodity. Under-reported project revenues affect both production- and profit-based taxes, profoundly impacting government revenues. While efforts can be made to ensure actual sales reflect fair market value, for many commodities it may be more effective to establish a reference price for the calculation of royalty and tax payments.

Inflating costs is the second main way that governments lose revenues through tax base erosion. The main effect of inflated costs is a reduction in profit-based taxes as inflated costs result in a decrease in net (taxable) revenue. Companies can increase costs in several ways: by claiming costs that are ineligible because invoices were falsified, submitted twice, or are explicitly disallowed according to the contract or tax legislation; and by inflating costs in transactions with affiliated companies in order to shift profits to lower-tax (or no-tax) jurisdictions. Transfer mispricing is common in the provision of goods and services, with head office costs and debt financing being areas of particularly widespread abuse. Careful government monitoring, including risk-based audits, are essential to ensure fair payment of profit-based taxes.

Protecting **Government Revenues**

Strengthened tax administration is essential for governments to secure a fair share. In most countries, however, the profound imbalance in expertise between the lawyers and accountants working for the companies and officials working for the government cannot be addressed quickly or easily. A solution may be to build tax administration capacity, while at the same time revisiting contracts and tax laws, not necessarily to change the tax rates, but rather to close tax loopholes and introduce simple, if crude, anti-avoidance measures.

External monitoring can help to maximize government revenues. More data is available in the public domain than ever before. In addition to showing what companies have paid, this data can help answer whether those payments are consistent with contract terms and tax legislation and whether they represent a fair share. However, answering these questions requires comprehensive project-level economic analysis based on production volumes and costs, commodity prices and tax terms.

Applying the risk assessment methodology set out in this report to specific extractive sector projects can assist those seeking to ensure that countries maximize revenues from the sale of their non-renewable resources.

Strengthened tax administration is essential for governments to secure a fair share.

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GLOSSARY

Arm's length transaction: A transaction where the buyer and the seller have no significant prior relationship. As both parties seek to maximize their own interests, the resulting sale price is considered to be an approximation of fair market value.

Base erosion and profit shifting (BEPS): The company practice of moving revenues and costs between different jurisdictions (often through transfer mispricing) to minimize taxation. Also an international process led by the OECD to address government revenue loss.

Capital costs: Costs incurred after a decision has been made to develop a project, including the costs of constructing the site, installing equipment and purchasing machinery (sometimes "capex").

Capital gains tax: A tax on the income gained when a capital asset (or a stake in a capital asset) is sold.

Corporate income tax: A tax assessed as a percentage of the net profits of a company, after deducting allowable expenses (sometimes "CIT").

Cost oil: The portion of oil production that is allocated to the company to reimburse for past and current costs (exploration, development, operating, etc.)

Cost recovery: The process of recouping the costs of producing a commodity, usually established in the fiscal regime.

Accelerated depreciation: A process by which the costs of a capital asset can be deducted in full or in part against revenues accrued over a very short time period. This is a common investment incentive.

Double taxation agreement (DTA): Treaties that seek to avoid the taxation of the same income in both the host and home country.

Fiscal regime: The set of terms, agreements, laws and regulations that together determine how the revenues from extractive projects are shared between company and government.

Fiscal instruments: Policy tools that enable governments to generate revenues, including: bonuses, taxes, royalties, dividends and production entitlement, amongst others (sometimes "fiscal terms").

Gross revenues: Total of all revenues collected from commodity sales (production × sales price) without any deductions for costs or taxes (sometimes "project revenues").

Hedging: The practice of securing the value of future production as a means to insure against price volatility.

Illicit financial flows: The movement of illegally acquired money across borders from smuggling, corruption and tax evasion.

Investment incentives: A range of policy options that governments employ in order to attract investors, including, but not limited to, full or partial deferral of taxes, capital investment credits and accelerated depreciation (sometimes "tax incentives").

Long-term sales agreements: Contracts between two separate or related entities that stipulate the price, or the formula for how the price will be determined, for future sales of a commodity.

Net revenues: Income after expenses, according to the appropriate accounting rules (sometimes "net income" or "profit").

Production sharing: A system where the oil produced ("profit oil") is divided between the oil company and the government after the company has recovered its costs ("cost oil").

Production sharing contract: The principal contract between a government and a private oil company setting terms for oil exploration and future production (sometimes "production sharing agreement").

Profit oil: The portion of oil production that is split between the government and company after cost oil has been deducted and allocated to the company.

Progressive fiscal regime: A set of tax terms that allows the government to capture a larger share of revenues for more profitable projects.

Reference pricing: Establishing a commodity price that is not based on the invoice price but rather on an international benchmark price, often with a formula for discounts or premiums (sometimes "norm" or "benchmark" pricing).

Ring fencing: Establishing an economic perimeter around a project, often at the level of the contract or concession, so that the company cannot offset the income inside the fenced area with losses from other projects outside the fenced area.

Royalty: A fiscal tool commonly applied to resource extraction, often based on the value of the commodity extracted.

Shell company: A corporate entity that serves as a vehicle for business transactions and has no physical office or employees (sometimes "mailbox company").

Stabilization clause: A contractual provision assuring investors (and their lenders) of the durability of the initial terms, particularly related to taxation.

Tax avoidance: The legal practice of seeking to minimize a tax bill by taking advantage of a loophole or exception to the rules, or adopting an unintended interpretation of the tax code.

Tax base: The revenue against which tax rates are applied, or the method of calculation set out in contract or tax laws.

Tax evasion: The illegal non-payment or under-payment of taxes, usually by deliberately making a false declaration or no declaration to tax authorities, declaring less income than actually earned, or overstating deductions (sometimes "tax fraud").

Tax exemptions: The waiving of specific taxes that would normally apply, such as a value-added tax or customs and excise duties.

Tax havens: Jurisdictions that attract economic activity to their territory by applying no or minimal taxes. They are often also secrecy jurisdictions.

Tax holiday: An incentive designed to stimulate investment that reduces or eliminates corporate taxation for a defined period of time.

Thin capitalization: The financing of an extractive sector project through a high level of debt, with financing often provided by an affiliated company at high interest rates.

Transfer mispricing: The abusive manipulation of transfer prices, where affiliated companies transfer goods or services between themselves at non-market prices.

Treaty shopping: The establishment of a legal entity in a specific country in order to obtain the benefits of that country's double taxation treaty.

Windfall tax: An additional tax (e.g. resource rent tax) designed to allow the government to capture a larger share of revenue for highly profitable projects.

Withholding tax: A tax levied on payments to non-residents, often applied to payments to non-resident subcontractors as well as to foreign interest and dividend payments.

Tax exemptions:

The waiving of specific taxes that would normally apply, such as a value-added tax or customs and excise duties.

Introduction

Resource-rich developed and developing countries often fail to secure a fair share of their natural resource wealth. The concern that multinational companies in general are not paying the taxes that they should is hardly surprising. Since the financial crisis there has been outrage in both rich and poor countries that companies from across many sectors are employing ever-more aggressive tax avoidance strategies in order to maximize profits.[1] Revenue loss from the extractive sector, however, is particularly important given the number of countries that depend on natural resource revenues for a substantial portion of their annual budgets.

It is impossible to quantify the scale of extractive sector revenue loss. Research on illicit financial flows in Africa has concluded that the main source of government revenue loss is neither smuggling nor corruption but rather company tax avoidance.[2] The scale of potential loss seems to be in the billions of dollars each year, though there are significant limits to the methodologies being employed.[3]

Concern over tax leakage has resulted in a flurry of international activity in recent years. The Organisation for Economic Co-operation and Development (OECD) launched a major initiative to combat what it terms "base erosion and profit shifting" (BEPS). Several OECD initiatives have been directly focused on extractives, including policy dialogues on natural resource-based development and a dedicated project on mineral pricing.[4] The United Nations (UN) Tax Committee has mobilized around similar issues, with a strong emphasis on the concerns of developing countries in the context of "Financing for Development,"[5] including specific work on the extractive industries.[6] Other developments include a new joint International Monetary Fund (IMF)/World Bank Group initiative on strengthening tax systems in developing countries.

Risks to government extractive sector revenues have also been a prominent part of the Canadian political landscape. There have been Parliamentary hearings on tax evasion,[7] a private member's bill seeking to close tax loopholes,[8] and commitments by the Liberal party to reverse cuts to the Canada Revenue Agency (CRA) and crack down on tax haven abuse.[9] Concerns have been exacerbated due to the commodity downturn and its impact on provincial budgets, particularly in Alberta and Newfoundland. Specific examples have also become part of the public debate, including the CRA's reassessment of Cameco and Silver Wheaton[10] (See **Textbox 2** and **Textbox 7**) and reporting on marginal revenues from the diamond sector in Ontario.[11]

Analyzing Disclosure Data

Great progress has been made over the past 15 years in bringing transparency to what have historically been highly secretive industries.[12] Revenue payment data is now publicly available for nearly 50 countries participating in the Extractive Industries Transparency Initiative (EITI). That data will become even more useful following the decision to require project-by-project reporting for all EITI countries.[13] Long-standing advocacy efforts to require extractive companies to report on their payments to government have taken a step backwards in the United States but are now bearing fruit in the European Union, Norway and Canada. For example, Canada expects over 700 companies to report payments to governments in over 100 countries by the end of 2017.

There is growing concern, however, that we are entering a period with lots of transparency but little accountability. Transparency alone can be a deterrent to corruption. For greater transparency to translate into increased extractive sector revenues the data must be analyzed and that analysis must be used.

The growing volume of available data represents both an opportunity and a challenge. Large volumes of high-quality data make it possible to identify and analyze trends across regions, countries and sectors. At the same time, when seeking to better understand what taxes ought to be paid, and whether the level of this taxation is fair for host countries, it can be hard to know where to start. Looking for revenue loss in the midst of the available disclosure data can be like looking for a needle in a haystack.

There are many potential mechanisms through which companies seek to reduce their payments to governments. But the pathways to revenue loss are not unlimited. There are clear patterns to how companies reduce payments to governments. Knowing what to look for can help those seeking to conduct more effective data analysis. This paper sets out a revenue risk assessment framework, mapping the main pathways through which governments lose extractive sector revenues.[14]

Target **Audience**

This revenue risk assessment framework is designed to be used by government officials who have responsibility for petroleum and mining projects. It is also relevant for those outside government who have a role in strengthening revenue accountability, including parliamentarians, civil society organizations and journalists. Despite progress in recent years to build capacity among these groups to conduct revenue analysis, capacity remains uneven.

Within governments there is frequently a gap between those who understand the sector but are primarily concerned with attracting inwards investment and moving projects forward, and those with mandates for revenue generation who are often excluded from early contract negotiations and sometimes lack the sector expertise necessary to anticipate the full range of revenue-related risks. Defending a government's revenue interests requires both the capacity and willingness to confront companies. The American state of Alaska, for example, has spent hundreds of millions of dollars in litigation in order to recover billions in lost government revenue (See **Textbox 11: Securing the Government Take in Alaska**).[15]

For actors outside of government, there is a tendency to focus on high-profile risks that are easy to analyze and for which data is relatively easily available. The result is often greater attention to royalties (a small, though important, source of government revenue) than corporate income tax (the main source of revenue for many extractive projects).

A comprehensive approach to revenue risk assessment is needed. The full range of pathways to government revenue loss should be considered before deciding which risks are most relevant to a particular sector, company or project.

Despite progress in recent years to build capacity among parliamentarians, civil society organizations and journalists to conduct revenue analysis, capacity remains uneven.

Methodology and Structure

This report is based on a comprehensive review of public domain information on risks to government revenue from the extractive sector.[16] It draws from material on fiscal regime design for the extractive industries,[17] on the challenges of tax administration,[18] and on recent guidance on managing transfer mispricing risk in the mining sector.[19]

The analysis is grounded in the experiences of resource-rich countries and their legal and institutional responses to try to stem revenue loss. Given the scale of the alleged abuses it is perhaps surprising that it is difficult to find clear examples of companies making use of the various pathways to government revenue loss in the public domain. Considerable effort has been devoted, therefore, to identifying real-world case studies to illustrate the specific nature of the risks in a more concrete way.

