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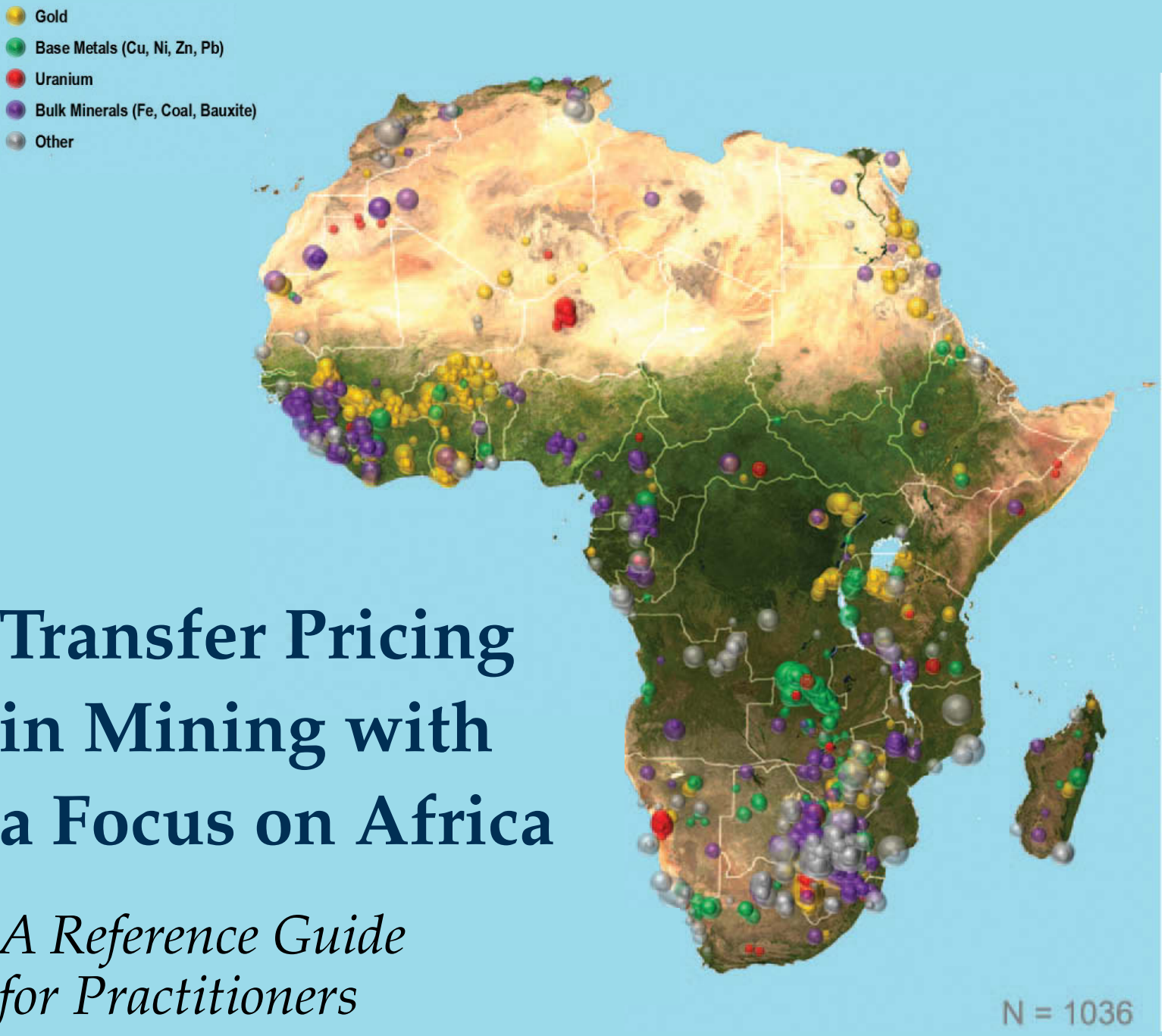

Transfer Pricing in Mining with a Focus on Africa

A Reference Guide for Practitioners

January 2017

By Pietro Guj, Stephanie Martin, Bryan Maybee, Frederick Cawood, Boubacar Bocoum, Nishana Gosai and Steef Huibregtse

WORLD BANK GROUP

Centre for EXPLORATION TARGETING

MINERALS AND ENERGY FOR DEVELOPMENT ALLIANCE

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NOTES:

1—The interests of the International Mining for Development Centre (IM4DC) have since its closure being represented by the Mineral and Energy for Development Alliance (MEfDA) between the two original IM4DC partners, namely the University of Western Australia and the University of Queensland.

2—The jacket map locating the main mineral deposits in Africa was provided by MinEx Consulting.

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Contents

LIST OF FIGURES

LIST OF TABLES

Prologue

By Boubacar Bocoum

The number of extractive resources rich countries has steadily increased over the past quarter of a century, particularly in the case of low- to middle-income countries. Some estimate that by 2030 half of the global population living on less than two dollars a day will reside in extractive-driven countries. Capturing appropriate revenues from nonrenewable extractive resources is, therefore, of paramount importance for domestic income mobilization for developing countries, and a major potential source of poverty reduction and inclusive growth.

Considerations required to enforce mineral contractual agreements, especially as they relate to taxes, royalties and other mineral revenue streams have received relatively less attention in the past. This is changing with increasing research and publications on the subject, including by the World Bank Group* and its partners, together with other stakeholders.

Specifically mining, which as an industry is broader and more diverse than oil and gas, has been expanding at a time when the multinational enterprises involved have been structuring their operations in ways that result in a spread of their functions, assets and risks across multiple related entities located in different jurisdictions. This trend, which is especially prominent in Africa and in countries with similar economic circumstances, results in value-adding activities moving away from the countries hosting the mining operations. As a consequence, the volume of goods and services provided through cross-border transactions between related entities expands, and the price charged for them demands more attention and proper assessment for tax calculation.

Many developing countries are yet to be fully equipped to deal with transfer pricing risks in general, and even less so for those associated with mineral commodities. This need for support motivated the World Bank Group (WBG), in cooperation with the International Mining for Development Centre (IM4DC) of Australia and the Transfer Pricing Division of the South African Revenue Services (SARS), to develop this Guidebook to address how established transfer pricing principles for intra-group transactions could best be implemented in the context of the mining industry.

This publication identifies typical mining functions and activities and their associated assets and risks, and those amenable to related party transactions and related transfer pricing risks; investigates key commodities mined in Africa profiling their transfer pricing risks; provides sources of information to assist tax auditors to deal with the scarcity of relevant comparables; and discusses audits, capacity building and institutional methodologies and approaches to enhance compliance with payment of mineral taxes. It is a menu of options and possibilities that may be adapted to the individual circumstances of countries as they tackle their specific mining related transfer pricing challenges.

While this Guidebook is comprehensive in suggesting solutions to mining transfer pricing issues, its main messages have also been captured in a spinoff report** for stakeholders other than tax administration professionals interested in contributing to the discourse on extractive tax collection administration. This Guidebook has also been the basis for the development of specialised training modules to be delivered through regional workshops to public, private and civil society stakeholders interested in the topic.

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* How to Improve Mining Tax Administration and Collection Frameworks: A Sourcebook.

** Transfer Pricing in Mining with a Focus on Africa: A Briefing Note.

Foreword

The practice of transfer pricing is a multifaceted exercise drawing from the disciplines of accounting, economics, law, and of course tax. Included in this Guidebook *Transfer Pricing in Mining with Focus on Africa: A reference guide for practitioners* is the observation that most mineral-rich African nations have or are in the process of developing a transfer pricing legislative framework, but effective enforcement of the rules is often lacking.

The importance of the resources sector in Africa cannot be overstated. The African Natural Resources Center has estimated that Africa holds around 30% of the world's known mineral reserves, together with significant levels of remaining global oil and gas reserves. In this context, unsurprisingly, many jurisdictions in Africa have identified effective transfer pricing regimes as a frontline tool to ensure they receive their 'fair share' of global tax revenues on the profits associated with the extraction and sale of mineral commodities by multinational enterprises (MNEs).

Transfer pricing capability and specific mining industry knowledge have been identified as factors inhibiting enforcement efforts on the African continent. This Guidebook considers transfer pricing at both a theoretical and practical level, and the content can be considered to be 'best in class' in the context of current international practice and thinking.

The content in the Guidebook is highly consistent with current work on transfer pricing at the OECD/G20 level. For example, the 'Base Erosion and Profit Shifting' (BEPS) project has as its key objective the design of measures that lead to greater alignment between profit outcomes and the true economic contribution by entities in a given tax jurisdiction. With specific reference to transfer pricing, it is clear from the OECD guidance that transfer pricing analyses require careful examination of the actual conditions agreed by the related parties together with a focus on their 'economic substance'. The commentary in the Guidebook proceeds along these lines, while emphasizing the importance of a transfer pricing analysis grounded in a comprehensive economic and functional analysis.

It is recognized that MNEs have significant scope to structure their global value chains in ways that are 'tax efficient' as part of their drive for commercial efficiency, and proper application of the arm's length principle goes beyond merely pricing the actual conditions agreed by different parts of an MNE group. These considerations are addressed, as recognized in the Guidebook, by ensuring the 'conditions' surrounding a transaction make commercial sense and reflect conditions that would have been agreed on between independent parties operating at arm's length.

The Guidebook considers a number of topical issues in the transfer pricing arena. Three stand out as being of particular importance: the real assumption/allocation of risk; organizational structures common in the resources sector; and intra-group financing. All of these give rise to important questions in relation to economic substance.

Risk issues have been identified as part of the OECD/G20 BEPS Project as integral to transfer pricing analyses given that returns naturally follow risk. The ability of MNEs to 'tax plan' around the contractual assignment and reassignment of risk was noted in the Actions 8–10—2015 Final Reports *Aligning Transfer Pricing Outcomes with Value Creation*. The OECD has emphasized that this is an area where economic substance, expressed in terms of an entity's financial capacity to assume the risk, together with an ability to exercise control over the risk, will be the basis for determining the correct allocation of the risk for transfer pricing purposes. Included in the Guidebook is

discussion and guidance on this issue in the context of a functional analysis and an understanding of the global value chain.

Centralized 'hubs' are identified in the Guidebook as being commonplace in MNEs' organizational structures in the resources sector. Marketing hubs can take a variety of forms, but typically involve an intermediary acting as an agent or principal in relation to the procurement or sale of the mineral commodities. It is the Australian experience that these structures are common. Given the quantities of commodities that are sold through (or have their sale facilitated by) marketing hubs, the potential tax implications are significant. A key focus of the compliance effort is on ensuring the overall allocation of profit from major resource projects is reflective of the relative economic contribution made by each entity in the MNE value chain—emphasizing in particular the major source of value being the upstream producing asset. A focus on the economic substance together with questions regarding management and control of risk are highly relevant, as are questions in relation to whether or not independent parties would enter into the same or similar arrangements, and if so, the conditions they would have agreed. An important threshold question relates to the extent to which the marketing hub can in substance add value to the global group's operations through influencing the price of the underlying commodity, the cost of production and transport, or the quantities that are sold.

Intra-group financing is recognized as a key area of focus for transfer pricing, and difficult questions (such as the extent to which the notion of 'arm's length conditions' can include consideration of an entity's capital structure) are frequently encountered. Included in the Guidebook are details in relation to the types of intra-group financing issues encountered in practice, together with a discussion of the linkages between thin capitalization rules and transfer pricing.

In summary, the Guidebook achieves the goal of providing a detailed analysis of both the theory and practice of transfer pricing in the mining sector. It includes useful industry information in relation to the sector, extensive commentary and guidance on the application of the arm's length principle, and a description of several current compliance 'hot spots' for revenue authorities globally. A transfer pricing analysis can be seen as daunting to tax officials not well versed in the practice, but the Guidebook represents a 'how to' manual to facilitate the effective enforcement of transfer pricing regimes across the African continent.

Michael Jenkins
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Acknowledgements

The World Bank Group and the authors gratefully acknowledge the support and contributions of the Governments of Namibia and Tanzania, which facilitated field visits and provided access to key officers and valuable information.

We wish to acknowledge the significant contributions made by Messrs. Ian Darragh to the administration of the transfer pricing questionnaires and by Richard Schodde of MinEx in the compilation of the commodity maps displayed in Part B.

The invaluable contribution made by current and past officers of the Australian Taxation Office (ATO) is also acknowledged with gratitude, particularly the assistance and material provided by Messrs. Stuart Hamilton, Michael Jenkins, Brendan Shannon, and Jim Killaly.

Our gratitude also goes to Peter van der Veen, Christopher G. Sheldon, Joel Lachlan Cooper, Randall R. Fox, Komal Mohindra, Sridar P. Kanan, and other colleagues from the World Bank Group whose guidance, support and contributions made this work feasible. We also thank the internal and external reviewers of this book whose specialized comments and editorials contributed significantly to the accuracy and quality of this publication. In particular we wish to recognize the significant contribution made by Prof. Lorraine Eden of the University of Texas, Mr. Michael Jenkins of the Australian Taxation Office, Mr. Lee Corrick of the OECD and Messrs. Michael Jarvis, Tuan Minh Le, Richard Stern and Jan Loeprick of the World Bank Group.

Our recognition goes to the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) for facilitating the publication of this reference guide.

Disclaimer

The advice offered in this book is general in nature and not specifically directed to the particular situation of any individual country. Governments or other entities or persons seeking to improve their transfer pricing policy, legislation and implementation rules and procedures for more effective and efficient collection of mining taxes should consider their particular needs and circumstances and seek further specific advice beyond that offered in this book. The authors cannot accept responsibility for any loss occasioned by any person acting or refraining from action on the basis of material contained in this book.

Precis

The World Bank Group, led by the Energy and Extractives Global Practice, has been at the forefront of offering advice on good practices, as well as on undertaking diagnostic visits and building capacity of developing countries on mineral tax administration. It has adopted a phased approach—wherein it undertakes research and disseminates findings through publication of the results which informs the development of training modules delivered through workshops. The first phase of work led to the publication of the sourcebook titled "How to Improve Mining Tax Administration and Collection Frameworks."[1] The document provides policy makers and other stakeholders with a framework to assess and process various types of royalties systems; principles of their administration including valuation points, costs deductibility, assessments and auditing; elements of mining specific components of corporate income tax; implications of some incentives and their possible impacts on tax payments; procedures for administering various types of payments to Governments, human resources, institutional collaboration, coordination, and capacity building; and information sharing required to drive compliance of mining taxation payments. The work has been more focused on revenues accruing starting from the development stage and on informing strategies to drive compliance of payments while acknowledging governance is also a significant influencing factor.

The need for a complementary study focusing on transfer pricing (TP), specifically in the context of mining in developing countries, was clearly identified by a number of reviews and workshops conducted by the World Bank Group (WBG) during phase one. This was later corroborated by a TP questionnaire administered to a large number of tax administrations in Africa,[2] which indicated that while most administrations have in place or are in the processes of developing an adequate legislative basis to address TP issues, with a few exceptions, enforcement of TP rules to date has been modest or lacking all together. This state of affairs is attributable inter alia to the limited capacity of most tax administrations to deal with the complexity of TP issues in mining because of both a lack of specific TP expertise and of intimate knowledge of this industry sector, which is largely attributable to the current inadequacy of the resources that most African governments can direct to address this situation and access to relevant information from the taxpayers. This study has been conducted with cognizance of the G20/OECD's BEPS Action Plan, the views expressed in the related discussion papers and industry's comments, and its final recommendations released at the end of 2015.