The analysis is grounded in the experiences of resource-rich countries and their legal and institutional responses to try to stem revenue loss.

Several of the case studies were prepared specifically for this study. Many of the case studies come from Resources for Development Consulting's extensive database of extractive sector tax avoidance cases. Real-world examples are drawn from both petroleum and mining sectors, and from various commodities within those categories. They are also drawn from a broad range of both developed and developing countries, including Australia, Canada, Chile, Indonesia, Mongolia, Mozambique, Sierra Leone, Tanzania, Timor-Leste, Trinidad, Uganda and the United States.

The study begins with a framework chapter that introduces a series of key concepts, including the main fiscal instruments through which governments generate revenue from the extractive industries, the important distinction between tax rates and the tax base against which those rates are applied, and the role of subsidiaries in low-tax jurisdictions in the corporate structures of multinational extractive sector companies. It introduces a four-part framework for analyzing revenue risks: two related to tax rates (contract terms and treaty shopping) and two related to the tax base (under-reporting revenues and over-reporting costs). The remainder of the report comprises sections examining each of these four risks in detail.

2

A Framework for Assessing Revenue Risks

Securing a fair share of government revenue from extractive sector projects is a two-step process: establishing a fair tax *rate* for the project at the outset, and then protecting the tax *base* over the lifespan of the operation. Shortcomings on either front can result in significant loss of government revenue.[20]

Building on the basic distinction between tax rates and the tax base, the table below provides a framework for considering the various ways in which extractive sector revenue can be lost (See **Textbox 1: Revenue Risk Framework and Case Studies**).

Textbox 1:

Revenue Risk Framework and Case Studies

		Risks to Revenues	Examples
Tax Rates	TAX BREAKS	**Tax Incentives** • Accelerated depreciation **Tax Holidays** • Corporate tax exemptions	**Peru Mining:** Accelerated depreciation **Mali Mining:** Corporate tax exemptions
Tax Rates	TREATY SHOPPING	**Withholding Taxes** • Dividend payments • Interest payments **Capital Gains Tax**	**Turquoise Hill** (Mongolia / Netherlands) **Heritage Oil** (Uganda / Mauritius)
Tax Base	UNDER-REPORTED PROJECT REVENUES	**Production Volumes** • Under-reporting production • Non-reporting of by-products	**Congo Brazzaville:** Diamond smuggling **Chile:** Tax avoidance on tailings production
Tax Base	UNDER-REPORTED PROJECT REVENUES	**Sale Price** • Intra-firm sales agreements • Excessive marketing fees • Forward sales / price hedging	**Uranium Sales:** Cameco (Canada) **Natural Gas:** Mozambique South Africa **Iron Ore Sales:** Sierra Leone **Marketing Hubs:** Australia / Singapore
Tax Base	OVER-REPORTED PROJECT COSTS	**Ineligible Costs** • Falsified or duplicate invoices **Misallocated Costs** **Inflated Goods and Services** • Over-priced used machinery • Transport (rail, ports, pipelines) • Management fees	**Chile Mining Company:** False invoices **Indonesia:** Cost recovery abandoned due to abuse **Timor-Leste:** Cost claims against producing block **Alaska:** Inflated pipeline and shipping costs **Tanzania:** Inflated costs in the mining sector
Tax Base	OVER-REPORTED PROJECT COSTS	**Debt Financing** • Thin capitalization • Abusive interest rates	**Chile:** Mining company debt financing **Chevron Australia:** Financing costs disallowed

Resources for Development Consulting (2016)

Establishing the **Tax Rate**

Once the contract is signed establishing the basic tax rate, it is difficult for governments to make changes.

The tax terms that should determine the proportion of extractive sector project revenue allocated to the government are normally set out in both project-specific contracts (host country agreements) as well as national tax and investment laws and regulations. The sources of government revenue from extractive sector projects are often different than for normal businesses. In the mining sector, the mix of fiscal instruments commonly includes royalty payments and corporate income tax (and increasingly a windfall or "resource rent" tax), while in the petroleum sector a production sharing system is common, sometimes in combination with a royalty payment and/or corporate income tax.

There are often concerns that governments have negotiated bad deals that will see the bulk of project profits go to foreign companies. In some cases these deals appear to be the result of corruption, but in many cases they are likely the result of the profound asymmetry of expertise between multinational companies and relatively inexperienced government officials.

It is common for governments to offer investment incentives or tax holidays in order to encourage companies to explore and produce. In some cases tax holidays reduce or even eliminate corporate income tax. Once the contract is signed establishing the basic tax rate, it is difficult for governments to make changes. Extractive sector contracts normally contain stabilization clauses that provide protection for the investor from changes to the fiscal terms.

Companies often seek to expand the set of tax breaks that apply to their project by taking advantage of double taxation agreements through a process known as treaty shopping. By creating subsidiaries in jurisdictions like the Netherlands or Mauritius, companies can reduce or even eliminate a range of taxes, including withholding taxes on the repatriation of interest and dividend payments, management fees and capital gains on the sale of resource rights.

Defending the **Tax Base**

The tax rate described above determines the categories of tax and the corresponding percentages that should be paid to the government. These so-called "headline terms" tend to attract the bulk of the attention in comparisons of fiscal regimes. For example, an analysis of mining taxes commonly compares royalty rates in percentage terms. While headline tax terms are important, it is at least as important to evaluate the tax base against which those rates will be applied. For example, a five percent royalty only becomes meaningful when applied against the value of actual commodity sales. Similarly, a 30 percent corporate income tax only becomes meaningful when applied against company net (after-cost) income.

There are two basic paths through which the tax base can be eroded. First, gross revenues can be under-reported. This can be done either by reporting less production than has actually taken place or by reporting a sale price below the fair market value. The second path to tax base erosion is the inflation of project costs. Because the bulk of government revenue normally comes from profit-based taxes – that is taxes that are assessed on net (after-cost) income – inflated costs can significantly reduce the tax base.

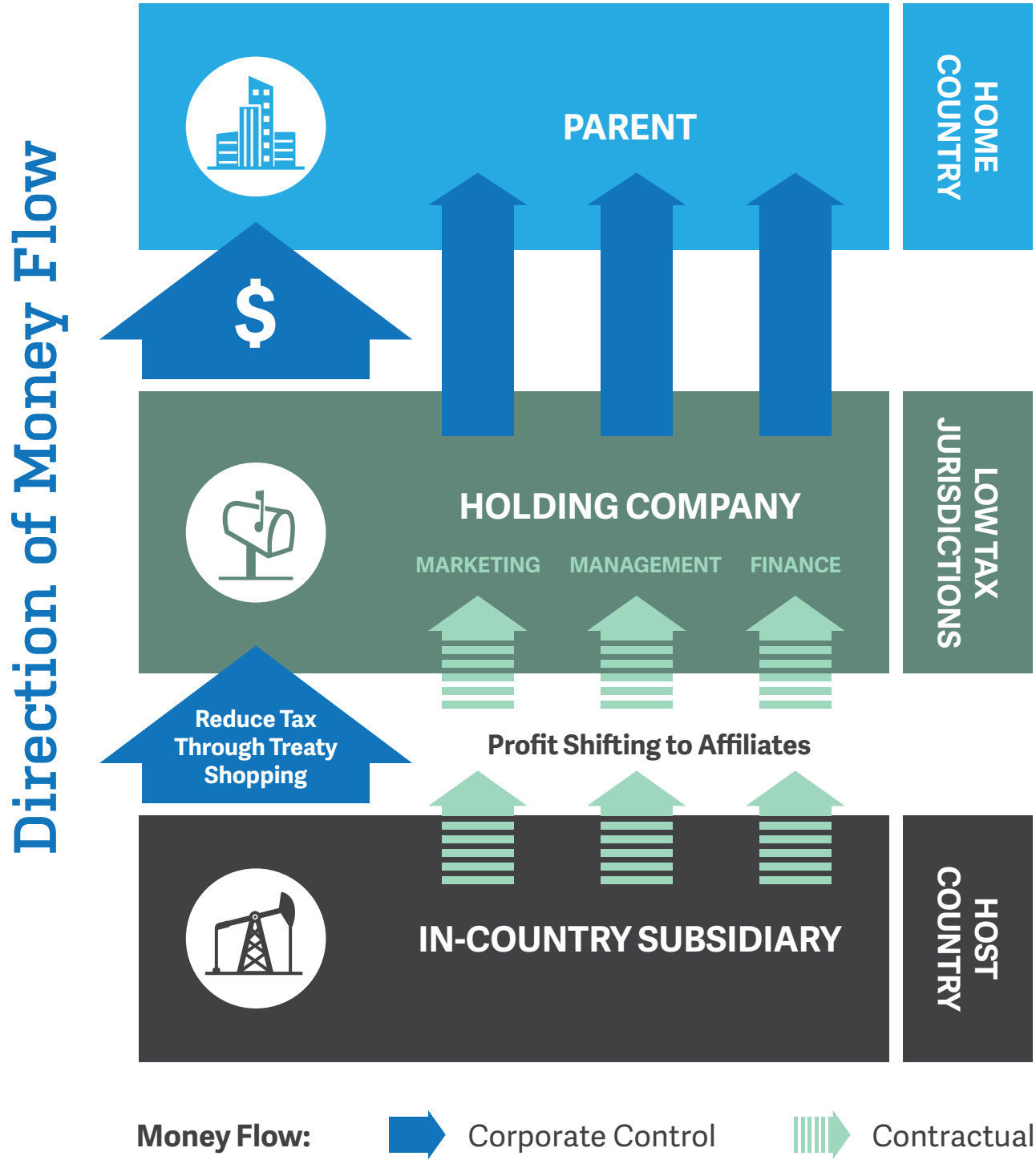
Protecting the tax base is challenging given the relatively high effective tax rate in the extractive sector.[21] The overall tax take in producing countries is normally much higher for parent companies incorporated in OECD jurisdictions where the main tax liability would be corporate income tax, with rates often around 25 to 30 percent, than those in tax havens, where income taxes are extremely low or waived entirely.

The difference between the tax rates in different jurisdictions creates major incentives for companies to minimize the tax base by both shifting profits out of high tax jurisdictions and shifting costs into high tax jurisdictions. By doing this, companies minimize the tax payments that they will be required to make in either home or host countries, while maximizing the profits shifted to zero or low-tax jurisdictions.

The ability to move revenues and costs between jurisdictions is based on the complex corporate structures adopted by multinational corporations.[22] As shown in Figure 1, parent companies often use conduit companies – subsidiaries incorporated in tax havens or other low tax jurisdictions[23] (See **Textbox 2: Silver Wheaton Repatriates Unreported Income from Cayman Subsidiary**[24]). The parent company may have affiliates that are involved in purchasing commodities, providing contractor services, and/or providing management services and financing.

Figure **1:**

Using Subsidiaries to Reduce Taxes



Textbox **2:**

Silver Wheaton Repatriates Unreported Income from Cayman Subsidiary[24]

Silver Wheaton Corporation is a precious metal streaming company incorporated in Ontario, headquartered in Vancouver and listed on the Toronto Stock Exchange and the New York Stock Exchange. The company provides financing to mining companies in return for future delivery of silver and gold production at pre-established prices: a process known as "streaming." Financing and purchase/sale of the streams is undertaken through the wholly owned subsidiary Silver Wheaton (Caymans) Ltd.

Silver Wheaton (Caymans) Ltd. pays no corporate income tax in the Cayman Islands. Silver Wheaton took the position that this subsidiary was a separate entity and that income generated in the Cayman Islands need not be reported in Canada, even though company executives and most employees were in Canada and all major corporate decisions were made in Canada.

In September 2015, the CRA did a 2005-2010 reassessment based on transfer pricing regulations, indicating "the income of Silver Wheaton subject to tax in Canada should be increased to *substantially all of the income earned outside of Canada by the Company's foreign subsidiaries.*" Unreported income of $715 million CAD would result in a $207 million CAD tax bill, combined with a $72 million CAD transfer-pricing penalty and $80 million in interest and other penalties. The company is appealing. CRA audits continue for 2011-2013 and are likely for 2014-15. It is expected that reassessments for these years could amount to $416 million CAD.

3

Tax Breaks and Government Revenue

In some countries, natural resource extraction is undertaken by state-owned enterprises. In most countries, however, private companies are involved either as partners with state-owned companies or acting independently. The challenge for governments is how to ensure that they maximize government revenue even while encouraging inward investment by private companies.

Taxing the **Extractive Sector**

The fiscal regime or framework determines both the government's share of the revenue and the timelines for revenue coming on stream (See **Textbox 3: Benchmarks for Assessing a "Good Deal"**). This framework is set out either in national legislation, or more commonly in project-specific contracts. Fiscal frameworks evolve over time, but normally the terms agreed at the outset govern the project through its full lifecycle. There are many similarities, but also important differences, between government revenue generation in the mineral and petroleum sectors.[25]

The extractive industries are fundamentally different than other sectors of the economy due to the scale of upfront investment required (frequently measured in the billions of dollars), the timelines of the projects (often 25 years or more) and the potential for super-profits when commodity prices spike. As a result, taxation of the extractive industries is also different from other sectors of the economy.

First, it is common for countries to offer exemptions from some taxes, including value-added taxes, customs duties and excise taxes. Second, it is common for countries to supplement the standard corporate income tax with resource-specific taxes, including royalties and windfall (resource rent) taxes. Some countries use a royalty tax system for both the mining and petroleum sectors, but many countries have chosen to use a production sharing system for their petroleum sectors.

Production-based taxes: Production taxes or royalties are payments based on the quantity of the resources extracted.[26] There are several different ways in which royalties are assessed, including the volume of the commodity produced (e.g. a price per ton) and the value of production (e.g. a percentage of the market price). In some cases, the royalty rate is linked to the price of the commodity. Some countries also use profit-based royalties, though they function more like an additional corporate income tax. In most cases, the royalty is paid from the time that commercial production begins. Traditionally, production taxes were seen as compensation for the depletion of a non-renewable asset. Royalties are now more commonly seen as a political necessity, guaranteeing at least some government revenue in the early years of production before income tax payments begin.

Profit-based taxes: Income taxes are "profit-based," meaning they are assessed on project income after deducting project costs. The percentage at which the rate is assessed may be less important than the rules governing the calculation of the income against which it will be applied. Income tax should represent the majority of the government take over the lifetime of a mine, but may be delayed as companies recover the costs of their investments.[27] Increasingly, countries are putting in place "resource-rent taxes" that complement basic income tax by applying a higher percentage tax to windfall profits.

Petroleum production sharing: The production sharing system, first developed by Indonesia in the 1960s, has become the most common approach to petroleum development amongst developing countries. As the name suggest, the main source of government revenue is a share of the petroleum produced. It is based on a two-step process. First, production is allocated to the company for the recovery of costs. Second, the remaining production is split between the company and the government, normally on the basis of a sliding scale responding to volumes of production or profitability. As the government's share comes after costs have been recovered, it functions somewhat like a profit-based tax.[28] Many governments have supplemented the production sharing system with a royalty and corporate income tax.

Royalties are now more commonly seen as a political necessity, guaranteeing at least some government revenue in the early years of production before income tax payments begin.

Textbox 3:

Benchmarks for Assessing a "Good Deal"

Four benchmarks provide a useful starting point for assessing whether a government negotiated a good deal in return for the depletion of its non-renewable resources.

Take: The government take is the share of divisible (after-cost) revenue allocated to the government over the life cycle of the project.

Timing: As companies can normally recover their investments quickly, the bulk of government revenue comes later in the project life cycle. Fiscal regimes that are "rear loaded" may generate little government revenue for five to 10 years.

Progressivity: The government's share of net benefits should increase for more profitable projects. Adding some kind of "windfall" tax can make the overall fiscal regime "progressive." As many fiscal regimes do not have a progressive tax, the government would not capture a higher share when commodity prices skyrocket, when the grade is particularly high, or when production costs are particularly low.

Administration: Fiscal regimes are often designed to be economically efficient – finding an ideal balance between investor and government interests – with little attention given to their application in practice. From the outset, fiscal regimes should be developed to minimize vulnerability to company tax avoidance strategies and to work within the capacity of government tax authorities.

When considering whether the government is securing a fair share of extractive sector wealth, the initial focus is on the fiscal terms negotiated for the project. In some cases, the lack of government revenue from profitable projects has nothing to do with company tax avoidance. It is the result of generous contractual terms and investment incentives.

Tax holidays are an obvious example. During the 1990s, particularly in Africa, it was common for governments to reduce or even waive the application of corporate income tax for a defined period from the start of the project. There are many cases that could be cited. In Mali, for example, contracts signed in the 1990s commonly included a provision indicating that no corporate income tax (the main source of government revenue) would be paid for the first five years.[29] The IMF has repeatedly warned that tax competition was resulting in a "race to the bottom."[30] Tax holidays obviously reduce government revenue. They also create incentives for companies to exploit the resource quickly but inefficiently (a process known as high grading) and can complicate tax administration where multiple projects have differing tax rates applying over different periods.

Revenue Risks in **Extractive Contracts**

Textbox **4:** **Accelerated Depreciation in Peru**[31]

In Peru, little income tax was paid by the mining sector throughout the 1990s. By the end of the 1990s combined income taxes from mining were less than $100 million per year, amounting to about seven percent of government revenues. As the benefits to companies from accelerated depreciation gradually declined, and as metal prices increased, government revenues rose substantially. Between 2000 and 2006, the annual income tax revenue from mining companies rose from $70 million to $1.8 billion, accounting for more than 40 percent of total government revenue.

How quickly companies are allowed to recover their capital costs is another investment incentive that can have a significant impact on the timing of government revenue.

Normally, for tax purposes, capital costs are "depreciated." This means that only a portion of the initial capital costs can be claimed in the calculation of taxable income in any single year. Extractive sector projects, however, are known to be particularly capital intensive. Given the scale of the upfront costs, it is normal for companies to be allowed to recoup these costs rapidly. This provision is known as "accelerated depreciation." Due to accelerated depreciation, it is not uncommon for companies to pay no income tax at all during the first five to 10 years of production, even when projects are very profitable (See **Textbox 4: Accelerated Depreciation in Peru**[31]).

While depreciation terms should be more generous for extractive sector projects, in a number of cases countries place no restrictions at all on the timeframe for claiming capital expenses.[32] Accelerated depreciation delays the onset of profit-based taxes early in the project lifecycle. It can also reduce or even eliminate profit-based tax payments immediately following large capital investments during project expansion, resulting in a short-term collapse of government revenues.[33]

Tax Planning, Avoidance or Evasion?

Tax planning reduces taxes in ways that are consistent with the letter and spirit of the law.

Tax avoidance, sometimes referred to as **aggressive tax planning**, reduces taxes in ways that are inconsistent with the overall spirit of the law. Tax avoidance is based on activities undertaken before the occurrence of a tax liability.

Tax evasion is a criminal act and can also be called **tax fraud**. It often involves making a false declaration to tax authorities declaring less income than actually earned, or overstating deductions. Tax evasion is based on activities undertaken after a tax liability has arisen.

As the defining line between avoidance and evasion is often unclear, this report uses the general term tax avoidance to cover the range of practices that fall outside the spirit of the law, including those that are illegal.

Negotiation and Renegotiation

Significant efforts are being made to strengthen the capacity of government negotiators, including the development of draft contract language (e.g. the International Bar Association's Model Mining Development Agreement[34]) and the provision of direct negotiation support (e.g. African Legal Support Facility or the World Bank's Extractive Industries Technical Advisory Facility). Recognizing that it is hard to anticipate all eventualities, it is also prudent to write time-bound review provisions into contracts.

Extractive sector contracts commonly contain stabilization provisions stating that the basic economic position of the company, as set out in the original contract, should be retained. International best practice suggests avoiding, or at least significantly limiting, stabilization provisions. Too often in the past, stabilization has provided one-way benefits. Companies have secured guarantees that their economic position will not be undermined while at the same time ensuring that they can benefit from any future changes. If stabilization is to be included, it should apply to only specific fiscal terms and should be time-bound. In some countries, stabilization is offered only in return for an increase in royalty or income tax rates.

Where broad stabilization clauses exist, there is strong pressure on governments to respect the sanctity of the original terms, not only from companies but also from international actors such as the World Bank and the IMF. Nevertheless, when circumstances fundamentally change renegotiation is not only reasonable, it may be unavoidable. In fact, as oil prices rose through the 2000s, many petroleum-producing countries in both the developed and developing world renegotiated their contracts.[35] When managed badly, renegotiation can undermine credibility and make future investors wary. Conversely, for projects that offer potentially game-changing government revenues, the risks of maintaining overly generous contracts could well exceed the risks of over-riding stabilization provisions.[36]

Recognizing that it is hard to anticipate all eventualities, it is prudent to write time-bound review provisions into contracts.

4

Treaty Shopping to Expand Tax Exemptions

Some taxes that would apply to an extractive sector project can be minimized or even eliminated in cases where double taxation agreements (DTAs) apply. These bilateral treaties have been put in place over past decades in order for companies to avoid being taxed twice on the same income – once in the country where the income is earned and again in their "home" jurisdiction.[37] Increasingly, however, there is concern that treaties designed to avoid double taxation are resulting in companies paying little or no tax.

Countries sign DTAs in the hope that offering tax concessions to specific trading partners will encourage greater foreign direct investment. Common provisions in DTAs include reductions or exemptions in both withholding taxes and capital gains taxes. Withholding taxes are imposed when funds are transferred from a resident company to a non-resident company. Examples can include a withholding tax on management fees and interest and dividend payments. In addition to being a source of government revenue, withholding taxes can also reduce the incentive for some forms of profit shifting. Capital gains taxes are sometimes imposed when rights to a project, or a stake in a project, are sold. DTAs also normally contain provisions on the exchange of tax information.[38]

Whether a country benefits from a DTA depends on whether it generates sufficient additional Foreign Direct Investment (FDI) inflows to offset the revenue loss due to these reductions and exemptions. Developing countries have commonly entered into DTAs without careful analysis, often more as a political gesture than a matter of careful tax policy.[39]

Revenue Loss From Treaty Shopping

Multinational corporations frequently create "conduit" or "mailbox" companies in a specific jurisdiction in order to obtain treaty benefits that would not be available directly – a practice known as "treaty shopping." In the absence of restrictions, "a treaty with one country becomes a treaty with the rest of the world."[40]

The Netherlands, home of the world's first corporation (the Dutch East India Company) is a highly attractive location for multinationals to establish subsidiaries. Having concluded tax treaties with more than 90 countries, routing money through a subsidiary in the Netherlands allows companies to minimize withholding taxes on interest and dividends.[41]

The Netherlands' role in corporate tax avoidance strategies has attracted significant attention in recent years. Mongolia and Malawi have both cancelled tax treaties with the Netherlands due to concerns over lost revenue from mining projects (See **Textbox 5: Mongolia Mining Revenues at Risk in the Netherlands**[42]).

Research has illustrated the widespread existence of mailbox subsidiaries in the Netherlands. It has also revealed how the way in which Taxation Treaty benefits are exploited works at cross-purposes to Dutch support for international development.[43] In 2016, Oxfam Novib published a report asserting that the Netherlands should be classified as a tax haven.[44] In response to external pressure, the Dutch government initiated a review of its DTAs with 23 developing countries.[45] As of June 2016, the Ministry of Finance reports that anti-abuse measures have been inserted into treaties with nine countries, with negotiations currently underway in another 11.[46]

Mauritius is another common country of concern, often for investments in Africa, as they have 16 tax treaties with African countries. Deloitte, for example, has provided detailed advice to investors on how to use Mauritius to minimize tax payments.[47]

Some governments are now clearly alert to the risks. Indonesia cancelled a DTA with Mauritius in 2004 over allegations of treaty shopping and India is currently in the process of renegotiating its tax treaty with Mauritius. The government of Uganda denied treaty benefits to Heritage Oil, for example, when it tried to use Mauritius to dodge a major capital gains tax bill following their sale of oil rights (See **Textbox 6: Heritage Creates Mauritius Subsidiary in Attempt to Avoid Ugandan Tax**[48]). Other countries, however, may not have fully assessed the potential risks. Tax Justice Network Africa, for instance, is currently fighting to stop a proposed DTA between Mauritius and Kenya.[49]

Textbox 5:

Mongolia Mining Revenues at Risk in the Netherlands[42]

In 2012, Mongolia's Ministry of Finance conducted research into Mongolia's DTAs, comparing the benefits offered with the DTAs of peer countries such as the Philippines and Ghana. One prominent conclusion, supported by the IMF, was that Mongolia could lose billions of dollars in potential mining revenue due to a DTA signed in 2002 with the Netherlands. Under this treaty, if a Dutch company invests in Mongolia it is entitled to pay dividends back to the Netherlands free of the normal 20 percent Mongolian withholding tax.