Of particular concern to developing countries is the current trend for multinational enterprises (MNEs) to fragment their mining operations in such a way that many functions, assets and risks are located across entities or hubs frequently resident in low-tax jurisdictions. MNEs generally contend that consolidation of specialized functions into hubs servicing their global operations is not driven primarily by tax-minimization considerations, but by the objective of achieving critical mass, proximity to customers, shipping and trade centers, and having research facilities in desirable locations that optimize execution of their business activities. While in the final analysis MNEs exercise their discretion as to how they wish to structure their global business to achieve the best outcome for their shareholders, they must ensure that the degree to which the tax base of the source country is eroded as profit is shifted abroad is commensurate to the value actually added by their overseas subsidiaries.

[1] Available at: http://hdl.handle.net/10986/16700

[2] The African countries which responded to the transfer pricing questionnaire are listed in Appendix B.1.

In some cases, fragmentation of the supply chain results in the mining subsidiary in the source country performing mostly routine functions utilizing primarily tangible assets, that is to say operating as 'contract miners' do. By contrast, many of the specialized services are provided to the miner through cross-border transactions with related parties on the basis of TPs that are difficult to verify and audit and, therefore, open to interpretation and possible manipulation.

It has also been widely recognized that developing countries are experiencing difficulty in applying the OECD's TP Guidelines and methodologies to verify industry's compliance with the arm's length principle because of the paucity of comparables with relevance to mining in the African context, an issue which is currently being reviewed under a G20 mandate by the OECD, WBG and IMF. The picture may be further complicated by the possible presence of double taxation agreements (DTAs) that in some cases may create opportunities for 'treaty shopping'.

Clearly no tax administration is in a position to systematically audit all areas of risk to government revenue. It was intended that this study should help most by focusing specifically on mapping the TP risk points at various stages of the mining supply chain with the objective of assisting in formulating effective strategies to prioritize the TP audit efforts and concentrate scarce resources and training toward financially significant high-risk transactions, while devising simplified methodologies to address routine low-risk transactions. To achieve this, a detailed functional analysis of all the activities involved in the mining value chain was carried out, including consideration of the typical assets and risks involved in them. In addition, an inventory of all the mining projects for major commodities in Africa was acquired and the various operations categorized in terms of their size/ore throughput and whether open pit or underground. On this basis a breakdown of the capital and recurrent operating cost components for various types and sizes of mines was produced for the different commodities to get an idea of the magnitude of the cash flows involved in the various key functions and of the potential scale of and susceptibility to TP risks of the related transactions. This analysis, complemented by discussion of some illustrative case studies, not unexpectedly highlighted that the main areas of risk in terms of government revenue are in the provision of marketing, finance, engineering and technical services and of insurance and legal services and, to a lesser degree, of routine corporate services.

The study also considered the skills inventory and structural, procedural, internal and external communication options and strategies that would contribute to creating an effective and efficient tax administration in terms of its TP related activities in a developing country and advanced suggestions as to how to pursue them. Besides specific training initiatives, these included seconding of external experts in tax administration to facilitate process improvement and knowledge transfer, greater co-operation and pooling of specialized transfer pricing resources between different jurisdictions, including the establishment of ad hoc or regional Multinational Transfer Pricing Units (MNTPU), in line with the OECD's Tax Inspectors without Borders initiative, supported by well-constructed knowledge-sharing and e-learning platforms. In essence the main findings of the study as presented in this Guidebook are of practical relevance to the needs of tax practitioners in mineral-rich developing countries, assisting in their progressive development and implementation of good TP policy, rules, systems and procedures aligned to the fundamental arm's length principle.

1 Introduction

This publication presents the results of a study on transfer pricing (TP) with specific focus on mining in Africa commissioned in early 2014 by the World Bank Group (WBG) in partnership with the International Mining for Development Centre (IM4DC).[3] The study, which was coordinated by the Centre for Exploration Targeting (CET)[4] and benefitted from inputs from a range of other relevant organizations, represents a component of a more broadly based effort undertaken by the WBG and IM4DC to identify the needs of, and strengthen the mining taxation administration and collection frameworks and capacity of, mineral-rich tax jurisdictions in Africa as well as other developing countries.

This reference guide is a part of the wider WBG engagement in supporting countries with Domestic Resource Mobilization (DRM) by protecting their tax base and has benefitted from effective collaboration with the International Finance Corporation,[5] and with the South African Revenue Service (SARS). Because of its specific focus on the mining sector, this reference guide represents a valuable complement to the WBG's more broadly based handbook on *"Transfer Pricing and Developing Economies"* which is being published concurrently with it. References to relevant chapters of this handbook are provided for readers throughout the report.

While mineral commodity prices have fallen significantly since their peak in 2012, lessening somewhat the political pressure to reform and build administrative capacity in mining taxation, they will invariably recover in the medium term. It would be foolish not to recognize that mining will continue to be a cornerstone of economic development in Africa and, as a consequence, pressing on to resolve mineral taxation related issues is a matter of urgency.

Phase III of the project has now been planned to cover the production of an abridged version of the handbook written for a less versant, broader audience with specialized tax matters and practical training materials to support future training workshops specifically focused on transfer pricing in mining to be delivered in Africa and elsewhere.

1.1 Needs Identification

In response to concerns from African countries that their tax revenues from the mining sector did not adequately reflect recent increases in commodity prices and companies' profits, in 2011 the WBG contracted the CET to conduct research and field reviews of the mining taxation policy and administrative procedures of a number of mineral-rich Sub-Saharan African countries. Co-funding

[3]The International Mining for Development Centre (IM4DC) is a partnership between the Universities of Western Australia and Queensland funded by the Australian Department of Foreign Affairs and Trade (DFAT).

[4]CET is an unincorporated joint venture between the University of Western Australia, Curtin University and the mining industry, established with seed funding provided by the State of Western Australia under their Centre of Excellence Program.

[5] IFC—Advisory Services, now part of the Trade and Competitiveness Global Group.

for this program was subsequently provided by the IM4DC in 2013. To date, reviews have been conducted in Mali, Burkina Faso, Ghana, Namibia and Tanzania.

Insights from the first three reviews were captured in 2013 in a WBG-CET publication entitled *"How to Improve Mining Tax Administration and Collection Frameworks: A Source Book."* This publication is now used as the basis for workshops attended by senior tax practitioners from the Ministries of Finance and Mines of a large number of resource-rich countries.[6] The workshops conducted to date in Ghana, South Africa, Tanzania and Ethiopia have proven invaluable in facilitating exchange and cross-fertilisation of ideas and in identifying pressing emerging mining taxation issues such as the high vulnerability of tax revenues to transfer mispricing in the mining sector. The UN's Economic Commission for Africa (UNECA)[7] estimated illicit financial outflows from Africa due to mispricing at USD50bn a year, echoing the African Development Bank that specifically identified ". . . inefficient taxation of extractive activities and the inability to fight abuses of TP by multinational enterprises . . ."[8] as a significant cause of tax base erosion in developing countries.

Research and capacity building in the area of transfer pricing in the mining sector is crucial, particularly given its rapid growth in economic importance,[9] its global nature and high technical and logistical complexity, and the prevalence of multinational enterprises (MNEs) as the main actors in the sector.

It must be emphasised that the scope of this guidebook is limited to transfer pricing in mining and does not cover other forms of possible revenue leakages as, for instance, due to corruption in industry and government practices, trade misinvoicing,[10] inappropriate tax incentives, fiscal regimes unattractive to FDI, inadequate mining tenement charges, company failures, etc.

The trend has been for MNEs to fragment their supply chains through complex corporate structures of subsidiaries, often registered in low-tax jurisdictions, process and/or market the mining products, and provide a range of services and assets to mining subsidiaries in developing countries resulting in high volumes of cross-border transactions between related parties. This has the effect of shifting taxable income from the country where mining takes place to foreign jurisdictions. Some MNEs further reduced the total tax levied by the source country by locating their overseas subsidiaries in a manner that exploits existing networks of double taxation agreements (DTAs), limiting withholding tax rates. The challenge is for source countries to apply a treaty policy that is better aligned with their interests, including revision and cancellation of existing DTAs. While the substance and justification for these structures might be questionable, these tax minimisation strategies are nonetheless often legal.

By contrast some MNEs that exploit opportunities for transfer mispricing by undercharging for outbound supplies of mineral products and overpaying for inbound assets, services and finance provided by their subsidiaries to their mining operation further erode the tax base of the source country.

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[6]Workshops are typically attended by around 40 to 50 delegates from around a dozen different countries within reach of the selected venue.

[7]United Nations' High Level Panel of the Economic Commission for Africa, 2014, Progress Report on Illicit Financial Flows entitled "Track it! Stop it! Get it!"

[8]African Development Bank Group, "Domestic Resource Mobilization across Africa: Trends, Challenges and Policy Options," Washington DC, 2010.

[9]The World Bank 2013 overview indicates that growth in GDP in Africa is expected to exceed 6% p.a. over the next decade in part because of higher than average growth rates in a third of its Sub-Saharan countries, many of which are mineral rich.

[10]UNCTAD, 2016, Trade misinvoicing in primary commodities in developing countries: The case of Chile, Côte d'Ivoire, Nigeria, South Africa and Zambia.

It is widely recognised that administration of transfer pricing legislation[11] and ensurance of compliance with the arm's-length principle pose a significant challenge for developing countries in assessing whether the transfer prices used, that is to say the price imputed to goods and services transferred in transactions between related-parties, are in line with those that would have been agreed to by independent parties under comparable circumstances. These difficulties arise due inter alia to the current inadequate resourcing with consequent paucity of specialist auditing expertise in the tax authorities of many developing countries, and the general difficulty and cost in obtaining relevant information (OECD, 2014).[12]

In the mining sector, these challenges are compounded by the relative complexity of the sector, which can involve high-value transactions often including hard-to-value intangibles and by a lack of comparable industry specific data, knowledge and experience within tax administrations.

Erosion of the tax base of some developing countries is further aggravated by poorly conceived fiscal incentives, particularly certain forms of tax holidays and generous capital and depletion allowances, which were provided in the past in an effort to attract FDI in mineral exploration and mining at times of lower commodity prices. These concessions were often made with inadequate understanding of their potential long-term consequences and locked in by stability agreements which restrict the capacity of governments to realign their fiscal packages at times when rising commodity prices leverage companies' profits well in excess of corresponding rises in government revenue.

All these factors collectively place significant pressure on the administrative and resourcing capacity of many tax administrations, limiting their current capacity to adequately monitor and address transfer pricing risks, creating opportunities for TP mispricing.

The action plan recommended by the OECD (2013)[13] and the final reports (2015)[14] to address base erosion and profit shifting (BEPS), particularly the revised chapters of the OECD TP Guidelines, and initiatives by the UN (2011)[15] and other major international institutions besides the WBG, are initial steps in specifically addressing the unique characteristics of transfer pricing issues arising in the mining sector, which are critical in the context of developing countries.

1.2 Objectives and Nature of the Current Study

The current study complements initiatives by the WBG and other international institutions, which deliver economy-wide technical assistance on the implementation and enforcement of transfer pricing legislation, by focusing specifically on the mining sector in mineral-rich developing countries, particularly in Africa.

The objective of the study was to fill some of the identified expertise gaps by specifically mapping the key related party transactions and transfer pricing risks at various stages of the mining value-adding chain to formulate a practical framework to assist tax administrations in mineral-rich developing countries with prioritization of their transfer pricing audit efforts. The aim is to concentrate scarce resources and training toward financially significant high-risk transactions, i.e., the more complex the arrangement with high cash flows, hard-to-value specialized expertise and

[11]If a country has no transfer pricing legislation, it might be able to address TP issues relying on its domestic law (including any DTAs which may be in force) and on more general law arguments, such as substance over form, legal characteristics or even other tax outcomes available under their law (e.g., anti-avoidance). This does, however, risk coming at the cost of undermining the investment climate by reducing the predictability of tax administration.

[12]OECD (2014). Transfer pricing comparability data and developing countries, OECD Publishing, Paris.

[13]OECD (2013). Action Plan on Base Erosion and Profit Shifting, OECD Publishing, Paris.

[14]OECD (2015). 2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[15]UN (2011). Transfer Pricing Practical Manual for Developing Countries, OECD Publishing, Paris.

use of intangible assets. The use of simplified methodologies or preventative measures (such as legislative or practical safe harbors or advanced pricing agreements) may be considered to address routine or low-risk transactions. These measures are viewed as a way for tax administrations to manage the use of their own scarce resources and lower the compliance costs providing valuable certainty to miners. However, due to the complexity and time required to put such measures in place, the decision to adopt them would ultimately rest with individual jurisdictions and are infrequently used in Africa.

Finally, the study was also designed to identify and highlight critical capacity building and specialized training needs in the area of transfer pricing in the African mining sector, and present possible strategies to effectively address their delivery.

It was intended that the results of the study should be captured and presented in the form of this sourcebook, compiled with the aim to be a practical reference for tax officials in mineral-rich developing countries, to assist them with the identification, prioritization and addressing of key transfer pricing risks, in support of their progressive development and implementation of good TP policies, rules, systems and procedures in their countries aligned with the fundamental **arm's length principle (ALP)**.

The study was initiated and supervised by Mr. Boubacar Bocoum of the WBG and technically directed by Prof. Pietro Guj of the CET. Although this study was co-ordinated by the CET, it made use of expertise and information provided by a number of participating organizations and individuals. These included, besides the WBG, the University of the Witwatersrand, tax authorities in key mineral economies (e.g., the Australian Tax Office [ATO] and the South African Revenue Services [SARS]), and mining taxation practitioners from both industry and accounting firms, particularly Transfer Pricing Associates (TPA).[16]

1.3 Structure of This Guidebook

The Source Book opens with this ***Introductory*** chapter identifying the need for the study and the way it was conducted. This is followed by the main body of the book that includes three parts. **Part A (The mining industry and transfer pricing)** identifies what are the most common transfer pricing issues in mining in general and where they are likely to occur along the mining value chain. **Part B (The mining industry in Africa and transfer pricing)** considers the same issues specifically in the context of the main commodities currently mined in Africa. This part and its related appendices provide a comprehensive inventory of current mining operations in Africa and information about the revenue and cost structure of typical operations to help establish a methodology for the assessment and prioritisation of transfer pricing risks, supported by practical examples and case studies. **Part C (Institutional and administrative capacity)** then relates to the question of how to prioritise and address the issues covered in Parts A and B and discusses the resourcing, skills and organizational structures necessary to ensure that the arm's length principle is successfully abided to. In more detail:

Part A, ***The Mining Industry and Transfer Pricing:***

- Analyzes the nature of the mining cycle and the various stages of its value chain in general terms from mineral exploration, through mining and processing to the marketing of its final products.

[16]TPA's contribution includes licence to access and reproduce material from their "Transfer Pricing Handbook for the Mining Industry," 2012 currently accessible on their web site, www.tpa-global.com

- Maps the main activities carried out in each stage and the functional supplier-user relationship between successive functions, as well as their likelihood of resulting in cross-border, related-party transactions involving TPs.
- Considers their characteristics (whether routine or complex), the tangible versus intangible assets/intellectual property content provided and the degree of risk borne by the parties as key factors in determining an appropriate TP.
- Analyzes this information with the aim of highlighting the main TP mispricing risk points in each of the mining stages to help concentrate auditing efforts, given the limited available specialised expertise and resources, to high-value/high-risk transactions, identifying opportunities where procedural simplification may be achieved at low cost to revenue.
- Discusses the MNEs' use of 'hubs', particularly for the provision of marketing, technical-scientific, financing and insurance services, and how this type of business structuring and the location of the relevant subsidiaries in carefully selected low-tax jurisdictions may minimise an MNE's total taxation at the consolidated level by shifting profits out of mineral-producing countries.