The focus of the analysis was a company called Turquoise Hill Resources, which developed the Oyu Tolgoi mine, the country's largest mining project. Although the parent company is Canadian, it has a subsidiary in the Netherlands (Oyu Tolgoi Netherlands BV) that allowed it to benefit from the Netherlands' DTA with Mongolia. While Turquoise Hill was the focus of the study, it was not alone. According to the Mongolian authorities, almost 70 percent of all foreign direct investment was coming through the Netherlands, and thus utilizing the DTA Mongolia signed with the Netherlands as a tax shield.

In November 2012, Mongolia terminated the DTA with the Netherlands effective 1 January 2014. Ultimately, however, ending the agreement with the Netherlands will not impact Turquoise Hill or the Oyu Tolgoi mine. A stabilization clause in the 2009 contract means that the tax terms in place when the contract was signed, including the provisions of DTAs, will remain in place for 30 years.

Stopping Treaty Shopping

The nature of the abuse seems obvious: companies create subsidiaries with the sole intent of securing treaty benefits that would otherwise be unavailable to them. However, denying treaty benefits even where the tax avoidance rationale is transparent has proven to be difficult. Uganda ultimately succeeded in securing a capital gains tax payment from Heritage Oil (See **Textbox 6: Heritage Creates Mauritius Subsidiary in Attempt to Avoid Ugandan Tax**) but there are relatively few examples where countries contest treaty shopping and, of those, many are lost in court.[50] For example, the Indian Supreme Court, in a case where OECD companies were using mailbox subsidiaries to benefit from the India-Mauritius DTA, ruled that treaty shopping was lawful in the absence of a specific anti-abuse provision.[51]

Canada is another good example of the challenges of successfully denying treaty benefits. The CRA has lost several cases, even though the evidence clearly demonstrates that the conduit company has been created with the sole purpose of securing tax reductions through treaty benefits.[52] Canadian courts have indicated that treaty shopping to minimize tax, on its own, is not illegal.[53]

Trinidad and Tobago provides a clear example of the challenges of treaty shopping for a resource rich country. Petroleum companies producing in Trinidad and Tobago with headquarters in the United States and Canada have established subsidiaries in neighbouring countries covered by the Caribbean Community (CARICOM) Tax Treaty (e.g. Barbados, Saint Kitts and Nevis), thereby avoiding withholding tax on both dividends and interest. As a result, Trinidad loses an estimated $200 million per year. The government has been fighting these exemptions in the courts since 2005 without any successful resolution.[54]

The OECD initiative on base erosion and profit shifting (BEPS) recognized the abuse of DTAs as a significant source of lost government revenue. It suggested the adoption of a "principal purpose test" where "the benefits of a double taxation convention should not be available where a main purpose for entering into certain transactions or arrangements was to secure a more favourable tax position."[55]

The principal purpose test has been adopted by the Netherlands in its DTA renegotiations. Revised treaties negotiated with Malawi and Zambia, for example, state that "No relief shall be available under this Article if it was *the main purpose or one of the main purposes* [...] to take advantage of this Article."[56] It remains to be seen, however, whether this "principal purpose" test would deny treaty benefits to extractive sector companies that will undoubtedly argue that their Dutch subsidiaries were created for reasons other than to minimize withholding taxes.

Denying treaty benefits even where the tax avoidance rationale is transparent has proven to be difficult.

Textbox **6:**

Heritage Creates Mauritius Subsidiary in Attempt to Avoid Ugandan Tax[48]

Heritage Oil Corporation was a Canadian corporation (Alberta) that managed its global operations through subsidiaries in Barbados and the Bahamas. In 2008 the company listed on the London Stock Exchange while retaining a secondary listing on the TSX. That same year, it moved its corporate headquarters from Calgary to the tax haven of Jersey.

On 27 July 2010, Heritage completed the sale of its stake in Uganda's Lake Albert fields to Tullow Uganda Limited (Isle of Man) for $1.45 billion. During the negotiations in advance of the sale, Heritage was worried about the imposition of a 30 percent capital gains tax on the transaction. Documents leaked as part of the Panama Papers reveal that in addition to pressing the government not to impose the tax, the company re-domiciled from the tax haven of the Bahamas that did not have a double taxation treaty with Uganda, to the tax haven of Mauritius, which did. Heritage Oil and Gas Limited was incorporated in Mauritius on 15 March 2010.

The Government of Uganda imposed a $404 million capital gains tax on the sale and required Heritage to deposit 30 percent of that upfront. A series of legal battles followed. Heritage initially offered to pay $36 million that they later increased to $120 million. The Ugandan Tax Appeals Tribunal rejected Heritage's claim that the double taxation treaty with Mauritius should shield them from the capital gains tax. In the meantime, Tullow was forced to pay the remaining tax owing in order to move the project forward. It then successfully sued Heritage in London to recover the funds.

Under-Reporting Project Revenue

When assessing the fiscal terms that govern extractive projects, there is a common tendency to focus on the main fiscal terms: the percentage rates for the payment of royalties and income tax, or the government's share of post-cost production. This is particularly the case in countries where there is a widespread belief that the government is not reaping adequate rewards in the face of the depletion of their non-renewable assets. In such circumstances, there is often a call to redesign the fiscal system and even renegotiate the terms of existing contracts. A good example of this is the series of fiscal changes in Zambia that have been implemented, and subsequently revoked.[57] However, in many cases where government revenues are not meeting expectations, the reason is not the percentage rates associated with the main fiscal terms but rather the tax base against which those rates are applied.

The starting point in protecting the tax base is to ensure accurate reporting of the components that comprise overall project revenue: the quantity and quality of the commodity produced and the resulting market value. Under-reporting gross project revenue results in a reduction of all the main government revenue streams. Production-based taxes such as royalties are reduced, where they are a percentage of the sale value. Profit-based taxes – including corporate income tax, resource rent taxes and petroleum production sharing – are reduced because taxable income falls while costs remain unchanged (See **Annex 1**).

Under-Reporting **the Quantity and Quality** of Production

Any assessment of the tax base must start with the volume of resources actually produced. This is more difficult than it sounds.

Alluvial production, including gemstones and gold, is vulnerable to under-reporting, particularly in the artisanal and small-scale mining sectors. In many cases these commodities are simply smuggled out of the country, resulting in no reported income at all. In the early 2000s, for example, Congo-Brazzaville was a significant exporter of diamonds. According to the Democratic Republic of Congo (DRC), most of the diamonds came from the DRC and were being smuggled into neighbouring Congo-Brazzaville in order to take advantage of lower export taxes (two percent versus three percent in the surrounding countries). More importantly, Brazzaville made no effort to accurately value the diamonds, allowing the export tax to be imposed on a fraction of their true value. A Kimberley Process review mission concluded that Brazzaville produced few, if any, of its own diamonds, and the country was temporarily excluded from the certification scheme. The following year, DRC diamond exports increased by more than 65 percent.[58]

Even in large-scale production, there is a risk that production volumes are not accurately reported. For example, a recent report by the OECD on risks associated with assessing the value of mineral production notes that "companies may engage in straight tax evasion by misreporting the value of product shipments they are making."[59] One particular area of concern is the non-reporting of valuable mineral by-products. Copper concentrate, for example, commonly contains gold, silver, nickel and cobalt that are separated at the smelting stage. To illustrate the potential revenue risk, the OECD report offers a scenario of a copper-producing developing country exporting $1.9 billion copper concentrate, including $120 million in gold. In this specific scenario, undervaluing the copper by 10 percent and failing to report the gold contained in the concentrate results in the loss of around $40 million in annual government revenue.[60]

Determination of the volume of petroleum produced is easier than for most minerals as the methodologies for measurement are widely accepted. Nevertheless, careful government monitoring is essential. The Norwegian government, for example, employs five individuals to ensure the accurate metering of petroleum production and export. The Norwegian Petroleum Directorate notes "even small deviations in the volume of production can have a significant impact on government revenues." In their example, an error of just 0.35 percent at one of their metering stations would amount to a loss of four million NOK (US$660,000).[61] In the United States, the Government Accountability Office noted that while oil and gas produced from federal leases generated over $6.5 billion in government revenue, the "Department of the Interior's measurement regulations and policies do not provide reasonable assurance that oil and gas are accurately measured."[62]

Ensuring fair taxation depends not only on tracking the volumes produced, but also that they are applied against each relevant fiscal instrument. Chile, for example, imposes a special mining tax (IEAM) on the sale value of the minerals produced after deducting direct costs and expenses. Some companies were paying this tax only on minerals extracted from the mine itself, but not on minerals produced from old tailings. The discrepancy was uncovered during an audit. The companies defended their position, claiming that the IEAM applied only to new production. The tax authority, however, claimed that the mining code was clear that "extraction" applied to production from the tailings as well, a position ultimately accepted by the country's Supreme Court.[63]

The solution to protecting government revenues from under-reporting of production is effective monitoring of both the quantity and quality of the natural resources extracted and exported. Although this may seem obvious, in many jurisdictions reporting on production is based on self-assessment and there is little government oversight. Tanzania only began tracking the quantity and quality of mineral production with the creation of the Tanzania Mineral Audit Agency, while Zambia has recently launched a project to independently monitor copper production.[64]

Any assessment of the tax base must start with the volume of resources actually produced.

Under-Reporting **the Market Value** of Production

Even where the quantity and quality of production is accurately reported, under-reporting sale value can erode the tax base. There are many ways in which the value of the commodity can be under-reported, most of which involve selling the commodity to an affiliated company involved in trading, marketing or processing.

Long-term sales agreements provide a degree of revenue predictability and are often necessary to secure project financing. However, they also present significant risks to government revenues. In some cases, they may allow for generous deductions. In other cases, they may contain formulas for setting the price that fall well below the market value.

The risk that minerals are being undervalued was raised repeatedly by mineral exporting countries and Civil Society Organizations (CSOs) as part of the OECD BEPS initiative.[65]

According to a recent OECD report, "One relatively straightforward form of base erosion is for MNEs [multinational enterprises] to sell mineral products to a related entity abroad at prices below equivalent sales to unrelated parties, thereby moving sales revenue and profits offshore, to take advantage of lower tax rates abroad."[66] For example, Cameco, a Canadian uranium mining company, signed a long-term sales agreement with an affiliated company based in a low-tax canton in Switzerland, significantly reducing its tax liabilities in Canada (**Textbox 7: Cameco Sells Cheap Uranium to Swiss Subsidiary**[67]).

Textbox **7:**

Cameco Sells Cheap Uranium to Swiss Subsidiary[67]

Cameco Corporation (TSX) produces almost 20 percent of the world's uranium from mines in Saskatchewan, the US and Kazakhstan.

In 1999, Cameco established a subsidiary (Cameco Europe Limited) in the low-tax canton of Zug, Switzerland (effective tax rate of 10 percent, compared with 27 percent in Canada). Cameco then signed a contract with its Swiss subsidiary to purchase Canadian uranium at a fixed price for 17 years. The price is confidential but spot prices were US$10/lb in 1999, US$140 in 2007 and around US$40 in 2016.

The Canada Revenue Agency began reassessing Cameco in 2008 based on transfer pricing violations. They argue that the Swiss subsidiary existed only to avoid Canadian tax (it has a Board of Directors and CEO, but no employees and no office in Zug) and that no independent company would have signed such an unfavourable agreement.