Part B, ***The Mining Industry in Africa and Transfer Pricing:***

- Discusses the economic importance and future potential of the mining industry in Africa in general.
- Reviews the current stage of legislative development and administrative enforcement of TP rules specifically in the context of developing countries in Sub-Saharan Africa, making use of both published information and responses to a comprehensive TP questionnaire administered to around twenty selected mineral-rich countries.
- Locates all current mining operations and advanced mining projects relating to the main mineral commodities in various African countries, and for each commodity, categorises them in terms of their size and type of mining method, as well as revenue and cost structures/characteristics with a view of identifying activities involving large cash flows and potential risks to revenue. This background is presented in the form of a comprehensive database and extensive descriptions of the characteristics of individual commodity groups provided as appendices.
- Considers the main mineral products and the way they are typically marketed for each of the commodities.
- Illustrates with selected examples and case studies typical TP issues relevant to individual commodities with particular emphasis on their pricing and marketing.

Part C, ***Institutional and Administrative Capacity:***

- Provides a detailed explanation of the processes involved in industry risk profiling and audit case selection.
- Discusses the complexity and challenges in soliciting relevant and timely information and in achieving a successful and ideally cooperative taxpayer relationship, thus encouraging compliance.
- Considers the appropriate structuring and administrative and resourcing implications for African taxation authorities to be enabled to broadly audit industry's compliance with the current and recently reviewed OECD Guidelines, following implementation of the BEPS Action Plan.
- Identifies capacity building and specialised training needs and strategies that could be implemented to progressively improve the prioritisation and effectiveness of TP audits.

The book closes with a ***Discussion and Conclusions*** chapter which summarizes the results of the study and the main strategies identified as appropriate to improve industry's compliance with sound TP principles and the capacity of tax authorities to carry out an adequate level of effective TP auditing, thus minimizing revenue leakages.

Relevant examples and case studies are provided throughout the text in the form of Boxes identifiable by a distinctive greenish-grey colored background. In addition 'Key take-away points' Boxes are also provided as needed at the end of selected chapters and are identifiable by their distinctive cream colored background.

The book also includes a glossary, extensive references, and a range of relevant appendices complementing each of the above parts.

1.4 Outline of Transfer Pricing Principles and Methods

Model tax conventions have been developed by both the OECD[17] and by the United Nations[18] to reduce the risk of double taxation and to allocate or share taxing rights between countries. These models address transfer pricing for tax purposes using the internationally accepted standard of the **arm's length principle,** as set out in Article 9 (Associated Enterprises) by the OECD[19] and in the UN Model Double Tax Convention. Accordingly, countries comply with these international obligations by including the arm's length principle in their domestic tax provisions dealing with related-party arrangements which authorize their tax administration to make transfer pricing adjustments, where necessary, to the tax payable by a company. In practice, MNEs have to determine the profits of their subsidiaries or permanent establishments (branches)[20] as if each were an independent enterprise dealing at arm's length.

To harmonize international transfer pricing policies and practices, the OECD has developed and regularly updates its OECD *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (2010). These guidelines have been updated in line with the best practice recommendations contained in the OECD's various *BEPS 2015 Final Reports*. In addition, in 2011 the UN complemented the OECD guidelines by issuing their UN Transfer Pricing Manual[21] which provides methodologies to assist both industry and tax authorities in determining whether transfer prices adopted in related-party dealings are consistent with the arm's length principle.

Clarification and strengthening of the OECD Guidelines have occurred as a result of the BEPS 2015 Final Report for Action 8–10.[22] Significant revisions of the guidance for application of the arm's length principle have been provided[23] as well as revision of intangibles,[24] low value-adding intra-group services[25] and cost contribution arrangements.[26] These revisions focus on three key areas:

- Intangibles (Action 8),
- Allocation of risks (Action 9),
- Other high risk areas (Action 10), including continuation of scope for tax administrations to not recognise or to modify transactions that are not commercially rational.[27]

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[17]OECD (2014), Model Tax Convention (condensed version).

[18]United Nations Model Double Taxation Convention between Developed and Developing Countries, 2011 update.

[19]The arm's length principle states that where "conditions are made or imposed between the two enterprises in their commercial or financial relations which differ from those which would be made between independent enterprises, then any profits which would, but for those conditions, have accrued to one of the enterprises, but, by reason of those conditions, have not so accrued, may be included in the profits of that enterprise and taxed accordingly."

[20]Article 7(2) Business Profits of the OECD Model Tax Convention deals with attribution of profits between a permanent establishment (a branch) and the broader enterprise.

[21]United Nations Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2013.

[22]OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris. DOI: http://dc.doi.org/10.1787/9789264241244-en

[23]Revised Section D of Chapter I of the Transfer Pricing Guidelines.

[24]Revised Chapter VI of the Transfer Pricing Guidelines.

[25]Revised Chapter VII.

[26]Revised Chapter VIII.

[27]See pages 40–42, paras 1.119–1.128. OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

Importantly, additions have been made to Chapter II of the OECD Guidelines specifically for the pricing of commodities[28] and further work is to be undertaken to provide knowledge, best practices and tools for commodity-rich countries.[29]

The OECD Guidelines present **five methods** which are used to apply the arm's length principle (see paras 2.12–2.55) including:

- Three **traditional methods,** i.e.:

The **Comparable uncontrolled price (CUP) method** directly compares the price charged for property or services transferred in a controlled transaction to that charged in a comparable uncontrolled transaction under comparable circumstances where available.

Adjustments may be needed to achieve comparability and five comparability factors[30] are identified in this regard (see para 1.36–1.63). The reliability of the CUP method is affected by the degree of accuracy of the adjustments made.

The CUP method would generally be an appropriate transfer pricing method for commodities and reference may be made to comparable uncontrolled arrangements in certain circumstances (i.e., where there is a price quoted in an international or domestic commodity exchange market).[31]

The **Resale price (RSP) method** derives the price at which a product has been purchased from an associated enterprise by netting from the price at which it has been subsequently resold to an independent buyer an appropriate gross margin. This margin represents the amount which the reseller would seek to cover its selling and other operating expenses and, in light of the functions performed (taking into account assets used and risk assumed), make an appropriate profit. This method is most useful where applied to marketing operations.

The **Cost plus (CP) method** applies an appropriate markup to the costs incurred by the supplier of property or services to an associated purchaser in a controlled transaction. The markup represents an appropriate profit in light of the functions performed and the market conditions. This method is most useful where semifinished goods are transferred or services provided between associated parties, under joint facility or long-term supply arrangements.

- And a further **two transactional profit methods** (see paras 2.56–2.149), i.e.:

The **Transactional net margin method (TNMM)** examines the net profit that a taxpayer realises from a controlled transaction or aggregate transactions relative to an appropriate base (e.g., costs, sales, assets). It operates in a manner similar to the cost plus and resale price methods but requires the selection of the most appropriate net profit indicator and its weighting. TNMM is suitable for cases where one of the parties makes all/most the unique contributions involved in the controlled transaction.

The **Transactional profit split method (PSM)** determines the division of the profit from a controlled transaction between associated enterprises on the basis of what independent enterprises would have agreed at arm's length and expected to realise from engaging in the same transaction

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[28]Paras 2.16A–2.16E added into Chapter II of the Transfer Pricing Guidelines.

[29]See page 52, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[30]Main comparability factors:

I. Characteristic of the property or services transferred
II. Functions performed by the parties (taking into account assets used and risks assumed)
III. Contractual terms
IV. Economic circumstances of the parties
V. Business strategies pursued by the parties.

[31]As a result of BEPS Final Report actions 8–10 and additions to Chapter II of the Transfer Pricing Guidelines.

under the same conditions, not limited to price consideration. This method can offer a solution for highly integrated operations for which a one-sided method would not be appropriate and also be most appropriate where both parties make unique and valuable contributions to a transaction. Guidance to strengthen and clarify application of this method is being developed by the OECD during 2016 for release in 2017.[32]

In practice, the level of information available is often inadequate to conduct a satisfactory comparability analysis and some flexibility and the exercise of good judgment (see paras 2.68 and 1.13) become necessary in reaching a reliable arm's length estimate. To alleviate these constraints, many jurisdictions have been tightening up their legislative requirements for appropriate disclosure and contemporary documentation and further relief will be provided upon implementation of the BEPS country-by-country (CbC) reporting requirement, even though the latter is weakened by its lack of line items detail and by the limitation to companies with a gross turnover greater than US$750 million.

The OECD[33] has also considered, at the request of some developing nations, the use of the so-called **'sixth method'** which makes mandatory use of publicly quoted prices for commodities on their shipment date to a related party. This method, initially employed in Argentina, has now been adopted by most South American countries and by India.[34] The OECD recognises its primary benefit in providing a clear and certain benchmark for transactions between related parties but is concerned about it resulting in non-arm's length prices where excessive divergence may arise between the conditions of the actual transactions and the publically quoted prices. The OECD indicates that the method may be considered an appropriate anti-avoidance approach depending on the extent of the risk, likelihood of tax avoidance and practical difficulties in applying the arm's length principle given information or capacity constraints for transactions involving jurisdictions with low or zero tax rates and counterparties that perform only very limited functions.

Adherence to the OECD Guidelines should result in MNEs' subsidiaries or branches[35] having clearly articulated policies that ensure that they comply with the arm's-length principle, using the most appropriate of the five transfer pricing methods. Additionally they would be expected to maintain an adequate level of documentation (including contemporaneous documentation) relating to the setting of their transfer prices and to make it available to the tax administration as required. Many tax administrations also require information about the nature of the activities and value of related party transactions to be reported on an annual basis. This documentation is likely to include aspects of the new three tier reporting standards (master file, local file and country-by-country reporting) set out in the BEPS Final Report Action 6.

Guidance on the application of the arm's length principle and the use of transfer pricing methods and on undertaking a comparability analysis is provided in Chapter 4 of the general WBG handbook on *"Transfer Pricing and Developing Countries."*

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[32]See pages 55–56, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[33]OECD, 2014, Transfer pricing comparability data and developing countries.

[34]PriceWaterhouseCoopers, PKN Alert, January 29, 2013.

[35]A subsidiary is a separate legal entity from the parent company, and a mining subsidiary will generally be a resident of the host African country. A branch is an integral part of a non-resident entity—they are legally one and the same. Branches (also known as permanent establishments) are generally taxed by the host country on their profits attributable to the business operated in that country. Transfer pricing by a branch in relation to its dealings with other parts of the entity or with other related entities, is generally subject to the arm's length principle (either under relevant domestic law and/or the Business Profits article of a relevant DTA).

1.5 Transfer Pricing Is Only One Aspect of a Multifaceted Problem

Administrative complexity is compounded by the need to achieve a smooth interface between domestic transfer pricing legislation and administrative practices, and compliance with the arm's length principle (ALP) and the five transfer pricing methodologies presented in the OECD Guidelines. This must often take place against a background of other complex to administer, domestic legislation (e.g., thin capitalization, controlled foreign corporations (CFC) and withholding taxes (WHT) for dividends, services, interest and royalty payments remitted to nonresidents) and double taxation agreements (DTAs). WHT can play an effective role in protecting revenue in developing countries where TP legislation and administrative capacity is in most cases inadequate. African countries, which generally are capital importers and exporters of mineral commodities, may need to be cautious about creating DTA networks with developed countries as the related benefits may not be adequate compensation for their foregoing potentially significant taxing rights. This may explain why Mongolia and Argentina, for instance, cancelled some of their DTAs that they believed were being misused. It also explains why MNEs favour the establishment of DTAs as an investment incentive, purportedly to avoid double taxation, even though most developed countries avoid double taxation by credit or exemption provisions in their domestic legislation. As the economy of a country develops and diversifies, the benefits of entering into a DTA may overcome its drawbacks providing greater certainty for investors and promoting a fairer arm's length allocation of taxable income.

The complexity of administering some of these arrangements can impose a significant burden on the current administrative and resourcing capacity of many developing countries, particularly in Africa. The administrative challenge is exacerbated by the general scarcity within many tax authorities of technical knowledge about mining processes and related cost structures, commodity pricing structures and the key value drivers in the mining supply/value chain of individual commodities. This is further exacerbated by the paucity of relevant domestic comparables, the high cost of subscribing to comparables databases, and difficulty in adapting them for use in developing countries. Things are also not helped by the unwillingness of some taxpayers to provide adequate information within an effective timeframe and the difficulty in obtaining data from offshore jurisdictions regarding some of the selected tested entity's foreign related party transactions. Negotiation of Exchange of Information (EOI) agreements with the countries of residence of relevant MNEs' subsidiaries and/or, deeming rules to apply where information is not provided, may prove effective in overcoming some of these issues.

Against this background it makes sense for any future strategy contemplated by international capacity building institutions, such as the OECD, to be based on introducing TP rules that are clear, as simple as possible to apply and likely to be adopted by African jurisdictions—identifying and taking into account general gaps in terms of critical taxation administrative skills and resourcing in those jurisdictions. This challenge and the need for simplification have been recognized by the United Nations (UN) (2011) in their "Transfer Pricing Practical Manual for Developing Countries"; by Euroaid in their recent (2012) report entitled "Transfer Pricing and Developing Countries" and more recently by the OECD (2014),[36] which has focused on the specific issue of TP comparability data in the context of developing countries, an issue that has shaped the scope of their TP assistance and training offered to developing countries.

Some jurisdictions, such as Brazil, China and India, have been making use of non-arm's length methods such as the application of fixed margins to certain transactions where CUPs are not readily available and where other OECD methods have proved difficult or impractical to apply. A more radical position has also been expressed by the Independent Commission for the Reform of International Corporate Taxation, that in fact transfer pricing related problems in developing countries may prove to be insurmountable and that simpler and more innovative approaches, such as Global

[36]OECD (2014), Transfer pricing comparability data and developing countries, OECD Publishing, Paris.

Formulary Apportionment (GFA), that are unrelated to the arm's length principle may be needed. This view is backed by a large number of NGOs, some commentators and conceptually supported by the Nobel Prize winning economist Joseph Stiglitz among others.[37] The GFA approach would allocate global profits of a MNE to its members in different countries on the basis of a predetermined and mechanistic formula. The OECD rejects the GFA approach[38] and does not see it as a realistic alternative to the arm's length principle as it would be difficult to implement, require enormous political and administrative complexity, give rise to risks of double taxation and non-taxation and because it is arbitrary and disregards market conditions and circumstances of the individual entities involved.

Simplification and preemptive approaches adopted in the developed world include safe harbors, application of standard profit margins for designated low-risk routine services and the negotiation of advanced pricing agreements (APAs). The BEPS project specifically considered whether 'special measures', which would not necessarily comply with the ALP, should be applied given the difficulties encountered by some tax administrations and taxpayers in applying the arm's length principle. However, the 2015 BEPS Final Reports emphasize the ongoing applicability of the ALP as opposed to 'special measures' other than the simplification measures referred to above. This conclusion does not preclude consideration and development of safe harbors and the negotiation of Advance Pricing Agreements (APAs) (noting that these approaches do not avoid the analytical challenges to ensure there is compliance with the ALP), nor the provision of guidance to taxpayers on arrangements and outcomes that are considered to be 'low risk'. These measures are the subject of ongoing work on comparability by the OECD and WBG, and more guidance on the use of simplfication approaches is expected to be provided to developing countries in the relevant final report due in October 2016.

Some African jurisdictions have reservations about implementing such measures. This is not surprising as while APAs may be effective, their negotiation may be complex and protracted and involve significant demands on available expertise in TP, which may be deployed on compliant taxpayers. For this reason APAs, although having significant merit, have very rarely been used to date in Africa.

The OECD recognized the TP technical capacity problem and initiated, together with other major international institutions such as the IMF, the WBG, the EU, as well as individual country donors (e.g., Norway, Germany, Australia, etc.), a number of training and capacity-building initiatives as well as funding the provision of relevant expertise. An example is the joint program of the WBG tax team with the OECD and EU with their active involvement and experience in implementing transfer pricing legislation and, in particular, in building capacity in tax administrations, in more than 15 countries (including Kenya, Ghana and Ethiopia, amongst others in Africa) and with more than 10 other projects in the pipeline including with the East African Community (EAC) and the Economic Community of West African States (ECOWAS).