The revised tax bill for 2003-2009 is reported to be $820 million CAD. Audits continue for 2010-2015 and the total tax liability could be as high as $2.2 billion CAD. Court proceedings began in early 2017.

Long-term sales agreements, particularly between affiliated companies, appear to be a feature of all commodities in both the petroleum and mining sectors. The scale of potential revenue loss, however, seems to be greater for some commodities, particularly those that do not have clear international market prices. Natural gas, for example, is hard to transport from source to market and must be transported via pipeline or liquefaction (Liquefied Natural Gas). The scale of the required capital investments means that the gas is normally sold through long-term sales agreements. A lack of attention to the terms of these agreements can cost governments billions of dollars (See **Textbox 8: Natural Gas Sales Agreements and Government Revenue Loss**[68]).

Sales agreements can also involve explicit discounts for investors. In Sierra Leone, for example, an investor discount on the sale of iron ore resulted in reduced royalty and tax payments (See **Textbox 9: Sierra Leone Iron Sold at Discount to Affiliated Company**[69]).

Larger extractive companies frequently have subsidiaries dedicated to the trading and marketing of the commodities that they produce. These subsidiaries, often created in low-tax jurisdictions, represent a significant risk for transfer mispricing. First, there is a risk that the sale price between affiliated companies does not reflect the true market value. Second, it is often difficult for producing countries to evaluate what are legitimate versus illegitimate costs involved in marketing and trading.

Some countries have taken action to minimize the revenue loss due to profit shifting through marketing hubs (See **Textbox 10: Mining Giants Profit Shift using Singapore Marketing Hub**[70]). In other cases, governments are aware of the scale of potential losses, but find it difficult to find effective remedies. In Trinidad and Tobago, for example, petroleum companies sell liquid natural gas (LNG) to their own marketing subsidiaries at about $4 per tonne below the average price of the three relevant benchmarks. Annual production amounts to more than 10 million tonnes, resulting in a potential under-reporting of gross revenues of more than $40 million. In addition, the LNG is sold to the marketing subsidiaries at a further discount of about five percent.[71] In many other countries these profit-shifting techniques go undetected.

Textbox 8:

Natural Gas Sales Agreements and Government Revenue Loss[68]

One natural gas project in Mozambique involves the South African energy giant Sasol selling gas from Mozambique to an affiliated company in South Africa. While the fiscal terms for the project are very generous, the main source of government revenue loss is the gas sales agreement. Sasol sells the gas to its affiliate in South Africa at a fraction of the value of the gas in the South African market.

In another example, Yemen signed three liquid natural gas (LNG) sales contracts in 2005 that included a price cap of $3.80/mmbtu. When Asian LNG import prices skyrocketed to more than $15/mmbtu Yemen failed to secure any additional benefits. Reports suggest that Yemen renegotiated the contracts to increase the price cap to more than $7/mmbtu, which could result in annual government revenues increasing from $300 million to $1 billion.

Similarly, Equatorial Guinea had a comparable experience in LNG sale contracts with BG. In that case, the sale price was benchmarked against the American gas market (Henry Hub), as that was the target destination. When US prices plummeted, BG began to sell the gas in Asia for around $15/mmbtu while paying tax on the US benchmarked price of around $3 and making an extra $1 billion in profit each year.

Textbox 9:

Sierra Leone Iron Sold at Discount to Affiliated Company[69]

There are many reasons why government revenues from Sierra Leone's iron mines have not met expectations. One reason is transactions between related parties. Until recently, the Tonkolili Iron Ore (SL) Ltd (Sierra Leone) was co-owned 75 percent by African Minerals Limited (UK) and 25 percent by Shandong Steel Hong Kong Resources Limited (Hong Kong). Government revenues were reduced due to an "investor discount" on the sale price of iron exported to China.

Reports suggest that through 2013 and 2014, Tonkolili ore sold at an average discount of 25 percent to the benchmark price, due in part to a $5/t investor discount for sales to Shandong Iron & Steel (Hong Kong). In 2014, Shandong had the right to purchase 6.5 million tons, accounting for nearly 50 percent of total mine production, at the discounted price. Estimates suggest that overall customer discounts resulted in $5.9 million in lost royalty payments, even though the Mines and Minerals Act of 2009 explicitly excludes discounts, commissions or deductions in the calculation of royalties.

Significant transfer mispricing risks exist where related companies are involved in both producing and refining commodities. For example, Kenmare Resources plc (Ireland) operates the Moma titanium mine in Mozambique through two Mauritius subsidiaries. One subsidiary is responsible for mining operations and was able to secure generous tax terms, including a three percent royalty on the value of minerals sold and a 50 percent reduction in corporate income tax over the first 10 years of production. The second subsidiary is responsible for processing and operates under export promotion tax terms with no taxes assessed during the first six years and a one percent tax on turnover thereafter.[72] There is, therefore, a very strong incentive for Kenmare Mining to reduce the tax it pays by selling at below market price to Kenmare Processing.[73] While the tax authorities are aware of the risk, it is difficult to determine what an arm's length transfer price would be for the titanium ore before processing.

The examples offered above provide only a sample of the ways in which transactions between affiliated companies can lead to under-reporting of project revenues. There are many more. For commodities that depend on significant transportation infrastructure (e.g. railways and ports or pipelines), royalties and taxes are often calculated after deducting transportation costs. If affiliated companies own the transportation infrastructure they have a strong incentive to shift profits from the producing company (high tax rate) to the transportation company (low tax rate).

Company pricing structures can also be used for profit shifting. In order to manage price volatility, companies often engage in forward sales (also known as hedging) where they sell future production at a predetermined price. For sales between affiliated companies, however, it can be difficult for the government to distinguish between contracts designed to manage risk compared to contracts designed to minimize tax.[74] One solution is to "quarantine" all hedging efforts so that hedging losses can only be offset against hedging gains, and not against overall project revenues.[75]

Textbox **10:**

Mining Giants Profit Shift Using Singapore Marketing Hub[70]

Mining giants BHP Billiton and Rio Tinto both have marketing hubs based in Singapore – a jurisdiction identified by both the International Monetary Fund and the United States as a tax haven. The difference in tax rates creates a strong incentive to shift profits. According to Rio Tinto, the tax rate in Australia (including royalties) can be as high as 57 percent, while the tax rate in Singapore is no more than five percent and may be as low as zero.

In 2013 the Australian Tax Office (ATO) initiated audits of at least 15 natural resource marketing hubs based in Singapore and Switzerland. The ATO audits cover more than a decade from the early 2000s. Reports suggest that between 2005 and 2014 BHP avoided tax on $5.7 billion AUD in profits. Faced with a tax reassessment of around $900 million AUD, BHP representatives seemed to dismiss the significance of the amount claiming that it represented less than two percent of their overall tax payments in Australia. Rio Tinto reassessments also amounted to more than $500 million AUD.

The scale of the abuse led the ATO to issue detailed guidance in 2017 on transfer pricing and marketing hubs. Companies have 12 months to reassess past tax assessments without incurring additional penalties. In the meantime, the Senate Committee has widened its inquiry into company tax avoidance to including the country's burgeoning liquid natural gas (LNG) sector.

Assessing Risks by Sector

Some commodities are much more vulnerable to mispricing than others. Several examples are offered below.

Mining

Gold: Low risk. The transportation and processing costs are marginal and the market price is comparatively easy to establish.

Copper: Medium risk. Copper is sold in multiple forms (concentrate vs. cathodes), often to affiliated companies. Transportation infrastructure is also often owned and operated by affiliated companies. International market prices are available but various charges and penalties are deducted as part of a normal sales contract.[76]

Diamonds: High risk. As with all gemstones, expert analysis (often parcel by parcel) is required, particularly on gem-quality diamonds, in order to assess their market value.

Petroleum

Oil: Medium risk. Large volumes are commonly sold through national oil companies and the marketing arms of major oil companies. These risks are partly offset by the existence of clear international benchmark prices and well-established discounts/premiums for quality differences.

Natural gas: High risk. Unlike oil, gas is hard to transport and requires either pipelines or liquefaction. There is no international market price, though there are regional benchmarks. Most gas is sold through long-term sales agreements and bad terms can significantly reduce government revenues.

Ensuring Taxation Based on **Fair Market Value**

To mitigate the risk of undervalued production, resource prices may be assessed based on prices listed on international exchanges, or by specialized firms that offer pricing services.

For oil, one common method of valuation is to take the average value of sales to non-affiliated companies at the end of each month or quarter. However, as the case study of Alaska demonstrates, this solution remains vulnerable to abuse (See **Textbox 11: Securing the Government Take in Alaska**[77]). Even where sufficient arm's length transfers exist, companies commonly manipulate the "average" price to their advantage. In 2006, "the United Kingdom revised its petroleum valuation rules to curb substantial tax losses resulting from this kind of manipulation."[78]

Reference prices are one way to manage this risk. Norway, for example, uses a system of "norm prices" for petroleum valuation, rather than depending on the price established through non-affiliated sales. A Petroleum Price Board made up of representatives of Government Ministries establishes a reference price for each oil field, taking into account input from companies. This price is then used for all sales, including both affiliated and non-affiliated parties.[79] Nigeria establishes reference prices for their oil fields and then calculates taxes based on the higher of either the reference price or the actual sale price.[80]

Pricing is of even greater concern in the mining sector. The OECD project on "Addressing Information Gaps on the Prices of Mineral Products" has provided useful case studies on gold, copper and iron and a checklist to assist revenue authorities in identifying potential risks.[81]

The starting point is to work from international price benchmarks. However, the prices of some commodities are not listed on international exchanges. Furthermore, resource prices may vary depending on the quality of the resource and transportation costs. In such cases, tax authorities may need to rely on the sector ministry to provide market intelligence and monitoring to establish credible export prices.

Reference prices can also be established in the mining sector. In Chile, for example, the value of a metric ton of fine copper is determined by the Comisión Chilena del Cobre (Chilean Copper Commission) according to the average value of Grade A Copper as posted on the Metal Exchange.[82] Many African countries – including Guinea, Tanzania and Zambia – use reference prices to determine the tax base against which royalties are assessed. Reference prices seem less common in the determination of the tax base against which corporate income tax is assessed.[83]

Awareness of the risks is an essential first step. Valuation provisions in contracts commonly establish the point of valuation: in the mining sector it may be the mine gate or the port of export and in the petroleum sector the wellhead or the entry flange to a pipeline. Valuation provisions can also establish alternative procedures where the bulk of the sales are to an affiliated company. In many cases, however, contracts will contain stabilization provisions, making it difficult for the government to impose new approaches to valuation, even where the risks to government revenue are clear.

Textbox **11:**

Securing the Government Take in Alaska[77]

The challenges of securing a fair share of revenues are not limited to developing countries. Over a 25-year period, "one dollar out of every six that Alaska received from its oil development was obtained through legal challenges to the industry's original payment."

Alaskan officials claimed "industry chronically reduced the bases for calculating royalty, severance, and income tax payments by underestimating the market value of a barrel of oil at the point of sale. Overstated pipeline shipping charges (tariffs) had the same result." By tracking the export and value of each barrel of oil being exported, Alaskan authorities demonstrated that overall revenues were deliberately minimized by misrepresenting the actual sale value of oil and by inflating the costs associated with transporting oil by pipeline and tankers.

Between 1977 and 1994, the Alaskan Department of Law reported that it had paid contract lawyers and accounting specialists from 30 different companies a total of more than $217 million to follow up on these legal claims. The money was well spent as this litigation resulted in additional company payments to government of $2.7 billion. By 2000, litigation had produced an additional $10.6 billion in revenue, including $6.8 billion in direct payments for taxes and royalties, and an additional $3.8 billion in increased taxes and royalties related to reassessing pipeline transportation costs.

6

Inflating Costs to Undermine the Tax Base

Experiences in resource-rich developing countries suggest that ineligible and inflated costs are an important source of lost government revenue. Inflating project costs reduces government revenue because it lowers net (after-cost) income upon which profit-based taxes are assessed.

Ineligible Costs

In some cases, costs claimed are simply ineligible. In extreme cases, false invoices are filed even when no work was actually done (See **Textbox 12: False Invoices from Chilean Mining Company**[84]).