One challenge most developing countries face is the ability to employ, develop and retain transfer-pricing expertise. In this regard, developing countries need to be innovative and strategic. Through the implementation of targeted recruitment and structured training programs, some developing countries are making inroads in attracting, developing and retaining TP skills. Whilst the private sector may offer attractive remuneration, the public sector often offers job stability and security and greater work life balance. Training and development, including challenge and variety in work scope, within the public sector are also often a draw card, and tax administrations in developing countries need to leverage off all that they can offer to attract and retain TP resources.

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[37]The Economic Times (2015). "Rights groups reject OECD approach on corporate tax avoidance." Accessed at http://uk.reuters.com/article/2015/06/02/uk-oecd-taxation-idUKKBN0OI09820150602.

[38]OECD Transfer Pricing Guidelines 2010, paras 1.16–1.32.

Part A

The Mining Industry and Transfer Pricing

This section takes a general approach to identifying the most common transfer pricing issues associated with mining and where they are likely to occur along the mining value-adding chain. It considers the functions performed, the assets utilized and the risk borne by various entities in related party transactions and how they should be taken into account in ensuring that the related transfer prices comply with the arm's length principle. This structured approach will provide an outline of how tax administrations can identify 'who' should be looked at and 'why', and 'how' mining taxable entities can be ranked in order of priority for investigation/auditing through the allocation of scarce tax administration resources. The discussion will be supported by a number of relevant, practical case studies and examples.

2
The Mining Value Chain

Transfer pricing has its basis on functional analysis, which examines the Functions performed, Assets utilized and Risks borne (FAR) by each of the related parties involved in intra-group transactions. The description of the mining industry value chain that follows is designed to provide a clear and specific context and understanding of the mining industry and to facilitate the detailed FAR analysis to be covered later in Chapter 3.

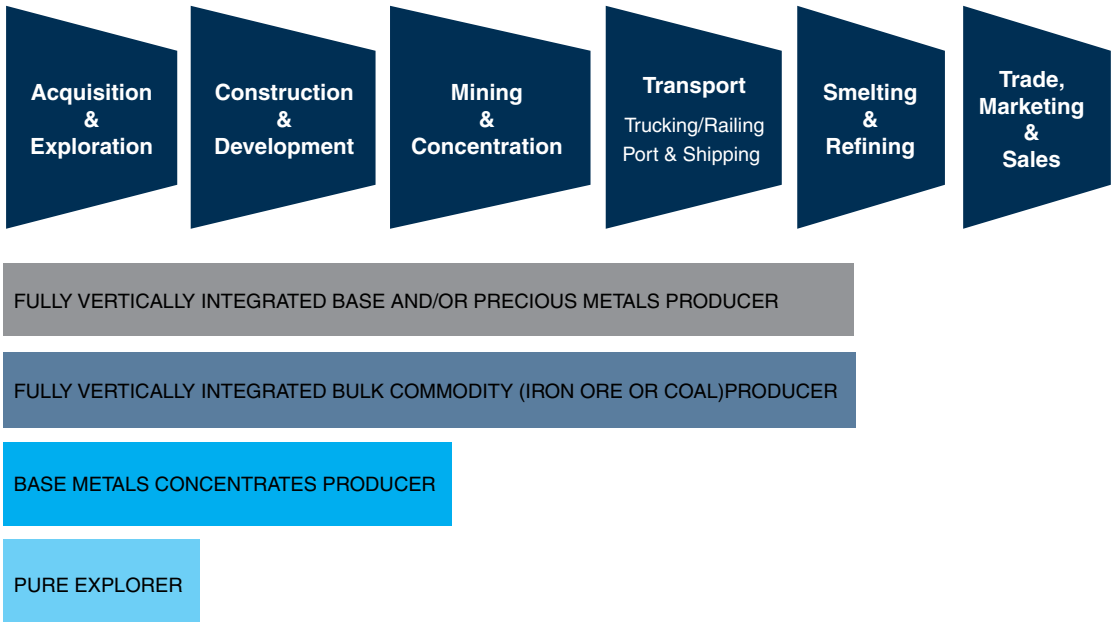
2.1 Mining Value Chain Analysis

2.1.1 Stages of the mining cycle and degree of vertical integration and implications for transfer pricing

Figure A.1 displays the typical stages in the mining value-adding chain from initial exploration to marketing of refined metals on terminal markets. In reality the activities and functions of relatively few mining companies, particularly in Africa, are fully vertically integrated within a single taxable entity.

As shown in Figure A.1, the degree of integration within a single taxable entity depends, to a large degree, on the mineral products sold, with many mining companies producing and selling

Figure A.1: Diagrammatic mining value-adding chain showing the stages undertaken by different types of mining companies depending on the type of mineral product sold



in contestable markets or transferring to related entities, primarily abroad, intermediate mineral products such as:

- **Crushed and screened ore** with no or minimal beneficiation, e.g., bulk commodities such as iron ore, coal, phosphate rock, etc.;
- **Mineral concentrates** and other partially downstream processed, mineral products, e.g., base metals and nickel concentrates; as well as
- **Metals** after smelting and refining.

It is at these different points of sale or transfer that profits taxable in the source country are generated.

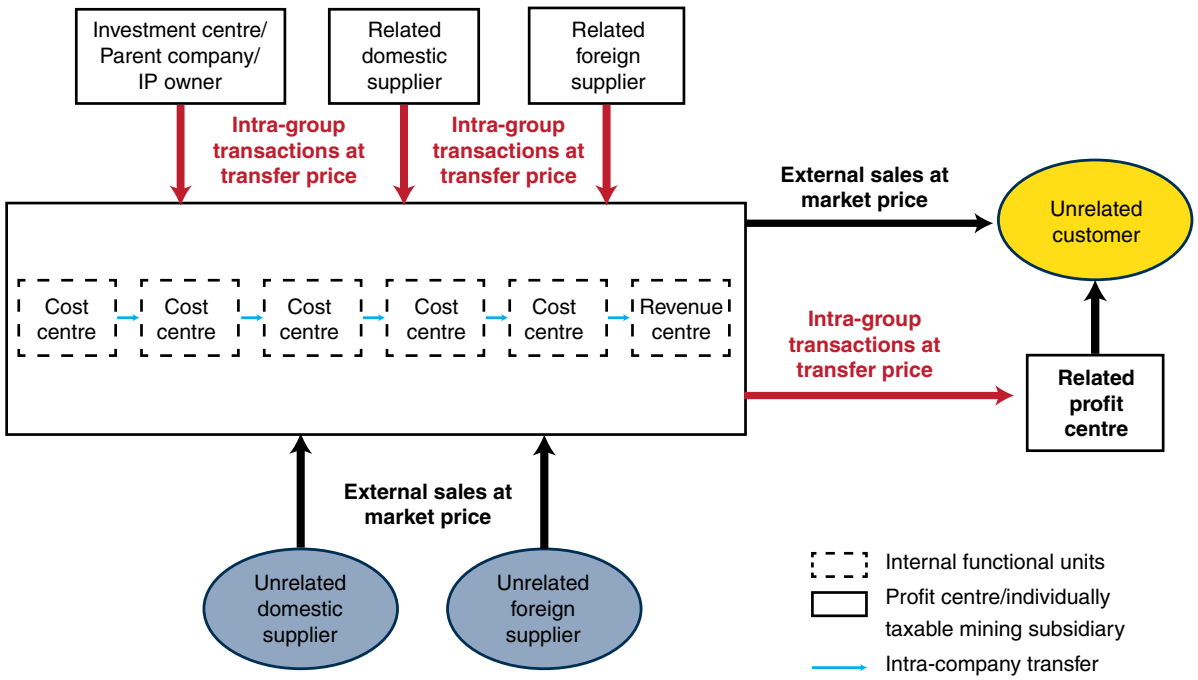
Even where a mining project is fully vertically integrated from the exploration stage to marketing of its refined metals, it is unlikely that all inputs down the value-adding chain would be supplied by internal functional units. Its production process would often involve customer-supplier transactions with either:

- **Unrelated customers and suppliers,** i.e., separate taxable entities not controlled by the MNE, or
- **Related customers and suppliers**, i.e., entities (either subsidiaries or branches) owned and controlled by the same MNE which holds the mining project as shown in Figure A.2, or
- A mixture of the two.

The various activities of a mining company include two types of functions:

- Primary—these are all the functions relating to the exploration, mining and concentrating, transportation, smelting and refining, and distribution and marketing; and

Figure A.2: Diagram displaying cost centers (e.g., a ring-fenced mining subsidiary) and the relationship between internal units and external suppliers and customers, which may be related or unrelated entities



- Secondary—these include all the support functions not directly related to the discovery, extraction and disposal of mineral commodities such as corporate services (accounting, finance, marketing and technical support, HR, IT, insurance, legal, etc.).

It is important to note that this breakup of functions relates to mining companies, not to international mining services firms which would display a different structure.

The Board of an MNE generally concerns itself with matters of governance and the highest levels of managerial decisions delegating authority to the managers of various units 'responsibility centres', determining their maximum span of control and the degree of responsibility and independent authority that managers will be allowed to exercise in line with the desired business strategy, model and structure.

These considerations determine whether a responsibility centre is:

- An expenditure centre, performing highly creative, strategically or operationally necessary tasks, e.g., research and development (R&D), primarily for intra-group use;
- A cost centre, performing mostly core and non-core operational activities, managed by the principal entity, primarily for intra-group use;
- A revenue centre, performing mostly core, market/external customer driven activities, e.g., sales and distribution, designed to maximise quantities and/or price but unconcerned with cost of production;
- A profit centre, performing mostly core, market/external customer driven activities, with focus on profit contribution and quality, i.e., to optimise turnover, unit cost and revenue; or
- An investment centre, performing core, capital market/customer driven activities, primarily for shareholder or the MNE as whole, concerned with return on investment and on IP.

A **profit centre** is given the highest degree of independent decision-making authority and is normally accounted for on a stand-alone basis in terms of its individual contribution to the overall consolidated corporate profit of the MNE. It is generally advantageous for MNEs to run their mining operations in developing countries as profit centres, generally registered as individual subsidiary companies in the host country.

Situations where an MNE carries out its mining business in a developing country in its own right through a local mining **branch** are rare because most African countries generally require that individual mining projects be **ring-fenced,**[39] i.e., each owned and operated by a mining-specific **subsidiary** of the MNE registered and taxable in the host country**.** The use of branches, even if allowed, is generally discouraged by highly differential rates of taxation, which may be a reflection of the limited network of DTAs in Africa.

In the final analysis, the supply chain of any company selling its products into a contestable market (Figure A.2) also includes, besides the contributions from internal expenditure, cost and revenue centers, supplies from both unrelated and related suppliers, which in turn may be domiciled either domestically in the source country or more often abroad.

2.1.2 Transfer pricing as a management accounting method for intra- and inter-group customer-supplier transactions

Management accountants value and attribute transfer prices to the goods and services supplied to internal customers, be it related cost, revenue or profit centers, to assess the performance of

[39]It must be pointed out that while ring-fencing is generally applied throughout the world in the context of mineral royalties, it is not the norm in the context of corporate income tax (CIT) in the developed world where losses can generally be offset against taxable income produced by a related company.

individual responsibility centres. This is done to improve their productivity and as a consequence consolidated profits. For centres providing services that could be obtained at a more competitive price from an alternative external supplier, consideration would be given to their outsourcing or putting improvement measures in place to make them competitive.

Thus, if fairly determined, transfer pricing merely represents a necessary and legitimate method to account for intra-company and related intra-group transactions. As a consequence, there should be no incentive to distort transfer prices purely in the context of management accounting within a single entity, but there may be in the context of cross-border transactions between different related parties of the same MNE, which as discussed below has potentially significant tax implications. For this reason management accounts are often a very useful source of information for revenue authorities and are worth requesting at an early stage as part of the transfer pricing analysis.

2.2 Typical Functions of the Mining Cycle

2.2.1 General classification of related-party transactions in mining

Figure A.3 displays the various stages of the mining value-adding chain from exploration to marketing of refined metals and shows how transactions with related parties may occur at any stage along the chain, subdividing them into the two categories of:

- **Outbound transfers of mineral products** to a related party, and
- **Inbound and outbound transfers** of goods and services from a related party, including:
  - Financial services,
  - Corporate and support services, and
  - Tangible and intangible assets, and technical services involving proprietary know-how, IP and R&D.

It must be appreciated that transfer prices relating to the outbound transfer of mineral products to a related party not only affect the assessment of the taxable income of a project in the context of its corporate income and other tax liabilities, but they may also be of critical importance in determining the value base to which mineral royalty rates are to be applied.

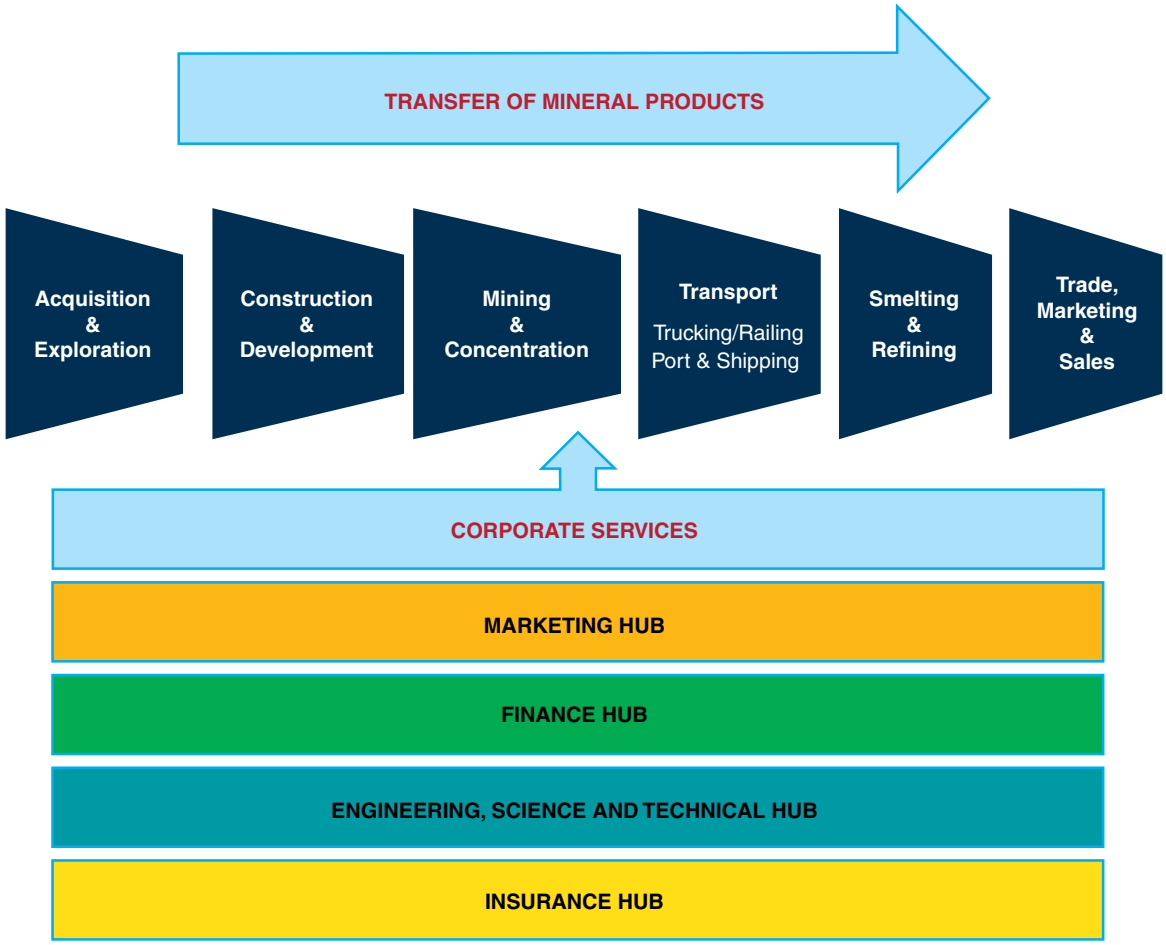
The financial significance of some of the outbound and inbound transfers and transactions with related parties can be very high given the scale of the mining industry, making appropriate estimation of the related transfer prices a critical issue. The degree of risk to revenue arising from these estimations will range from relatively low for routine transactions where comparables are readily available to very high for more complex transactions involving the transfer of hard to value intangibles, both assets and specialized services involving proprietary technology, R&D and IP, patents and licenses, etc.

2.2.2 Specific functions/activities involved at various stages of the mining value chain

It is worth noting that companies involved in the production of different minerals may display different levels of vertical integration from mining to processing to smelting and refining. Companies dealing with ‘new’ metals, such as aluminium, tend to be fully vertically integrated. For instance Comalco at one stage covered the full spectrum of activities from mining bauxite, to alumina production, smelting and refining and manufacturing of aluminium products, all the way to their retail sales. By contrast ‘old’ metals, like iron, traditionally tended to be highly stratified, with a clear distinction between miners and steel mills. A minority of originally integrated firms in recent years have formally separated their mining from their steel-making entities.

It must also be appreciated that the significant capital investment necessary to establish downstream smelting and refining capacity vertically integrated with an individual mining project may

Figure A.3: Mining cycle value-adding chain showing nature and timing of possible related-party transactions



only be justified if the mineral resources are of outstanding size and quality, ensuring a long and secure project life. This, of course, is very seldom the case and the tendency has been for mining MNEs to pursue centralization of their processing capacity exploiting economies of scale by establishing global or regional service hubs, rather than having a multitude of less efficient decentralized local plants. This trend is resented by the countries hosting the mining operations as they would like to see a greater number of jobs created within their territories. In the final analysis, there must be a valid business case to attract the necessary capital to the establishment of downstream processing in the source country.

Each stage in the mining value-adding chain illustrated in Figure A.3 includes a series of typical functions/activities as illustrated below.

2.2.2.1 Acquisition and exploration stage

The objective of this stage is to discover a new mineral deposit and assess its potential to support an economically viable mining operation. Under many jurisdictions exploration is defined as lasting from the initial prospecting and reconnaissance exploration of a site, through mineral discovery and resources delineation to the completion of a feasibility study, i.e., until a decision to proceed with the development of a mine is taken.

The stage commences with the process of companies applying for and of government allocating the right to explore for and subsequently exploit any mineral deposit that may be discovered. The process of issuing exploration and mining licenses/leases, as discussed below, generates various degrees of government revenue and creates assets in the hands of specific entities within an MNE group, not necessarily always in its mining subsidiary.

Exploration is a high-risk activity in the sense that many unsuccessful, individually low-cost but collectively significantly expensive projects need to be undertaken before a mineral discovery is made. It is a capital investment as undeducted exploration expenditure losses, in the form of geological information from surveys, drilling, etc., are capitalized as individual tangible projects and intangible mining rights. Even in the event of a successful feasibility study being concluded, there is still a greater than 10% risk that the project may not live up to expectations and may fail commercially. Profits at the exploration stage are only derived by trading in or assigning the use of these assets.

Figure A.4 diagrammatically shows the series of activities carried out during the acquisition and exploration stage.

2.2.2.2 Mine construction and development stage

This stage lasts from when the decision to develop a mine is taken to the point where ore has been exposed in readiness for mining extraction to start. All the mining assets necessary to extract and process the ore, at a minimum to crushed and screened ore or concentrate, are constructed or acquired and installed ready for use. In practice, some elements of construction and development may continue for a period in parallel to mining after extraction has commenced. It is a capital investment stage involving significant cash outflows to create the asset base and production capacity for the future mining operation and related revenue/profit stream. Depending on the commodity involved, the circumstances of the project and the generally high up-front capital investment, this stage can be high risk and present opportunities for profit shifting through intra-group financing. Chapter 1 of the OECD TP Guidelines as revised by the BEPS Final report for Action 4, relating to interest deduction rules providing useful guidance on allocation to and control of risk by different entities within an MNE and their financial capacity to assume the risk.

Figure A.5 diagrammatically shows the series of activities carried out during the mine construction and development stage.

Figure A.4: Typical activities conducted during the acquisition and exploration stage

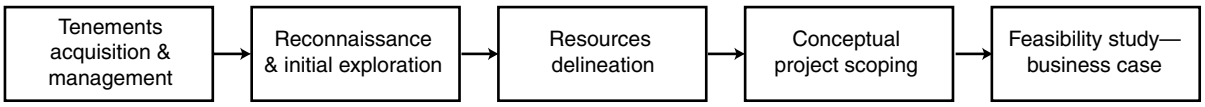


Figure A.5: Typical mine design and construction activities

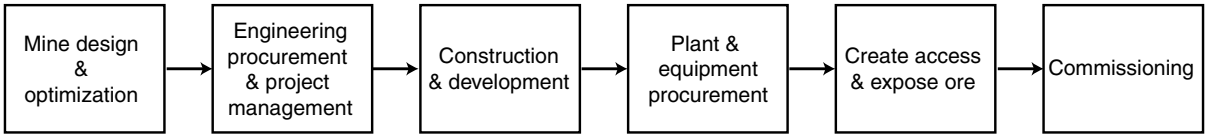
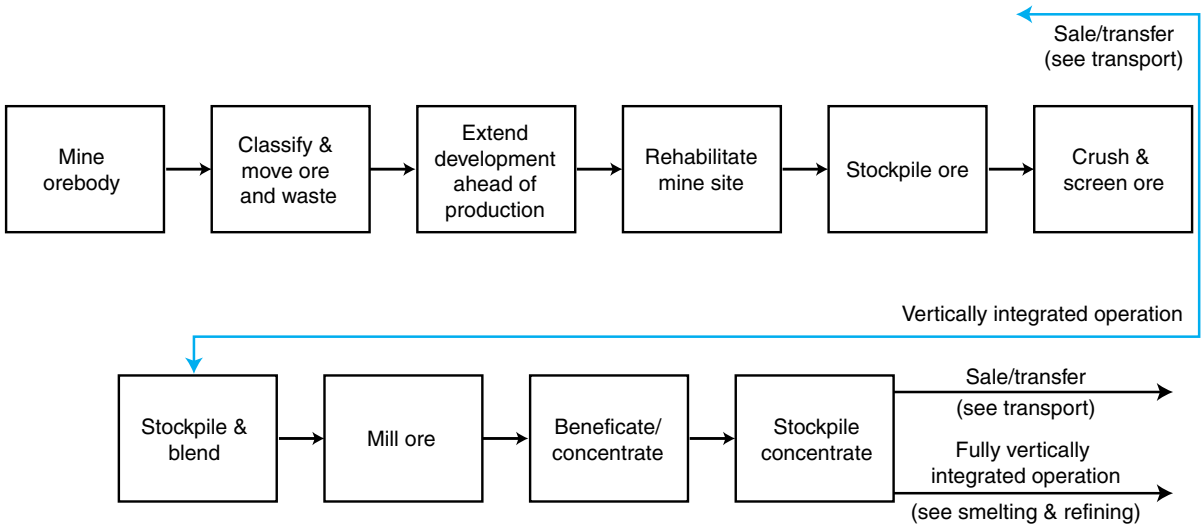


Figure A.6: Typical mining and concentration activities



2.2.2.3 Mining operations and concentration stage

The objective of mining and concentration operations is to extract the ore and separate its valuable minerals from its gangue, exploiting their physical properties (Figure A.6).

Bulk commodities, where the ore contains a high proportion of valuable minerals, are often sold in the form of **crushed and screened ore** after limited blending and/or beneficiation, e.g., iron ore and coking coal to steel mills, thermal coal to power stations, etc. Conveyance of bulk commodities to markets may entail the use of dedicated transport and logistical infrastructure and related services. Assessing the arm's length nature of the related transaction charges is one of the critical areas for tax administrations to address, and there are many cases where such prices have been considered excessive by tax authorities leading to disputes (see section 2.2.2.4 below).

Where the proportion of valuable minerals in the ore is relatively low the ore must be concentrated, and the mine may sell or transfer **concentrates** and/or other intermediate mineral products to smelters and/or end-users. This is the case for most base metals, nickel and some precious metals mines. As concentration reduces the volume of material to be transported, and as a result the related transportation costs, producers of concentrates generally rely on shared transport infrastructure and services. It is worth noting that some ore and/or concentrates can be stockpiled over a significant length of time (e.g., iron ore), while others oxidise (e.g., nickel concentrates) or are easily contaminated (e.g., alumina). This will be discussed further when dealing with marketing hubs.

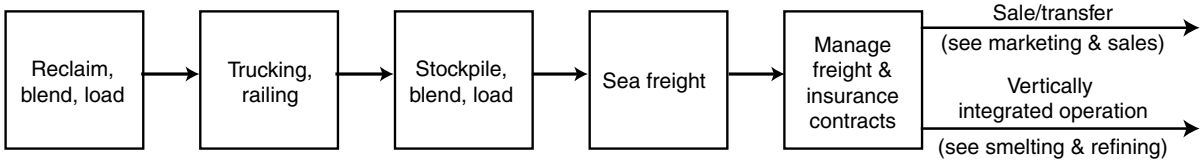
Sometimes smelting and refining may be conducted on or near the mine site, in which case the integrated project may not require significant investment in transportation and logistical assets, or the related operations.

Mining and concentration operations can be either integrated or carried out in the source country by separate, but often related, profit centers that would be individually taxed.

2.2.2.4 Transportation stage: Trucking/railing, port and shipping

With the exception of precious metals and gemstones, which are low-volume and high-value, most other mineral products may make use of specialized transport and logistics infrastructure as well

Figure A.7: Typical transportation activities



as outsourced transport services. This may include road or rail loading facilities, railways and related rolling stock, ports with stockpiling, reclaiming, blending and shiploading facilities.

Some large bulk commodity producers may own and operate heavy rail and port facilities as part of their assets, or they may be provided with transportation and logistics services by a separate subsidiary of the same MNE. This subsidiary in turn may be fully dedicated to the mining project or provide multiuser transport services to other mining operations in the region within the same MNE and/or to unrelated third-party mining operations or other industry sectors. In these cases the setting of the charges for the provision of services to various users, particularly their capital components, may become complex.

In some cases mining companies have found it advantageous to dispose of their transport and logistics assets and instead make use of services provided by third parties. Sometimes, however, the disposal of the transport and logistics assets may be to a related party that is a member of the same MNE group, which brings into play the use of transfer prices.

By contrast, sea freight is frequently provided by independent carriers rather than related parties, with prices set in contestable markets. However, instances do exist where the MNE owns the ore carriers through one of its subsidiaries and provides shipping services to its mining subsidiaries. Similarly, cargo insurance may be provided by either an external insurer or through an entity related to the mining company where use of an external insurer is hard or expensive to procure.

Figure A.7 diagrammatically shows the series of activities carried out in the context of mineral transportation.

2.2.2.5 Smelting and refining stage

The objective of smelting and refining (SR) is to disaggregate minerals into their individual chemical components so that refined metals can be separated from unwanted elements for sale. This stage produces refined metals, e.g., gold, refined copper, lead, zinc, nickel, etc., for transfer to marketers and/or for direct sale into terminal commodity markets.

Vertical integration of dedicated smelting and refining facilities with upstream mining and concentrating activities within a mining company is only justifiable in the few instances where the mine has extensive and generally high-grade mineral reserves, ensuring a long and uninterrupted mine-life. As a consequence, concentrates are often sold to independent smelters that provide processing services under the terms of smelting and refining contracts, generally drafted for common concentrates along traditionally well-established guidelines. However, as discussed later, prices may vary widely as a function of the quality of the concentrates and of their credit and penalty metals.

Figure A.8 diagrammatically shows the series of activities carried out in the context of the smelting and refining stage.

Figure A.8: Typical smelting and refining activities

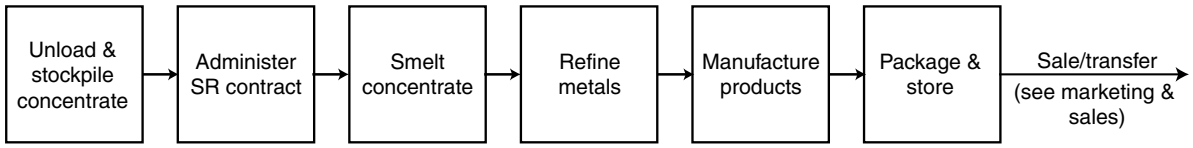
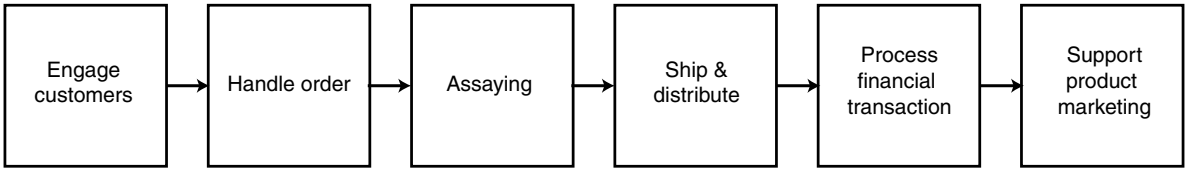


Figure A.9: Typical marketing and sales activities



2.2.2.6 Trading, marketing and sales functions

The objective of this stage is to match demand and supply by bringing mineral products either to terminal markets or by arranging customer-specific sales into specialized, specification-driven niche markets, as illustrated in Figure A.9. Trading, marketing, distribution and sales functions can involve a range of activities, which may vary from routine processing of orders and invoices, customer communication and management (i.e., customer interface) to market research and competitor analysis; development and implementation of marketing strategy and pricing policy; and sorting, packaging and arranging of transportation and shipping of the finished products. Depending on the product, the reputation and market dominance of the producer, etc., may be that a producer of commodities will require a separate trading, marketing and sales function. There has been a trend for centralizing marketing, distribution and sales functions into offshore 'marketing service centers' or 'marketing hubs' servicing various members of a MNE group. This approach has been viewed by tax authorities as presenting high transfer pricing risk to revenue.

Chapter 2 Key Take-Away Points

It is critical that tax administrations

- Recognize the level of vertical integration and develop an in-depth knowledge of the functions performed, assets used and risks assumed at the different stages of the mining value chain for the various minerals mined in their country,
- Clearly distinguish between the functions that are typical of cost centres, from those that would normally be part of a profit centre, and how much value is added by each of them,
- Identify which functions along the mining value chain are performed in the country by MNEs' mining subsidiaries, relating to their outbound sales and transfers of mineral products to related parties and which functions have been outsourced leading to the provision of goods and services from both external and related parties.

3

Typical Mining Industry Transactions Potentially Involving Transfer Pricing

The starting point (acknowledged by the OECD at para. 1.11 in the TP Guidelines) is the recognition that . . . *associated enterprises may engage in transactions that independent enterprises would not undertake*. Questions of economic substance, particularly when evidence suggests a tension between economic substance and legal form, as well as the ability of various entities in the MNE value chain to manage and control risks, are the more difficult but legitimate challenges in transfer pricing analysis—a point acknowledged (and appropriately caveated) by the OECD. The strong guidance from the OECD is therefore that the starting point of the analysis must be the actual conditions agreed by the associated enterprises, and of how these are reflected in terms of the 'economic substance' of what each party is actually doing, and of how this in turn generates true economic contribution. The BEPS Action 8–10 Final Report re-enforces the importance of looking beyond mere contracts in undertaking a comparability analysis, placing emphasis on the accurate delineation of the transactions and the actual conditions and economically relevant circumstances. There are circumstances where it is appropriate for the analysis of economic substance to form the basis of whether the relevant transfer prices comply with the arm's length principle, even if this is not consistent with the agreed legal form which may be supplemented or even disregarded.