More commonly, claims are made for costs that should be excluded, but are often not caught by the relevant authorities. Case study evidence demonstrates that this includes companies seeking to claim expenses that: were incurred prior to the signing of the contract; were for the personal interests of expatriate employees and families; involved duplicate invoices for goods or services that have already been expensed; and which are clearly ineligible, such as costs related to mergers and acquisitions, or transfers in participating interests (See **Textbox 13: Indonesia Abandons Cost Recovery Due to Abuse**).

The revenue impact of accepting ineligible costs is heightened in a production sharing system where the main source of government revenue is their share of overall production (termed "profit oil"). Profit oil is divided between the company and government only after "cost oil" has been allocated to the company to reimburse eligible project costs. Any increase in project costs results in a decrease in available profit oil. Where increased expenses are legitimate, both the company and the government suffer. There is simply less "profit oil" to be shared. But where ineligible or inflated expenses are accepted, the company receives the full value in cost oil rather than only a portion of the value through profit oil. (See **Textbox 13: Indonesia Abandons Cost Recovery Due to Abuse**).

Textbox **12:**

False Invoices from Chilean Mining Company[84]

The Sociedad Quimica y Minera de Chile (SQM) is a private Chilean mining company extracting, processing and marketing iodine, potassium and lithium. The company has been embroiled in a series of scandals since 2013. One of these scandals involved the payment of false invoices that resulted in an underpayment of taxes.

Following investigations by the Chilean Internal Tax Service (SII), SQM reported to its investors that the company had paid more than 800 invoices totaling more than $11 million between 2009 and 2014 "that may not meet the requirements to be qualified as tax expenses under the Chilean tax code." A lawsuit by investors in the United States claims that they were "false invoices for fictitious services."

According to testimony, companies had been encouraged to submit invoices to SQM even though they had not provided any services to SQM and had not had any contact with SQM. When the invoices were paid, most of the money was transferred to politicians.

In 2015, the company submitted amendments to its tax returns for the 2009 to 2014 tax years and paid taxes and interest totaling approximately US$7 million.

Misallocated Costs

There are also strong incentives for companies to misallocate costs between different categories and, for some fiscal regimes, between different concessions or blocks.

Most fiscal regimes draw a clear distinction between capital costs (e.g. permanent infrastructure and machinery) and annual operating costs (e.g. salaries and consumables such as fuel). Operating costs can be fully claimed in the year in which they were incurred. In most cases, however, capital costs are "depreciated," meaning that they are claimed over a series of years. The depreciation of capital costs affects the timing of government revenues. Companies therefore have an incentive to classify costs as operating costs when they should in fact be classified as capital costs. Auditors from India have highlighted the revenue risks due to the misclassification of costs between the different project phases (exploration, development and production) and also between capital and operating costs.[85]

Companies have an incentive to classify costs as operating costs when they should in fact be classified as capital costs.

Costs can also be misallocated between different blocks or concessions. It is common, particularly in the petroleum sector, for operations to be "ring-fenced" at the level of the contract area or block. This means that revenues, costs and taxes are calculated separately. Costs can only be recovered, therefore, from future production within the same block. Thus, particularly during the exploration phase, companies can benefit from allocating costs to those blocks that hold the greatest prospect of future production. For example, seismic testing, which is often carried out across multiple blocks, could be disproportionately allocated to a highly prospective block in order to increase the likelihood that the bulk of the costs could be recovered. A concrete example comes from Timor-Leste, where a well drilled in an area to be handed back to the government (relinquished) was claimed against a producing block (See **Textbox 14: Timor-Leste Loses Revenue Due to Misallocated Costs**[86]). A similar dispute is underway in Ghana's oil sector where companies are seeking to claim second-generation project development costs against first-generation project revenues.[87]

Textbox 13:

Indonesia Abandons Cost Recovery Due to Abuse

Indonesia, pioneer of the production sharing fiscal regime in the 1960s, has abandoned a central tenant of the fiscal system due to uncontrollable abuse by companies. The government long believed that oil companies were inflating cost recovery claims, and tightened regulations in 2001 and again in 2008. According to the government, despite declining production, cost recovery claims continued to increase beyond what should be expected due to aging wells.

In 2010, the government adopted tighter regulations (No. 79/2010) that required costs to be: related to oil and gas operations within the contract area; based on the arm's length principle if between affiliated companies; and approved in advance by government authorities. The regulation also identified 22 categories of costs that are neither cost recoverable nor tax deductible. While removing some uncertainty around the eligibility of cost recovery claims, major disputes continued. A government-wide audit of cost recovery claims between 2010 and 2012 identified $221.5 million in ineligible expenses.

As stronger regulations were not sufficient to curb abuses, the government has recently adopted a far more radical approach by abandoning the concept of cost recovery for new contracts. Under Regulation No 8 of 2017, new contracts will apply a "gross split" mechanism to allocate production between the state and the contractor. This mechanism was applied to the most recent Production Sharing Contracts (PSCs) signed in January 2017 for the Offshore North West Java block. Existing PSCs will be unaffected, although contractors also have the option to apply the gross split mechanism.

Inflated Costs

In other cases, the price of legitimate goods and services are intentionally inflated. Transfer mispricing is of particular concern for transactions between affiliated companies. In the mining sector, inflating costs allows companies to shift profits out of the producing country, often to a subsidiary in a low-tax jurisdiction. In a production sharing system, inflated costs represent a direct revenue stream to the company through the cost recovery process.

In Ghana, for example, civil society groups alleged there was significant transfer mispricing in the construction of a processing facility of a natural gas project financed through $3 billion in oil-backed Chinese loans. Documents revealed that a competitor could have built a superior facility at a cost savings of $40 million. The Civil Society Platform on Oil and Gas stated: "It is suspected that Sinopec International Petroleum Service Corporation (SIPSC) has overpriced the materials – both the power plant and pipes – by building hidden costs purportedly occasioned by an arrangement with SIPSC's special purpose subsidiary offshore firm called SAF Petroleum Investments (FZE), which is registered in Dubai."[88] The Ghana National Gas Company claims that it reviewed its own tendering process and found the claims without substance or merit. There is no indication that any follow-up investigation was undertaken.

Textbox **14:**

Timor-Leste Loses Revenue Due to Misallocated Costs[86]

In 2011, Timor-Leste initiated a series of tax audits covering the years 2005-2010. Among the issues raised in the audits was the misallocation of costs for a well drilled by Conoco Philips that came up dry.

In 2004, a significant portion of one of the main producing blocks (03-12) was scheduled for relinquishment. When the companies sought an extension to drill one last well, the government regulator conceded to the extension on the condition that the costs of the well would not be recovered against revenues from existing production. The company would be allowed to recover its costs only if there was future commercial production in the area to be relinquished.

The Firebird well, drilled in 2005, found only non-commercial quantities of gas. Nevertheless, the companies claimed the $32 million cost of the well against revenues from the Bayu-Undan field, the non-relinquished area of Block 03-12. The cost recovery claim reduced their tax payment by $9.7 million.

The regulator contested the claim as part of its review of the 2005 cost recovery statement, but the issue remained unresolved. In 2010, Timor-Leste ordered the companies to pay $32.4 million, including the $9.7 million in back taxes, as well as a 100 percent penalty for gross negligence and one percent per month interest and penalties for late payment.

General and administrative costs are often a specific point of contention between host governments and extractive companies. Multinational companies commonly incur legitimate costs outside the host country and these are, by definition, transactions with affiliated companies. Support can be in the form of business overhead (e.g., accounting services, human resources management and training, marketing support, procurement), IT services (e.g., software and hardware support, systems acquisition), and proprietary specialized functions and technologies.

One way to analyze management costs is the proportion of overall project revenue allocated to those costs. A recent study of a gold mine project in Zimbabwe revealed that, by agreement with the government, the company is authorized to charge a pre-determined fee for the provision of management services that has amounted to seven to nine percent of gross project revenues in recent years.[89] An analysis of Paladin's uranium mine in Malawi revealed $134 million in management fees over five years, which amounted to one-fifth of overall revenue for a mine suffering from depressed uranium prices. Perhaps not surprisingly, the fees were paid to a subsidiary in the Netherlands, allowing the company to also avoid the withholding tax.[90] In Guinea, a mining subcontractor was found to be paying 30 percent of total revenue in management fees to its parent company. An audit found that many of the services provided were not likely to be required by the subcontractor in Guinea.[91]

The costs assigned to the project should be fair, reasonable and in line with the market. Ideally, clear legislation, regulations and procedures should determine what proportion of indirect costs incurred by an associated company is allowable. In order to limit the potential for abuse, some countries place a cap on the level of head office expenses. Mozambique, for example, allows head office costs of five percent of overall project costs below $5 million but only 1.5 percent of overall project costs over $10 million.[92] While a cap can limit the scale of potential abuse, companies may interpret it less as an upper limit and more as an entitlement.

Debt Financing

A specific area of great potential risk to government revenues is intra-firm financing for capital investments. According to the IMF, "With interest deductible under the CIT [corporate income tax] and low or no withholding taxes, an obvious way to shift profits out of high tax jurisdictions is by lending to them through low tax ones."[93]

There are two separate dimensions to debt financing. First, there is the question of the relative proportion of company debt compared to company equity used to fund capital costs. Many tax regimes put a limit on the debt-to-equity ratio in order to avoid excess debt financing, a phenomenon known as "thin capitalization." Second, there is the question of whether the interest rate charged on the debt is excessive.[94] As with transfer mispricing, affiliated companies often provide the financing. This raises the risks that interest rates are not based on arm's length "market" prices but are rather designed to inflate costs that are deductible against taxable income.

Textbox **15:**

Debt Financing Undermines Chilean Revenues[95]

According to Chilean tax authorities, the Compañía Minera Disputada de las Condes copper mine in Chile, owned by Exxon, operated at a loss for more than 20 years. In 2002, however, it sold for $1.3 billion to Anglo American Plc. The mine was clearly profitable from an investment perspective, but not from a tax perspective. The reason was debt financing.

Exxon purchased the mine from the Chilean state in the mid-1970s for $80 million. Technically, the mine operated for 23 years at a loss, accumulating $575 million in tax credits. Instead, funds that could have been declared as profits were paid to affiliated companies in the form of interest payments – including Exxon Financials, based in Bermuda. The company vice president is reported to have admitted "96 percent of liabilities correspond to loans from headquarters or the Bermuda subsidiary, that is why Exxon withdraws interest payments instead of profits."

Public outrage at the case contributed to the introduction of thin capitalization rules limiting the ratio of debt to equity and imposing a 35 percent withholding tax on interest payments leaving the country. It also contributed to the decision to impose a production-based royalty to secure a dependable revenue stream, less vulnerable to company tax minimization strategies.

Debt financing represents a major risk to government revenues. In Chile, for example, a copper mine avoided paying any corporate income tax for decades by shifting profits through interest payments to a subsidiary in Bermuda. The true profitability of the mine was revealed when it was sold for $1.3 billion (See **Textbox 15: Debt Financing Undermines Chilean Revenues**[95]).

Recent research highlights the prominence given to the issue by representatives of tax authorities in Africa.[96] In one report, the IMF highlights an unnamed African country where $100 billion in investment in the gold mining sector was almost entirely debt financed.[97] In another example, a gold mine in Guinea had been operating for 20 years without paying any corporate income tax due to hundreds of millions of dollars in debts, mostly coming from its parent company. When confronted, the company reduced its declared debt load to $23 million, resulting in a payment of $13 million in corporate income tax.[98]

The risks that debt financing pose to government revenue are clear in the petroleum sector as well. For example, the tax office in Australia recently prevailed in court against abusive debt financing between two Chevron subsidiaries (See **Textbox 16: Chevron Intra-Firm Financing Costs Disallowed**[99]). Production sharing agreements can be particularly vulnerable to debt financing when contractual provisions allow for interest payments to be both recoverable costs and legitimate deductions against taxable income. A range of measures exists to limit revenue loss through debt financing. Thin capitalization rules restrict debt to equity limits. Restrictions can be placed on the rate of interest, often a mark-up on an international benchmark such as the London Overnight Banking Rate (LIBOR). An alternative approach is to restrict interest to a percentage of profits, commonly referred to as an "earning stripping rule."[100]

Textbox **16:**

Chevron Intra-Firm Financing Costs Disallowed[99]

Chevron is a joint venture partner in the $56 billion AUD Gorgon natural gas project in Australia. Chevron Australia Holdings Pty Ltd (CAHPL) admits that it sent a total of $5.15 billion AUD in interest payments to its own subsidiary, Chevron Funding Corporation (Delaware), from 2003 through 2008.