3.1 Primary and Secondary Functions in a Fully Vertically Integrated Base/Precious Metals Producer

This section deals with the 'function' aspect of the FAR (functions, assets and risks) analysis within the context of the mining value chain. As already pointed out functions can be categorized as **primary**, i.e., those associated directly with exploration, mining/processing and selling of mineral commodities, and **secondary**, including a range of corporate services. Figure A.10 displays a stand-alone, ring-fenced, fully **vertically integrated** subsidiary of a MNE that performs most of the **primary** functions (green boxes) associated with the mining industry value chain all the way downstream to selling the product to customers, but receives some centralized engineering and technical and marketing support from a hub, presumably performing the role of a commissionaire or agent in exchange for a fee.

The arrows connecting the various boxes in Figure A.10 represent the possible intra-company and intra-group transactions to which transfer prices may apply. In the example, these consist largely of routine and subordinately non-routine secondary functions (orange boxes) that the MNE provides, often on a shared basis, to its subsidiaries throughout the group. Shared secondary services that may be provided by the holding MNE head office, a separate service center or related subsidiary at any stage of the mining value chain may include:

1. General management;
2. Accounting and financial administration;
3. Information technology services;
4. Human resources services;

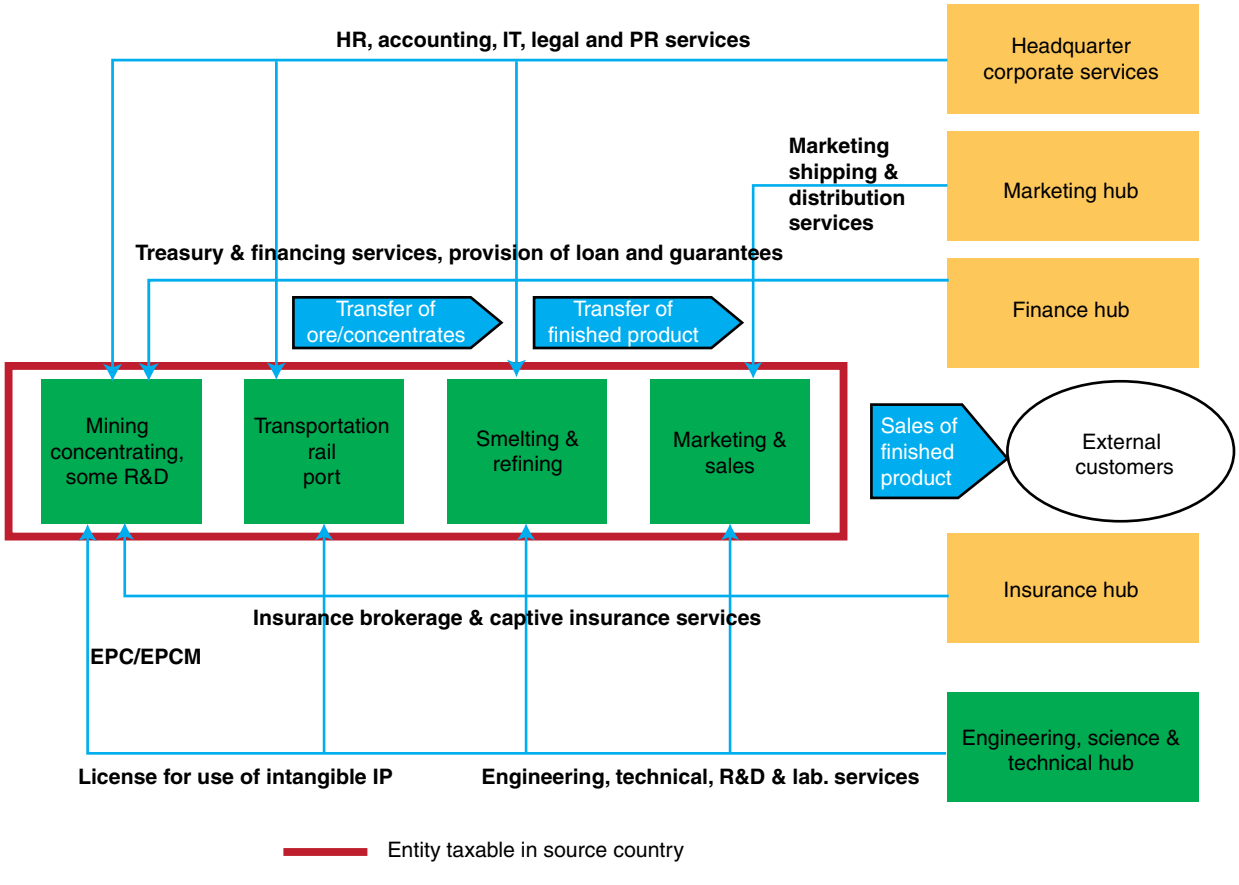
5. Legal services;
6. Captive insurance services; and
7. Treasury services, including:
   a. loan financing transactions involving interest charges, and fees for loan origination and/or loan management;
   b. cash pooling;
   c. financial guarantees to back bids, performance and safety/environmental rehabilitation bonds etc.; and
   d. hedging.

A detailed list of the most common functions likely to be performed by a related party at various stages of the mining value chain is provided in Appendix A.1.

The income generated by the fully integrated mining company (delineated in red in Figure A.10) at the point where it sells its mineral products to an external customer, metal trader or directly into a contestable terminal market (e.g., London Metal Exchange (LME)) is taxable in the source country, after deduction of all allowable expenses including relevant transfer prices.

Because of the relatively simple metallurgy, a high degree of vertical integration is typical of most gold mining subsidiaries of MNEs operating in Africa, where jurisdictions generally require the registration of a dedicated mining company to own and operate the mining assets, which is treated

Figure A.10: Diagram showing a fully vertically integrated mining operation, outlined in red, and its possible relationship with related service provider hubs (Modified from TPA's Mining Handbook)



as an individual taxable entity in the source country. Most base metals mining operations in Africa, by contrast, tend to be vertically integrated mostly to the stage of producing concentrates and, to a lesser extent, all the way downstream to refined metal.

As already mentioned and discussed later in more detail, when dealing with the issue of restructuring, in spite of strong efforts by governments to encourage as much as possible downstream processing and marketing to take place in the host country (i.e., 'go local'), the tendency has been for MNEs to centralize (i.e., 'go global').

Common examples of centralization are the establishment of marketing service centers or hubs and of smelting/refining facilities, which may handle mineral products from one or more of an MNE's mines.

3.2 Assets Utilized and Created in Various Mining Functions

We now move to the assets component of the FAR analysis to review how MNEs engage in business and risk management activities that generally, according to Huibregtse (2013), employ three categories of assets:[40]

- A—Tangible assets,
- B—Intangible assets, and
- C—Non-intangible premiums such as "location specific advantages" or LSAs.

Tangible assets—In the context of mining the majority of tangible assets (Category A) are likely to be located in the country hosting the mining operations, usually at the mine site, and are in most instances owned/controlled by the local mining subsidiary of the MNE. Tangible assets are generally individually capitalized at their historical cost (including installation and commissioning charges) in the balance sheet of the company owning them, and depreciated over their useful lives at rates set by the tax legislation. Depending on their nature, some assets may be subject to occasional revaluation. Furthermore, as these are generally production-related assets, they tend to be primarily utilized in day-to-day operations and are therefore easily identified.

The current economic or market value should, in theory, relate to the present value of the expected future net after-tax cash flows likely to be generated by each asset. In an ideal world, such a valuation would be relevant to establishing an appropriate transfer price, but experience shows that the actual value placed by the market on many assets may often be at variance with their NPVs. Thus, in the absence of a market-price comparable, such an approach would be subject to significant uncertainty and a high degree of subjectivity when used as a proxy for application of the arm's length principle.

In addition, mining companies may lease some items of plant and equipment from third parties, which could provide invaluable information in determining whether the leasing fees and other terms of leasing agreements with related parties comply with the arm's length principle.

Exploration and mining rights—Of fundamental importance is the right to explore for and subsequently extract nonrenewable mineral resources, which in the majority of cases is granted by government[41] to private enterprises in the form of a prospecting, exploration, mining or retention lease. In most African countries government generally retains a small level of equity (of the order of 10%) in mineral projects. Mining tenements are generally awarded on a first-in-time basis or through the negotiation of mining contracts involving relatively modest application and annual rental fees,

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[40]Transfer Pricing Associate's response to OECD, 2013. Revised discussion draft on Transfer Pricing Aspects of Intangibles.

[41]Under most jurisdictions the minerals belong to the government who manages them to the benefit of its citizens.

but potentially including significant obligations for companies to fund basic infrastructure or other public/community benefits. By contrast, petroleum resources, particularly in developing countries, are more often largely held by national companies, which may explore/exploit them in joint venture with private enterprise or by means of contract of/for work or, if allocated to private enterprises, may involve significant upfront cash bids. Thus, in the case of minerals, most of the government revenue is derived from levying mineral royalties and corporate income tax and subordinately from dividends.

The exploration and development expenditure incurred on a mining project is capitalized as a tangible asset by the mining company. However when a mining project is bought, any premium paid in excess of its tangible value is capitalized in the balance sheet of the acquiring party as an intangible asset, a form of goodwill, often referred to as a 'mining right'. To some degree this incorporates the value of the resources which, unless acquired in a sale, would have not been capitalized but would still have been the main determinant of the share value of the mining company as reflected on its stock market capitalization.

Intangibles—Rather than focusing on accounting or legal definitions of intangibles, the thrust of a transfer pricing analysis in a case involving intangibles should be the determination of the conditions that would be agreed upon for their transfer or use between independent parties in a comparable transaction. Intangible "assets" may be utilized in the performance of specialized, nonroutine functions that normally also require unique specialized professional skills and expertise.

Not all intangibles recognized for transfer pricing purposes are recognized for accounting purposes. To the extent that any intangible asset is recognized for accounting purposes, its "economic value," as outlined by the OECD Chapter VI, may differ from the original financial accounting entry based on its historical acquisition cost.

Other intangible values that are not captured in the balance sheet, but that tend to be captured in the overall market capitalization/value of the firm/entity may include unique technical, commercial and managerial skills of key executives and professionals within individual firms that, particularly at the exploration and development stages, are very highly valued by the stock brokering community.

Intangibles, including some that may be hard to value for transfer pricing purposes, typically associated with the primary functions in the mining industry and which would generally be compensated for by margin markups, licenses and/or royalty payments include proprietary rights to:

- Exploration, production and other licenses and permits (e.g., mineral exploration and mining tenements, miscellaneous leases, surface and access rights, etc.) providing legal access to valuable mining reserves and resources unless held, as it is often the case, by the mining subsidiary in the host country;
- Intellectual property (IP) and patents covering inventions, innovative industrial methods, processes and prototypes, computer programs and databases, etc.;
- Specialised know-how and managerial expertise (e.g., of geosciences, mine design, development and construction, mining methods and metallurgical product and process technology, etc.) and R&D capabilities; and
- Specialised expertise and intelligence skills in identifying and satisfying unique customer requirements and specifications for minerals not commonly traded on terminal markets, thus creating value-in-use and capturing valuable niche markets, and related patents and trademarks, etc.

The OECD has updated its transfer pricing guidelines for the use or transfer of intangibles as part of its BEPS action plan.[42] This guidance on intangibles is to be applied in the wider context of new

[42]Pages 63–139. OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

guidance on accurately delineating the transaction and the analysis of risks.[43] The guidance covers a range of issues, including ensuring:[44]

- Legal ownership does not determine the returns from intangibles;
- Appropriate remuneration can be expected for associated enterprises performing important value creating functions;
- Parties assuming risks in relation to intangibles must exercise control over the risks;
- Entitlement to profit or loss relating to differences between actual and expected profits depend on who assumes the risk, the functions performed and whether arm's length remuneration would be an included profit sharing elements;
- Only a risk-adjusted return is provided for those providing funding or assuming financial risks;
- If only funding is provided, the return should be no more than a risk-free return;
- Expansion of when valuation techniques can be used; and
- Rigorous analysis is required by taxpayers for hard-to-value intangibles.

In light of the complexity in reliably valuing intangibles the tax administration of a major, mineral-rich jurisdiction in Africa has seen it fit to cap, with very rare exceptions, the related margins. This approach was taken realizing that in some circumstances where high intangible values may exist this would not comply with the arm's length principle. In addition this jurisdiction also imposes strict conditions on the export of IP and/or on payments relating to the use of IP previously exported from the country.

The matrix in Table A.1 illustrates the tangible (T) and intangible (I) assets most commonly encountered in the various stages of the value chain of the mining industry.

Table A.1: Typical assets of a mining company (Source: Modified from TPA Global)

Exploration Discovery	Mine Development and Construction	Mining Exploitation	Beneficiation, Smelting and Refining	Trading, Marketing and Sales
Exploration and mining licenses and rights, (I)	Engineering design (I)	Exploitation techniques (I)	Beneficiation processes (I)	Customer lists and relationships (I)
Access and surface rights (I)	Engineering machinery (T)	Exploitation plant and equipment and infrastructure (T)	Beneficiation plant and equipment (T)	Marketing and distribution activities (I+T)
Drilling rights (I)	Engineering, procurement and project management know-how (I)	Logistics management and infrastructure (I+T)	Logistics management and infrastructure (I+T)	Logistics management and infrastructure (I+T)
Exploration and laboratory equipment and machinery (T)	Construction, drilling and excavation plant and equipment (T)	Transportation plant and equipment and infrastructure (T)	IP relative to the smelting/refining processes and protocols (I)	Shipping and warehousing (T)

[43]OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[44]Pages 66–67. OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

Exploration Discovery	Mine Development and Construction	Mining Exploitation	Beneficiation, Smelting and Refining	Trading, Marketing and Sales
Topographical surveys (I)	Construction camp and logistic infrastructure (T)	Value of mineral resources and reserves included in price of acquisition of mining rights from a third party (not by means of discovery) (I)	Smelting and refining plant and equipment (T)	Product stocks (T)
Geological surveys (I)	Mine development (T)	Broken ore stockpiles and inventory (T)	Ore, concentrate and metal stockpiles and inventories (T)	Marketing know-how (I)
Geochemical surveys (I)				Trading software/ platforms (I)
Geophysical surveys (I)				Specialized aspects of supply chain management (I)
Transport, communication and camp facilities (T)				Product innovation processes (I)
Exploration techniques and know-how (I)				Distribution rights (I)
IP related to remote sensing and GIS techniques and related databases (I)				Pricing negotiations know-how for unusual commodities (I)
IP related to negotiation, contract structuring and management of joint ventures (I)	IP related to negotiation, contract structuring and management of joint ventures (I)			

I = Intangible Asset; T = Tangible Asset; I+T = Intangible and Tangible Assets

Location specific advantages (LSAs)—The OECD[45] consider that LSAs can be handled as comparability factors with consideration to be given to whether they exist, the amount of any location saving, the extent of any saving retained within the MNE and how they should be allocated or passed on to independent customers or suppliers. Where LSAs are retained within the group and there are local market comparables, comparability adjustments may not be required. However, where this is not the case comparability adjustments may be required based on analysis of all the relevant facts and circumstances.

LSAs are not capable of being owned or controlled by an entity. The OECD makes it clear that LSAs, such as access to cheap labor, to markets and, by extension to abundant mineral resources and more favorable mining and environmental regulatory regimes, are not considered intangibles. They are comparability factors to be considered in transfer pricing analysis, when there are no relevant domestic comparables. While similar outcomes might be achieved, the UN, in its 2013 updated version of the "Manual on Transfer Pricing for Developing Countries," recognizes the importance

[45]See OECD Transfer Pricing Guidelines paras 9.148–9.160 and revised paras 1.139–1.143 (resulting from BEPS Final Report Actions 8–10).

of special features, like location savings[46] or location-specific advantages (Category C)[47] in the context of transfer pricing, but treats them like an intangible asset worthy of a return. These features are seen as providing developing countries with bargaining power and transfer pricing as a mechanism for price negotiation. The allocation of the profits of a MNE from the UN standpoint should place a larger weight on the presence and operation of tangible assets/activities, with the suggestion that it should capture at least an equal proportion of the value of location specific advantages to that captured by intangible assets, i.e., the so-called 50/50 hypothesis. The UN believes this is a good way for developing countries to increase their tax base, which should be, according to the UN, a significant element for their economic and social development.

A highly simplified example of how to make a comparability adjustment for "location specific advantages" to be applied to the group entities owning or controlling categories A and/or B assets is provided by Huibregtse's[48] (2013) comments on the 2013 OECD draft (See Box A.1). In reality, the allocation of location savings generally involves a number of detailed issues that make it a complex process open to interpretation.

3.3 Project, Market and Other Business Risks Typical of the Mining Industry

This section deals with the 'risk' component of the FAR analysis and considers the nature of the risks that mining companies are likely to confront in carrying out their business activities. A clear understanding of which parties in the value chain are specifically, or *de facto,* carrying and managing the various operational and financial risks is critical to assess whether they should be entitled to a larger of smaller share of the economic benefits generated by certain transactions, that is to say to establish a fair risk-return balance. The business risk discussed in this section includes the tax compliance risk, but is distinguished from the risk to government revenue that is discussed in Chapter 4. A clear understanding of business risk is critical in determining which TP method should be used to best reflect the arm's length principle in establishing the magnitude of the relevant TP. The OECD Final Report for Actions 8–10 recognises that the economic notion that higher risks warrant higher anticipated returns made MNE groups pursue tax planning strategies based

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[46]10.3.3 UN Transfer Pricing Manual for Developing Countries, 2013, 10.3.3.2–10.3.3.3 "Location savings are the net cost savings derived by a multinational company when it sets up its operations in a low-cost jurisdiction. Net cost savings are commonly realized through lower expenditure on items such as raw materials, labour, rent, transportation and infrastructure even though additional expenses (so called dis-savings) may be incurred due to the relocation, such as increased training costs in return for hiring less skilled labour. Market premium relates to the additional profit derived by a multinational company by operating in a jurisdiction with unique qualities impacting on the sale and demand of a service or product."

[47]10.4.7 UN Transfer Pricing Manual for Developing Countries, 2013, 10.4.7.3, 10.4.7.5 "The main issue in transfer pricing is the quantification and allocation of location savings and location rents among the associated enterprises. Using an arm's length pricing approach, the allocation of location savings and rents between associated enterprises should be made by reference to what independent parties would have agreed in comparable circumstances. The Indian transfer pricing administration believes it is possible to use the Profit Split Method to determine arm's length allocation of location savings and rents in cases where comparable uncontrolled transactions are not available. In these circumstances, it is considered that the functional analysis of the parties to the transaction (functions performed, assets owned and risks assumed), and the bargaining power of the parties (which at arm's length would be determined by the competitiveness of the market—availability of substitutes, cost structure, etc.) should both be considered appropriate factors. . . . Hypothetically, if an unrelated third party had to compensate another party to the transaction in a low-cost jurisdiction by an amount that was equal to the cost savings and location rents attributable to the location, there would be no incentive for the unrelated third party to relocate business to a low-cost jurisdiction. Thus, the arm's length compensation for cost savings and location rents should be such that both parties would benefit from participating in the transaction. In other words, it should not be less than zero and yet not greater than the value of cost savings and locations rents combined. Moreover, it should also reflect an appropriate split of the cost savings and location rents between the parties."

[48]Huibregtse, S, (30 September) 2013. Comments on the Revised Discussion Draft on Transfer Pricing Aspects of Intangibles, Working Party 6, OECD, Committee of Fiscal Affairs.

Box A.1: Example of comparability adjustments for LSAs

A French group entity produces goods for associated enterprises on the basis, for illustrative purposes, of a cost plus 10% compensation. The COGS is Euro 10 million. Moving production to a Chinese group company leads to recurring cost savings of Euro 3 million in COGS. Table a displays how the appropriate "location savings" can be calculated to compensate the Chinese group entity in relation to Category A, B and C assets.

Table a: Calculation of appropriate location savings

COGS Chinese entity	Euro 7,000,000
Profit uplift to compensate for ownership of Category A assets (10%)	Euro 700,000
Profit uplift to compensate for ownership of Category C assets (assume 50% of savings are allocated to the Chinese group company, i.e., Euro 1.5 million x 10%)	Euro 150,000
TOTAL INTERCOMPANY CHARGE	**Euro 7,850,000**

on contractual re-allocations of risk.[49] It seeks to address this by providing that where a party cannot in fact exercise meaningful and specifically defined control over the risks, or does not have financial capacity to assume the risks, then the arm's length principle means that the risk (and consequently profits) will not be allocated to them. The risks will be allocated to the party that actually exercises control and has the financial capacity to assume the risks. Accordingly, the revisions to Chapter 1 of the OECD TP guidelines reflects the clarification of the treatment of risk.[50]

In the context of this study various risks have been grouped into the two main categories of exogenous, i.e., external to the enterprise, and endogenous risks, i.e., inherent in the nature of the enterprise and the type of activities/operations that it carries on.

Exogenous risks include:

- **Market risk** consists of sales volume risk and price risk, which influence the revenues and therefore the profitability of a company. Sales volume risk occurs when there are fluctuations in the volumes sold due to increased competition in the marketplace, adverse demand conditions within the market, or the inability of the company to develop or maintain markets or position products and services to targeted customers. Price risk occurs when there are fluctuations in the prices that can be charged to customers due to changing demand-supply circumstances. Market risks also include competition from substitute commodities or changes incurred due to trends in culture or technology.
- **Currency/foreign exchange risk**—Changing foreign exchange rates may reduce revenue and the value of equity in foreign subsidiaries. Foreign exchange rate risk arises when a transaction takes place in more than one currency and the fluctuations in the exchange rates between the currencies result in losses.
- **Social/political/sovereign/legal risk**—During the exploration, development and operations processes, social or political risks may impede successful development of the mineral resources. At the limit, social unrest may result in the end of the operations. There may be extra costs incurred due to corruption. Changes in law may bring about plans for the "nationalization of

[49]Page 10, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[50]In particular see paras 1.56–1.106.

resources" or the declaration of conservation zones, which may affect the security of license tenure. Changes in taxation may affect the financial viability of a mining operation.

- **Natural disaster risk**—Earthquakes, floods, volcanic eruptions, etc., are natural disaster factors that can put the mining operations in serious danger.
- **Environmental risk**—Mining developments are allowed to proceed subject to a number of environmental conditions. Quantum changes in legislation and regulations related to the environment may significantly impact the commercial viability of a mining operation. This is in addition to the pressure for organisations to behave in increasingly socially, ethically and environmentally responsible ways brought about by growing societal expectations.

Endogenous risks include:

- **Exploration risk**—Different minerals present different levels of exploration risk. The probability of discovering some minerals, such as gold and certain base metals and nickel minerals, which are found in small concentrations as a proportion of the ore mass, in often deep, steeply dipping, structurally complex geological terranes, may be very low (e.g., 1/100 in greenfields and 2 to 4% in brownfields exploration). Discovery is easier for certain bulk commodities (e.g., iron ore, coal, bauxite) where the useful minerals constitute a large proportion of the ore and generally feature extensive, flattish and near surface ore bodies. In this case economic feasibility is a function of grade and metallurgical quality of the ore and of the deposits logistics.

  This means that each successful mineral discovery is the culmination of exploration programs carried out over several years, entailing a large number of unsuccessful projects. In the majority of developing countries where exploration and mining projects are ring-fenced for tax purposes, mining companies are generally not allowed to claim a deduction for exploration costs incurred in unsuccessful projects against the income generated by their mining operations, with the exception being exploration that has occurred within their income-generating leases. This is not the case in most jurisdictions that tax income at the consolidated level, where the losses incurred in unsuccessful exploration projects are generally deductible from the taxable income of an associated company irrespective of where exploration took place.
- **Operating/processing risk** arises when the geological, structural/geomechanical and mineralogical natures of a mineral deposit make it difficult or unsafe to mine and/or results in lower than expected mineral recoveries and/or higher capital and operating costs. This risk can also arise where there is negligence or malicious harm caused by employees during exploitation and mineral processing.
- **Capacity under-utilization and availability risk** are present when circumstances lead to less than full utilisation of a production asset.
- **Transportation risk** arises when conditions prevent mineral products and other out-bound and in-bound goods from being delivered safely, in a timely manner and in the best of condition.
- **Inventory risk** arises when there is the potential for losses associated with stocking and carrying inventory. Losses include those due to declines in prices, adverse movements in exchange rates, obsolescence, shrinkage, or market collapse.
- **Product liability risk** arises when manufacturers, distributors, suppliers and others who deliver mineral products to the market are held responsible for the injuries those products may cause.
- **Customer credit risk** arises when products are supplied or services performed for customers and the related payment is deferred to a later date or not made at all.

Table A.2 shows an example of the type of risks that are likely to be borne by entities operating in the different stages of the mining value-adding chain. These risks are characteristic of the functions performed irrespective of the entity to which they may be allocated for delivery.

A discussion and examples of the complexity of risk allocation will be provided later in the context of lending, when dealing with the determination and appropriateness of risk premiums used in setting the interest rate applicable to loans extended by MNEs to subsidiaries in developing countries.

Table A.2: Risks typically encountered by a mining company (Source: Modified from TPA Global)

Risks	Acquisition/ Exploration	Mining	Ore Processing	Trade	Marketing/Sales
Exogeneous					
Market risk	—	x	x	X	X
Currency/foreign exchange risk	X	X	x	x	x
Social/political sovereign/ legal risk	X	X	x	—	—
Natural disaster risk	X	X	x	—	—
Environmental risk	X	X	x	—	—
Endogenous					
Exploration risk	X	—	—	—	—
Operating risk	x	x	x	x	x
Processing risk	—	X	X	—	—
Capacity underutilization and availability risk	—	x	x	x	—
Transportation risk	—	X	X	X	X
Inventory risk	—	X	X	X	X
Product liability risk	—	X	X	X	X
Credit risk	—	X	X	X	X

— = Limited risk, x = Moderate risk, **X** = High risk

India has questioned the degree to which risks, in general, are apportioned to foreign companies in cases where a large proportion of business decisions and accountability for performance are devolved to local subsidiaries. On this basis it argues that the distribution of profits should be influenced more by the assets and personnel deployed to generate them rather than the risks borne by the various parties.

Chapter 3 Key Take-Away Points

- Tax authorities need to verify activities/functions that can be categorised as either primary or secondary, as well as where they are carried out.
- Identify those that are most likely to involve transactions between related parties.
- Clearly identify the resources, assets utilized and risks (both endogenous and exogenous) borne by different parties in the controlled transaction that are the main factors in establishing transfer prices.
- Mining assets may be tangible, which makes it relatively easy to identify, value and account for them, or intangible.
- Intangible assets are much harder to identify and particularly to value and account for; as a consequence determining an appropriate level of remuneration for their transfer or for services making use of them may be ambiguous and open to abuse, thus requiring rigorous analysis.

4

Mapping of the Main Risk to Government Revenue Arising from Mispricing of Transfers in the Mining Value Chain

4.1 General Considerations

In general terms, risk exposure is the product of the potential magnitude of an adverse outcome multiplied by its probability of occurrence. The approach taken in setting auditing priorities in the context of TP risk to revenue in mining should be similar, and targeting for auditing purposes should be conducted on the basis of three fundamental questions:

- Which are the mining operations with the largest turnover and what is the likelihood that related companies may engage in undervaluing exported minerals and in other unwarranted tax practices?
- Within a targeted mining operation, which activities entail the highest cash flows in terms of:
  - their gross revenues from mineral product transfers to and/or
  - capital and operating expenses relating to the provision of services and assets from related entities?
- How complex are the associated transactions and arrangements, such as the level of hard-to-quantify intangible cost components, the complexity of the legal structures, and the seemingly unwarranted fragmentation of the supply chain?

The first two questions will be dealt with in detail at the level of different commodities and mine sizes in the African context in Part B. It should be recognized, however, that analyses carried out in Part B are based upon a number of assumptions pertaining to the quality and characteristics of an orebody. Variations in such characteristics in terms of the mining method employed or stripping ratio required may materially alter the figures computed and as a result, these analyses provide a general guide and do not replace the need for tax administrations to carry out detailed analysis at the country level first, and then at the level of individual mining operations.

Data relevant to taxpayers population profiling can be gathered as part of a schedule to the company tax return. This facilitates the identification of not just mining operations according to their turnover, but also according to reported profits, levels of intercompany borrowings, the type and significance of various related party dealings, and so on. While MNEs can and often do enter into a wider variety of intra-group arrangements than are found in the open market between independent parties, the nature of these dealings and the extent to which they deviate from the type of arrangements found in the open market can be one partial indicator of the compliance posture of the MNE.

Revenue risk in this section is limited to that resulting from transfer mispricing only and does not consider other risks, such as from trade misinvoicing, corrupt government practices, industry

defaults, etc. As discussed in the already quoted 2016 UNCTAD report, **trade misinvoicing** occurs when the reported value of exports from one country (A) to a trading partner in another country (B), do not match. Under normal circumstances, the following equality should hold: Country B's imports from country A = country A's exports to country B + freight and insurance. Export under-invoicing and imports over-invoicing from/to a highly-taxing country has the effect to reduce the tax payable in the country. The UNCTAD report indicates that the revenue leakage attributable to misinvoicing in Africa may be significant, but the sources of information and the methodology used in generating the relevant estimates have been criticized by some reviewers. Contrary to transfer mispricing, the trading partners engaging in misinvoicing need not necessarily be related, but may be colluding. Clearly tax authorities and customs need to have good systems to check the quantity and quality of the minerals exported and whether all the goods and services claimed had actually been received.

Aside from misinvoicing, it stands to reason that even small mispricing differences between transfer and at arm's-length prices when occurring in the context of very large items of either revenue or expenses can result in significant tax leakages. The taxing authority should be alert to the presence of unusual transactions, anomalous cost structures and protracted low profitability or loss-making relative to peers,[51] which should be viewed as a prominent indicator of transfer pricing risk, but need to be open to reasons for the losses and cannot automatically assume that they are related to transfer mispricing.

It must also be stressed that an early step in terms of auditing must be to ensure that the services and/or assets were actually supplied. For example, instances where there appear to be *prima facies* evidence of inconsistencies both in the production volumes declared and in transfer prices having been set lower than the corresponding arm's length prices are not uncommon, but are generally difficult to prove unless stringent physical controls are an integral part of the process of assessing the appropriateness of transfer prices.

The third question, regarding the complexity of accurately estimating and auditing transfer prices in terms of their compliance with the arm's length principle in many cross-border transactions, whether out- or in-bound, combined with the frequently inadequate transfer pricing auditing capacity in developing countries and special fiscal incentives that may have been provided to attract FDI, creates risks of either unintentional mispricing or even opportunities for misuse**.** The latter occurs when related companies deliberately underpay for out-bound mineral products from, and/or charge above-market prices for in-bound goods and services supplied to, related mining entities in developing countries. However, the mere fact that a transaction or arrangement is conducted between related parties does not *per se* make it necessarily prone to transfer mispricing or constitute a significant risk to revenue.