Specifically, Chevron Australia borrowed $2.5 billion AUD from Chevron in Delaware at 8.97 percent interest, even though Chevron Funding Corporation borrowed the money for 1.2 percent. No withholding taxes were paid on the interest payments in Australia and Chevron Delaware did not pay tax on the interest income. Dividend payments from Chevron Delaware to Chevron Australia were also exempt from Australian tax.

Australia's Federal Court ruled that the loans contravened transfer-pricing rules. The loans did not meet an arm's length standard and thus Chevron owed $322 million AUD in back taxes and penalties.

Textbox **17:**

Tanzania's Mineral Audit Agency[101]

Liberalization of the gold mining sector in Tanzania in the late 1990s generated massive new investments but little government revenue. A government review concluded that natural resource exports in 2006 – valued at nearly $1 billion – generated only $26 million in government revenue. A low three percent royalty combined with investment incentives for capital expenditures were partly to blame. But there were also concerns about aggressive tax avoidance strategies adopted by companies.

Large gold mining companies paid no corporate income tax and claimed large losses each year. Overall losses amounted to more than $1 billion between 1998 and 2005. A government-funded audit concluded that companies had "over-declared" their losses by around $500 million.

In 2009 the government created the Tanzania Minerals Audit Agency (TMAA) in order to monitor all aspects of mining operations related to revenue generation. The agency independently assesses the quantity and quality of minerals mined and exported and supports tax authorities in determining corporate income tax by verifying the authenticity of revenue, investment and expense claims.

Audit queries of the TMAA from 2010 illustrate a number of the pathways through which extractive sector revenues can be lost. The figures represent the dollar value of company claims contested by the TMAA, including the under-reporting of project revenue (e.g. mineral sales understated by more than $12 million) as well as a series of ineligible or inflated project costs.

Common Audit Query	Total Amount
Wrongly claimed hedge financial liability and losses	**US$183,645,187**
Over-claimed capital allowance	**US$179,304,109.43**
Unsupported capital and operating expenditure	**US$141,253,370.23**
Disallowable items	**US$53,776,029.65** and **TZS 1,729,200,800**
Wrongly claimed and premature capital deduction	**US$44,453,468**
Understated mineral sales	**US$12,446,991.13** and **TZS 3,001,291,703.81**
Payments for technical services of which Withholding Tax was not withheld	**US$50,874,325.99** and **TZS 1,515,475,586**
Management fees for which Withholding Tax was not withheld	**US$23,097,348**

Since the creation of the agency, revenues have increased substantially. Annual revenues exceeded 100 billion Tanzanian Shillings ($71 million) for the first time in 2010. In all years since, revenues have exceeded 200 billion ($125 million). By 2015 they had reached nearly 400 billion ($200 million).

Constraining **Inflated Costs**

Effective monitoring and auditing is essential to counter the risk that company cost claims are excessive. Tanzania's Mineral Audit Agency is a commonly cited example of a case in which comprehensive auditing has secured significant revenue dividends (See **Textbox 17: Tanzania's Mineral Audit Agency**[101]).

Transfer mispricing represents a major challenge to tax administrations in both developed and developing countries.[102] Contracts normally contain clauses requiring that all transactions between affiliated companies are based on arm's length prices, but these are notoriously difficult to enforce. There has been considerable effort recently to address these issues within international fora (e.g. OECD BEPS and UN Tax Committee) as well as through capacity-building efforts supported by the IMF, World Bank and Norway.

Constraining transfer mispricing requires a combination of clear laws and strong capacity. For developed countries, there have been some high-profile victories, including the recent Chevron case in Australia (See **Textbox 16: Chevron Intra-Firm Financing Costs Disallowed**). But there have also been many losses, including the Transocean cases in the United States and Norway (See **Textbox 18: Transocean: The Challenge of Taxing a Drilling Company**[103]).

South Africa's experience provides a useful perspective. Clearly the strongest tax authority in sub-Saharan Africa, the revenue authority has a dedicated transfer pricing audit team of 20 people covering all sectors. Reports suggest that 30 audits between 2012 and 2015 resulted in adjustments totalling nearly $2 billion, generating about $500 million in additional government revenue.[104] However, it does not appear that there has been a successful prosecution for transfer mispricing in South Africa. The challenges of administrative capacity are not limited to the revenue authority; they extend to the courts, where judges may lack the capacity to truly understand a complicated transfer mispricing case. The head of the Tax Review Committee, for example, said that he was "not sure that we have a judge that can hear a transfer pricing case at this point."[105]

For developing countries the challenges are immense, with a recent review of Africa showing major weaknesses in both legislation and administrative capacity to manage the risks of transfer mispricing.[106] Representatives of tax authorities from Latin American countries have also highlighted similar challenges.[107]

Textbox **18:**

Transocean: The Challenge of Taxing a Drilling Company[103]

Transocean, the world's largest oil drilling company, illustrates the challenges of effective tax administration in developed countries. Transocean was originally incorporated in Delaware, with its headquarters in Houston. In 1999, the company re-domiciled to the Cayman Islands, a move that reduced its overall global tax rate from 31 percent to less than 17 percent, and resulted in a savings of nearly $2 billion in US taxes. In 2008, as Caribbean tax havens came under increasing pressure from US authorities, the company re-domiciled again, this time to the low-tax canton of Zug (Switzerland).

The company retains significant operations (and many subsidiaries) in the US. On multiple occasions the IRS has issued tax reassessments related to alleged transfer mispricing: $413 million plus interest for 2004-05; $278 million for 2006-2009; and $290 million plus interest and penalties for 2010-2011. Transocean has prevailed in court for all reassessments prior to 2010 and anticipates doing the same for 2010-11.

Transocean was also at the centre of Norway's largest ever tax fraud case. Specifically, Norwegian authorities alleged that Transocean engaged in a series of "tax motivated transactions" involving Norwegian subsidiaries while consolidating ownership of 12 drilling rigs in Cayman Island subsidiaries between 1999 and 2002. For example, the Polar Pioneer drilling rig, operating in the Norwegian continental shelf since 1985, was sold during an eight-hour window when it was towed outside of Norwegian territorial waters following maintenance at a Norwegian port in May 1999.

The Norwegian tax authority issued reassessment of $776 million, including interest and penalties. Criminal indictments were also lodged against two subsidiaries and employees of Transocean's external tax advisors. In 2014, an Oslo court dismissed all charges against Transocean, but the government appealed. In January, after nearly 100 days of court proceedings, the Court of Appeal acquitted Transocean and its advisors on most of the charges. The Norwegian authorities decided not to proceed with the remaining charges and fired the lead prosecutor who had been accused of being on a "crusade." The loss is a major blow to the tax fraud office in Norway and may represent a setback for some provisions of Norwegian corporate income tax law.

Next Steps in Protecting Government Revenue

There are many different pathways through which government extractive sector revenues are lost. Closing off one pathway is of little benefit if other pathways remain unchecked. Protecting revenues that should ultimately provide benefits to citizens therefore requires a comprehensive approach.

Emerging **Best Practice**

Obviously, badly negotiated deals guarantee that governments do not secure a fair share of their natural resource wealth. Securing better extractive sector deals is a well-established component of both civil society advocacy and international donor support. Progress on the disclosure of extractive sector contracts and the beneficial owners of companies will help. The now-standard guidance to embed all (or nearly all) fiscal terms in national legislation rather than project-specific contracts will reduce the discretion left to government negotiators. Model contracts, appended to national legislation, can play a similar role where project-specific negotiations continue. International support to assist governments in those negotiations has also been widely endorsed, though its practical impact is difficult to assess. Continued vigilance is needed as bad deals are still being negotiated[108] and companies continue to be offered tax breaks, particularly during commodity price downturns. One crosscutting lesson is the importance of building the capacity for adaptation into contracts by limiting stabilization and including a timeframe (e.g. five years) for a formal review of fiscal terms.

Companies commonly exploit DTAs in order to reduce or eliminate an additional set of taxes, primarily on the repatriation of interest and dividend payments and on the taxation of capital gains. These taxes are not the main sources of government revenue from the extractive sector. Nevertheless, tens of millions of dollars can be lost (sometimes more) when companies secure treaty benefits by creating a shell company in a jurisdiction with generous treaty terms. From a developing country revenue perspective, DTAs warrant much more careful analysis. It appears that one arm of government often promotes DTAs more as a signal of the desire for greater economic interaction, without fully appreciating the potential revenue implications. As a single extractive sector project can fundamentally alter the cost and benefit calculation of a DTA, proactive analysis is essential. Treaty language designed to deny benefits to extractive sector companies using shell companies seems eminently sensible, but it remains to be seen if it will be effective.

Establishing fair tax rates is a necessary condition for governments to get a fair share, but it is not sufficient. The bulk of this study has sought to illustrate that tax rates are meaningless in the absence of the tax base against which they are assessed. Put simply, whether the corporate income tax is 25 or 35 percent is irrelevant if companies report no taxable income. Ensuring that governments receive a fair share of extractive sector revenues therefore requires far greater attention to protecting the tax base.

Protecting the tax base starts with ensuring the accurate reporting of overall project revenue. Effective monitoring is necessary to verify both the quantity and quality of the commodity produced, including any valuable by-products. While this seems obvious, there are many jurisdictions where this kind of verification does not take place. Government revenue is also at risk when the commodity is sold to an affiliated company at below market rates. Consideration should be given to establishing a reference price based on international benchmarks for the calculation of government revenues. Where reference pricing is impossible, great care should be taken wherever companies sell commodities to an affiliated company, particularly when done as part of a long-term sales agreement.

The second main step in protecting the tax base is controlling project costs claimed by the company. These issues are much broader, and sometimes much simpler than transfer mispricing between affiliated companies. Government authorities should undertake risk-based auditing to disallow fraudulent invoices and other ineligible costs and to ensure that eligible costs are properly allocated between different projects and between different categories of costs (i.e. capital vs. operating). With larger multinational resource companies, there is a risk of profit shifting through transfer mispricing. Debt financing is a particularly high-risk area, but scrutiny should be given to all cases where affiliated companies provide goods and services. Engaging with international efforts of the OECD or the UN processes may help but, in general, countries will need to develop and implement national-level solutions to limit the ability of companies to inflate costs. Simple anti-avoidance measures might include establishing or increasing withholding taxes, and setting caps on certain types of expenditures such as head office costs.

Strengthening **Tax Administration** and Closing **Tax Loopholes**

Strengthening tax administration capacity is an obvious starting point when seeking to protect government revenues. It is interesting to note that while dedicated attention to extractive sector revenues and fiscal regime design by the major donors – including the IMF and the World Bank – can be traced back more than 15 years, it is only in the last five years that similar attention has been given to tax administration.[109] Momentum in this area is growing rapidly, including:

- The provision of detailed guidance on transfer pricing risks and mineral pricing.[110]
- Support for capacity-building programs from the IMF and World Bank, as well as bilateral donors such as Norway, Germany and Canada.
- The mobilization of various mechanisms to strengthen administration and audit capacity, such as the African Tax Administration Forum and the International Organization of Supreme Audit Institutions.

In many cases, the lack of previous government oversight is surprising. Zambia, for example, ranks eighth among the world's copper producers. Minerals account for 70 percent of the value of the country's exports and 30 percent of government revenue. The government was convinced that it was not receiving a fair share of the wealth and implemented, and then revoked, a series of major revisions to the mining fiscal regime.[111] Yet it is only in recent years that significant effort has been given to revenue administration.[112]

It is, of course, never too late to start. Regrettably, however, the results of all this useful work comes after the commodity super-cycle, with much revenue lost in the meantime.

Stronger government capacity can only be a good thing. But it would be unwise to over-estimate the effectiveness of these efforts. A significant imbalance in expertise will remain, for the foreseeable future, between the lawyers and accountants working for extractive sector companies and the government officials tasked with securing a fair share of revenues.

As the case studies from natural resource "superpowers" such as Alaska, Australia and Canada have illustrated, even in developed countries the challenges of securing extractive sector revenues are daunting. There have been important victories, though, such as Alaskan litigation and Australian success against Chevron's debt financing and profit shifting to Singapore marketing hubs. In Canada, the big cases – including Cameco and Silver Wheaton – remain before the courts and their outcome is uncertain. Less attention, however, is often paid to how often tax authorities in developed countries lose in court. Battles between tax authorities in Norway and the US against the world's largest petroleum drilling firm, Transocean, suggest scaling back expectations on the revenue impact of tax administration capacity building.

Perhaps counter-intuitively, the next big step in protecting government revenues might be to revisit fiscal regimes and to renegotiate contracts. The point, however, would not be to revisit tax rates, but rather to find more effective measures to protect the tax base by closing loopholes. For developing countries with comparatively weak tax administration, consideration should be given to a range of simple but robust measures to counter revenue loss.[113]

Reviewing fiscal regimes might even require changing the balance between production-based and profit-based taxes. After 15 years of recommending that developing countries shift towards the taxing of profits and super-profits, some at the IMF are now questioning this approach. A recent IMF volume focused on risks to extractive sector revenues concludes that fiscal regime design might require "tilting the balance between profit-related taxes and royalties further towards the latter than might otherwise be the case, on the grounds that monitoring deductible costs is harder than monitoring revenues."[114]

For developing countries with comparatively weak tax administration, consideration should be given to a range of simple but robust measures to counter revenue loss.

Project-Specific **Revenue Monitoring**

Securing a fair share of government revenues, in nearly all cases, requires effective external monitoring. The good news is that in many jurisdictions the transparency revolution has provided those outside of government – including parliamentarians, civil society organizations, community leaders and the media – with information that was unthinkable even a few years ago. This includes not only revenue data but, in some cases, also extractive sector contracts and data on production volumes and prices.

The public disclosure of payments to government and efforts to reconcile government receipts and company payments is a critical step forward. However, without additional information about the fiscal regime, the commodity, the project and the contract, it is difficult to assess whether those payments are either consistent with the terms of the contracts and tax legislation or, in a wider sense, fair. Answering those questions can be done, but it requires comprehensive project-level economic analysis. Payments to government ultimately make sense only in the context of an integrated analysis that takes into account project production and project costs, the sale value of the commodity and the applicable fiscal terms.

Efforts to effectively engage with existing public domain information have been challenging. This is, at least in part, because of the skills required to engage in technical analysis and the time required to conduct in-depth analyses using data scattered across multiple sources. Furthermore, translating technical and in-depth analysis to a broader audience, and identifying ways to harness this analysis to achieve greater accountability, can be difficult. It is important that continued efforts are made to undertake project-level revenue analyses and to act on the conclusions.

A central component of the struggle for accountability in the extractive sector is ensuring that companies pay what they owe, and that what they owe is fair compensation for the depletion of a non-renewable resource. There is persuasive evidence from both developed and developing countries that governments do not secure their fair share of extractive sector revenues.

It can be hard to find revenue loss if you do not know where to look. As this study has shown, there are many pathways to revenue loss, but they are not unlimited. There are clear patterns to how companies reduce payments to governments. Applying the risk assessment methodology set out in this paper to specific extractive sector projects can assist those seeking to ensure that countries maximize the revenue benefits from the sale of their non-renewable resources.

Annex 1. A Tax Base Erosion Scenario

The sections above have sought to identify a broad range of ways through which companies reduce the gross and net (after-cost) revenues on which royalties, corporate income tax and petroleum production sharing are based. The table below sets out a hypothetical extractive sector project with gross revenues of $100 million. Four different scenarios are considered in order to illustrate how these techniques can reduce reported revenues and costs.

Figure **2:**
Tax Base Erosion Scenarios

	Gross Revenue (Production × Price) $100 Million		
1	**Project Costs** $60 Million	**Taxable Income** $40 Million	
2	**Project Costs** $60 Million	**Inflated Costs** $20 Million	**Taxable Income** $20 Million
3	**Project Costs** $60 Million	**Taxable Income** $20 Million	**Hidden income** $20 Million
4	**Project Costs** $60 Million	**Inflated Costs** $20 Million	**Hidden income** $20 Million

1. The first scenario shows the actual economics of the project: the reported project revenues are $100 million and the reported project costs are $60 million. The result is taxable income of $40 million.

2. The second scenario illustrates the impact of inflated costs. In this scenario the combination of inflated costs for the intra-firm sale of used machinery, excessive management fees and abusive debt financing result in an extra $20 million in project costs. Reported gross income remains $100 million, but with reported project costs of $80 million, taxable income is only $20 million.

3. The third scenario illustrates the impact of the under-reporting of project revenues. In this scenario, the company sells the primary commodity to an affiliated company at below market prices and fails to report valuable by-products that are separated at the smelting stage. Reported project revenue falls to $80 million, instead of $100 million. With costs remaining at $60 million, taxable income is once again only $20 million.

4. The fourth scenario is a combination of Scenario 2 (inflated costs) and Scenario 3 (under-reported revenues). Reported gross revenues are $80 million and reported costs are $80 million. There is no taxable income.

Table 1:
Implications for Government Revenues

Table 1 reviews the government revenue implications of the different scenarios, assuming a simple fiscal regime comprised of a five percent royalty (based on the sale value of the commodity) and a 30 percent corporate income tax. To keep the example as simple as possible, it is assumed that the royalty is not an allowable deduction against corporate income tax.[115]

Scenario	Gross Revenue	Royalty at 5%	Taxable Income	Corporate Tax at 30%	Total Gov't Revenue	Revenue Loss (%)
1	$100 MILLION	$5 MILLION	$40 MILLION	$12 MILLION	$17 MILLION	
2	$100 MILLION	$5 MILLION	$20 MILLION	$6 MILLION	$11 MILLION	- 35%
3	$80 MILLION	$4 MILLION	$20 MILLION	$6 MILLION	$10 MILLION	- 41%
4	$80 MILLION	$4 MILLION	$0	$0	$4 MILLION	- 76%

1. Scenario 1 generates $17 million in government revenue. A five percent royalty on $100 million of commodity sales results in a payment of $5 million. A 30 percent corporate income tax on $40 million in taxable income results in a payment of $12 million.

2. Scenario 2 generates $11 million in government revenue. As the reported gross revenue remains at $100 million, the royalty payment is unchanged. Inflated costs, however, reduce taxable income to $20 million, resulting in a payment of only $6 million. Government revenue is reduced by 35 percent.

3. Scenario 3 generates $10 million in government revenue. With reported gross revenues of $80 million, royalty payments fall to $4 million. With taxable income reduced to $20 million, corporate income tax again generates only $6 million. As under-reporting commodity sales affects both royalties and corporate income tax, government revenue is reduced by 41 percent.

4. Scenario 4 generates only $4 million in government revenue. With $80 million in reported gross revenue, royalty payments remain at $4 million. There is, however, no reported taxable income and therefore no corporate income tax payment. Government revenue is reduced by 76 percent, illustrating how sensitive profit-base taxes are to tax base erosion.[116]

Before leaving this example, it is worth considering a fifth scenario that adds the dimension of time. Tax avoidance strategies are commonly employed already in the exploration and development phase when inflated costs are often not independently monitored and challenged by tax authorities. Fiscal regimes allow for previous year losses to be "carried forward" and applied in the calculation of future year taxable income.[117] In the fifth scenario, the company has $200 million in overinflated past losses that will be used to offset any future taxable income.[118] The combination of these techniques illustrates how a profitable extractive sector project can end up paying no corporate income tax, **ever.**

Notes

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5 For a comprehensive review of the UN's work in this area, see: United Nations Handbook on Selected Issues in Protecting the Tax Base of Developing Countries, United Nations, 2015.

6 See, for example, Secretariat Report on the Expert Group Meeting on Extractive Industries Taxation, United Nations, 28 May 2013.

7 Tax Evasion and the Use of Tax Havens: Report Of The Standing Committee On Finance, Parliament of Canada, 2013.

8 Bill C-621: An Act to Amend the Income Tax Act (Economic Substance), Parliament of Canada, 2014.

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10 See "Consolidated Amended Class Action Complaint for the Violation of Federal Securities Laws," US District Court California, 18 December 2015, (2:15-cv-05146-CAS-JEM); and Silver Wheaton Corporation, Annual Report 2015, 11 April 2016, p. 44-45.

11 See Rita Celli, "Mining for More," 2015.

12 The transparency revolution extends well beyond revenue payments. Extractive sector contracts, closely guarded secrets in the past, are now being published by dozens of countries. See Don Hubert and Rob Pitman, Past the Tipping Point? Contract Disclosure within EITI, NRGI, 2017.

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14 This analysis focuses on royalties, taxes and production entitlements made by companies to governments. It does not address potential government revenue loss where the state holds an equity share in an EI project.

15 All values, unless otherwise stated, are in US dollars (USD).

16 By design, this report does not address the equally important question of how government revenues are spent.

17 The literature is extensive. For a particularly significant example, see Fiscal Regimes for Extractive Industries: Design and Implementation, IMF 2012.

18 See Jack Calder, Administering Fiscal Regimes for Extractive Industries: A Handbook, IMF, 2014; Pietro Guj et al., How to Improve Mining Tax Administration and Collection Frameworks, World Bank, 2013; and Brian J Arnold and James Wilson, Aggressive International Tax Planning by Multinational Corporations: the Canadian Context and Possible Responses, SPP, 2014.

19 See Pietro Guj et al. Transfer Pricing in Mining with a Focus on Africa: A Reference Guide for Practitioners; World Bank, 2017; Transfer Pricing Issues in Extractive Industries, Committee of Experts on International Cooperation in Tax Matters, E/C.18/2017/CRP.9, 2017; and Alexandra Readhead, Preventing Tax Base Erosion in Africa: A Regional Study of Transfer Pricing Challenges in the Mining Sector, NRGI, 2016.

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34 Model Mine Development Agreement, International Bar Association, 2011.

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40 Spillovers in International Corporate Taxation, IMF, 2014, p. 27.

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50 See Roos van Os and Roeline Knottnerus, "Dutch Bilateral Investment Treaties: A Gateway to 'Treaty Shopping' by Multinational Corporations for Investment Protection," SOMO, 2011.

51 See Union of India v Azadi Bachao Andolan, Supreme of Court of India, 7 October 7, 2003 and description of the case in Eduardo Baistrocchi, "The Use and Interpretation of Tax Treaties in the Emerging World: Theory and Implications," *British Tax Review*, 2008, p. 361-62.

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55 BEPS action 6: Art. X, par. 7, Preventing the Granting of Treaty Benefits in Inappropriate Circumstances Action 6: Final Report, OECD, 2015.

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66 Ibid, p. 7.

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73 See Øygunn Sundsbø Brynildsen and Dionísio Nombora, Mining Without Development: The case of Kenmare Moma Mine in Mozambique, CIP/Eurodad, 2013.

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76 See "DRAFT: Addressing Information Gaps on the Prices of Mineral Products: Mineral Product Pricing Practices Case Studies: Copper, Gold and Iron Ore, Consultation Document 3 of 4," OECD Tax and Development Programme, October 2015, p. 4-9.

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81 See "DRAFT: Addressing Information Gaps on the Prices of Mineral Products: Mineral Product Pricing Practices Case Studies: Copper, Gold and Iron Ore, Consultation Document 3 of 4," OECD Tax and Development Programme, October 2015.

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118 "EI revenues are vulnerable to failure to audit during exploration and development phases [...] Neglect in auditing exploration and development expenses can cost the tax base dearly as a project starts to generate income." See Fiscal Regimes for Extractive Industries, IMF, 2012, p. 67.

Applying the risk assessment methodology set out in this paper to specific extractive sector projects can assist those seeking to ensure that countries maximize the revenue benefits from the sale of their non-renewable resources.

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