The reality is that no tax authority, competent and well-resourced as it may be, will ever have the capacity to thoroughly audit all aspects of a complex mining operation. The public interest will be best served by directing scarce expertise and resources to a limited number of high-risk areas, while enforcing general compliance and simplification in the handling of routine transactions. Systematic data collection (both quantitative and qualitative) by the tax authority is essential to its risk management. It also follows that different 'treatment' strategies should apply to different taxpayers on the basis of their risk profile and related 'risk and consequence' of noncompliance.

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[51]For instance, a 2008 audit by Grant Thornton (2008) revealed that there was an inexplicable increase in the operating costs of a large African copper mining company and that the company presented consistent losses for approximately 10 years, which it was alleged may indicate profit shifting to its holding company domiciled in Switzerland. Nonetheless, persistent loss-making may not always be symptomatic of TP mispricing as the Australian Taxation Office has found at the conclusion of their recent unsuccessful, and very costly, court case against SNF (Australia) Pty. Ltd. However the court decision ultimately swung on points of law rather than the 'economic' reasons underpinning the sustained losses in the subsidiary.

Where a MNE has gone through a full global business restructuring and optimization process, which is further discussed in Chapter 5, many of the functions in the mining value chain may be located in foreign countries. At the limit this may leave the mining subsidiary to the extent that it may be reduced to merely perform a role akin to that of a contract miner. Unless the host country either imposes specific title conditions or provides economic incentives for certain functions to be undertaken in the country, new mining ventures may be structured in this way from the start, and pre-existing mining projects may have been progressively restructured to achieve an outcome that has limited high-value functions remaining in the host country. These structural arrangements may be legal, but to the extent that it may prove difficult for tax authorities to gather sufficient information to verify that the functions/activities performed in foreign jurisdictions were actually priced at arm's length, they still constitute significant risks to tax revenue.

An incentive to fragment the supply chain may also be created for non–cross-border transactions between related parties if a country establishes a Special Taxation Zone (STZ) within its boundaries. These arrangements, which are set up primarily to attract FDI, may encourage the establishment of downstream processing facilities for mineral products in STZs. An example exists in a Southern African country where a mining company decided to locate the smelting and refining facility to treat its lead-zinc concentrates output within an established STZ in the country. This decision would exempt any profit generated by the downstream processing activities from corporate income tax, which reflects the government's objective of attracting investment and job creation to the STZ area.

The OECD BEPS action items seek to deal with the excesses of such types of arrangements to ensure acceptable arm's length outcomes prevail that reflect the "economic substance" of value-adding activities actually occurring in each jurisdiction, and also take into account links to other "value drivers." These may include "significant people functions," in other words the local presence of people and decision makers in the host country. These initiatives, nevertheless, may still be somewhat ineffective due to difficulty in gathering and accessing relevant information so that informed audit findings can be arrived at. This constraint may impede relieving significant tax revenue risks in the absence of legislative pricing support, as for instance deeming and default prices.

In this section and at a more detailed level in Part B, we will look at which activities entail the highest cash flows in terms of:

- Their gross revenues from mineral product sales or transfers; and/or
- Capital and operating expenses relating to the provision of assets (including hard-to-quantify intangibles) and services from or the bearing of risk (captive insurance, hedging) by related entities.

Table A.3 highlights which of the more significant related party transactions (discussed in Chapter 3 and Appendix A.1) may present higher levels of risk to government revenue, as well as the mining stages in which they commonly take place.

Reliable quantitative information on the extent of the relative importance of various sources of revenue risk in the mining context in Africa does not appear to exist and many claims relating to leakages appear to be circumstantial. None of the respondents to our TP questionnaire were in a position to venture even a qualitative guess. There is some evidence that marketing and financial services may rank the highest in terms of revenue risk, based on the magnitude of some recent corporate income tax and mineral royalty adjustments relating to marketing hubs in Singapore amounting to many hundreds of millions of dollars.

Additional guidance on the use of risk criteria as part of the development of transfer pricing audit programs is provided in Chapter 8 of the WBG *"Transfer Pricing and Developing Economies"* handbook.

Some of the transactions in Table A.3 involve the sale or lease of high-value assets, both tangible (e.g., mining and mineral processing plant and equipment) and intangible (e.g., exploration and

Table A.3: Matrix mapping the most common risk point encountered at various stages of the mining value-chain

Value-Chain Stage	Acquisition Exploration	Development Construction	Mining and Concentration	Transport	Smelting and Refining	Marketing and Sales
Marketing Hub						
Marketing services						H
Shipping and distribution services				H		H-M
Cargo insurance services				M		M
Finance Hub						
Treasury services	M	H	M-L		M-L	
Financing services	M-L	H	M-L	M-L	M-L	H
Insurance Hub						
Insurance brokerage services	L	M-L	M-L			
Captive insurance services	M-H	H	H	H	H	H
Engineering, Science & Tech. Hub						
EPC/EPCM contracts		H	M-L	M-L	M-L	
Technical and scientific services	H	M	M		M	
Patents and other IP	H	H	M-H		M-H	M
Corporate Services Hub						
HR, accounting, IT, legal, etc.	M-L	M-H	M-L	M-L	M-L	M-L

Legend: H, M, L refers to level of risk; red color = high flows; green color = high level of intangibles.

mining rights,[52] and proprietary exploration, mining and processing technology) as discussed below when dealing with Engineering, Science and Technical hubs. The valuation of arm's length prices for technical and R&D services can also be extremely complex if they involve unique specialised scientific and technical know-how and/or tightly guarded patented or unprotected but proprietary IP. The OECD's BEPS Actions 8–10—2015 Final Report contains a detailed discussion on TP issues relating to intangibles, including 29 highly useful illustrative examples.

The acquisition or creation of some of these assets by the mining subsidiary may have been funded by related financial subsidiaries of the MNE, involving ongoing recurrent interest payments and a range of related charges and fees. Although the level of debt in the funding structure and the related interest payments and tax deductions may be subject to thin capitalisation and related rules in the legislation, this area still contains significant ambiguity although much of it has been

[52]Mining rights can be acquired in various ways. They can be obtained directly from the government subject to satisfying legislated conditions (e.g., meeting the financial and technical capacity to exploit tests), or they can be acquired through acquisition from the registered title holder by means of sale, lease, farm-in/out arrangements, bequeaths, etc. In the case of acquisition, the value of the mining rights includes the capitalised value of any resource that may be present.

clarified in the OECD's BEPS Action 4: 2015 Final Report. This is discussed in detail below in Section 4.2.6 when dealing with finance hubs.

Of particular significance, given the magnitude of the related flows, are the transfers of fully or partially processed mineral products to related entities that either provide a marketing distribution or processing service, or that act as fully fledged traders/marketers and/or smelters that assume their ownership and bear the related risks, as discussed in detail below when dealing with marketing hubs. Finally, transfer pricing issues may also arise in the way charges are applied for a range of administrative and corporate support services (e.g., financial services, HR, IT, etc., and insurance) provided by a related party generally the MNE's head office.

4.2 Risks Arising in Mining Operations

4.2.1 General considerations for the use of hubs for the supply of goods and services

Service centers, frequently referred to as hubs, are often set up within MNEs where one member of the MNE group can provide services and/or property, including the transfer or licensing of intangible property, to other members of the group. Mining companies commonly use hubs for the provision of a range of services, including marketing (broadly defined to sometimes also include distribution and shipping); corporate services; engineering, science and technical; procurement and logistics; insurance; and finance that could have either been obtained from unrelated expert service providers (for example, legal and accounting services) or provided in-house within the mining subsidiary itself (for example, training of personnel, financial advice and internal auditing). An outline of these arrangements is set out in Chapter VII of the OECD guidelines.

The structure used by MNEs for their service hubs varies considerably. In some cases significant services may be provided by the parent company; in other cases they may be provided by a centralized or integrated group that focuses on a particular function (e.g., marketing) throughout the group or a region, or a combination of both (e.g., regional marketing hub). Individual related party subsidiaries may also be set up solely to provide services to a specific member of the MNE group, as opposed to cost contribution arrangements where members of a MNE jointly acquire or provide goods or services and allocate the costs and/or the benefits among members.

Application of the arm's length principle can be particularly difficult if the services and/or property supplied by related parties do not have parallels in transactions between unrelated parties resulting in an absence of valid comparables.

The IMF has identified that some intra-group transactions may occur only because of the MNEs' ability to exploit cross-border tax differentials[53] and provides a number of prominent examples of this tax-driven behavior, as for example:

- Transfer of intangible assets, and
- Risk transfer among affiliates where the transfer does not affect the risk borne by the MNE group as a whole.

The IMF[54] suggests that such aggressive tax planning could be countered by:

- Developing concrete guidance where it is lacking,
- Repudiating perverse interpretations of the arm's length principle, which may have become commonplace and often tacitly accepted, such as condoning risk stripping and other arrangements, and

[53]IMF—Spillovers in International Corporate Taxation, 9 May 2014, published 25 June 2014. See paragraphs 42–56 which address arm's length pricing.

[54]Ibid, paragraph 53.

- Adopting carefully designed safe harbours that apply a fixed markup to certain types of costs.

The OECD has recently revised its transfer pricing guidelines for intra-group services[55] and highlights two main issues for the analysis:

- Whether the services have in fact been provided, and
- What the charge for such services should be for tax purposes, applying the arm's length principle.

The arm's length principle only recognizes for tax purposes a charge for a service if the service provides the company with economic or commercial value to enhance its commercial position. This can be determined by considering whether an independent enterprise in comparable circumstances:

- Would have been willing to pay a third party for the service, or
- Would have performed the activity in-house.

If these criteria are not met, the transaction is not considered an intra-group service under the arm's length principle and the related expenses should be disregarded for tax purposes. This situation is more likely to arise where one entity of the MNE group provides services across the group as a whole or to groups of members and it may be easily identified when charged out at a flat or proportionate rate. Care should be taken to ensure that intra-group services are:

- Not duplicate charges for services already provided by others or in-house.
- Do not include shareholder services such as coordinating activities like shareholder meetings, issuing of shares in the parent company, preparation for and satisfying reporting requirements associated with the consolidation of accounts and the costs of raising funds for common acquisitions by group members. These must be contrasted with services provided specifically to a particular subsidiary, as for example, where services are provided to the mining company itself such as raising funds for acquisition of capital items by the mining company and detailed planning, procurement and construction of its mining project that would be regarded as providing financing and technical services respectively, as discussed in the following sections.
- Do not include charges for incidental benefits, such as a higher credit rating by reason of its affiliation alone (passive association). These may be contrasted with a higher credit rating being due to a guarantee (active association).

The updated OECD transfer pricing guidelines includes a simplified charge mechanism to be used by tax administrations for low value adding intra-group services.[56]

There are basically two methods that are used by hubs to charge-out their services:

1. The direct charge method—this method is used where the services can be readily identified and is most frequently used where the hub provides services similar to those provided by independent parties. In such cases tax administrations would expect to see the CUP or cost plus methods used to establish an arm's length price.
2. The indirect charge method—this method is used where the services are not readily identifiable, such as where they are incorporated into another transfer of property. Similarly, this method is used where costs are allocated and apportioned on some basis, as for example, where payroll services are charged on the basis of the respective number of personnel employed by the different subsidiaries of the MNE. This indirect method is frequently used

[55]See revised Chapter VII. OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[56]See paras 7.52–7.63 of revised Chapter VII, OECD TP guidelines.

where services are shared centrally and the most appropriate arm's length method may be the transactional profit split method.

Where MNEs have used the indirect charge method, tax administrations need to consider whether the allocation keys used are consistent with the arm's length principle. This involves looking at the allocation keys from the perspective of both the service provider and the recipient, to determine whether it reflects a reasonable sharing that independent parties acting at arm's length would have negotiated and agreed to on the basis of their respective bargaining powers.

In practice, the issue of appropriate allocation keys have in the past been subjected to protracted audits, and often disputes between tax administrations and MNEs. Underlying these disputes is a difference of opinion as to what information should be kept by MNEs' hubs to substantiate allocation and apportionment. Tax administrations often consider that very detailed information about all aspects of the services should be provided, for example, hourly time sheets to identify what proportion of staff time is spent on different mining projects. MNEs maintain that such detail is unnecessary for their business purposes and imposes excessively onerous compliance costs.

For the tax administration, the revenue return from such acrimonious audits and disputes is often not commensurate with the time and resources invested. In addition, these types of disputes tend to divert resources from work on higher-risk compliance areas. A cooperative approach should be promoted between the tax administration and the industry sector to consult and reach agreement on acceptable allocation keys for a range of commonly performed services. The publication of acceptable administrative safe harbors by a tax administration may in some cases lead to a more harmonious relationship and possibly greater efficiency for both the tax administration and the industry. This practice, although recommended by BEPS, is not necessarily acceptable by all tax administrations, as for instance South Africa, though championed as providing practical certainty by others, such as Australia.

Similarly, some tax administrations have expressed the view that the use of APAs or administrative rulings on a case-by-case basis to cover payments by the mining company to a service hub for more unique or uncommon services may be premature in the African context at the current stage of development. There is no question that the process of putting an APA in place is resource and skill intensive as well as time consuming, which, in the majority of cases explains their poor acceptance in Africa.

When considering an APA program, tax administrations need to decide as to whether to allow only unilateral, only bilateral, or both types of APAs. APAs have a number of important costs and the decision on their introduction should be based on a careful assessment of costs and benefits.

To be effective, the more 'up front' approach of APAs should be accompanied by the provision of relevant information and include details about the information that is available and will be kept by the mining company to establish the basis of the allocation, and enable its verification when and if needed. Where such a ruling or other agreement is achieved between the tax administration and the mining company, it can remain in place without the need to be reviewed for several years unless there are material changes in the services provided or related business or market circumstances.

Some service hubs may be organized on a regional basis as a holding company or headquarters company providing services to MNE enterprises in particular regions. These types of service hubs are rarely located in any of the countries that the subsidiaries they provide services to are located.

Regional service hubs provide an opportunity for the tax administrations of relevant countries to co-operate in looking at the transfer pricing risks and develop a common application of the arm's length principle. This can save time and effort for the tax administrations and also provide greater certainty and reduced cost of compliance for MNEs.

4.2.2 Marketing hubs

The term "global marketing centre" or "marketing hub" is commonly used by MNEs to cover a potentially broad range of functions and activities. These may encompass the provision of such services as marketing, sales, packaging and distribution, transportation/shipping, warehousing and related administrative functions to one or a number of mining and/or smelting/refining related entities within the same MNE group. The OECD refers to this type of arrangement as "shared service centres." MNEs are free to establish hubs based on any of the above functions in isolation or under a different grouping that best suits their business objectives.

Depending on the contractual arrangements, whether title is passed to it and the risk assumed, the role of a marketing hub may range from a mere marketing support function to that of a commissionaire or commission agent, all the way to a fully-fledged marketer/distributor function. As discussed later in greater detail, it is worth noting that many mineral commodities destined to terminal markets (e.g., base and precious metals) are produced by mining companies at source in compliance with stringent quality and standards specifications, which significantly weakens the argument for compensation for marketing rather than for simple sales services. These issues become more complex when dealing with unusual mineral products (e.g., industrial minerals, gemstones and some types of metal concentrates) not normally traded on terminal markets.

A clear understanding and determination of the functions actually performed by a marketing hub is critical in assessing the most appropriate approach for setting the related transfer prices.

4.2.2.1 General characteristics of mineral products sales

As the source of revenues for most mining companies is limited to the receipt from sales for their mineral products, it is critical for the tax administration in assessing whether the relevant transfer prices are set at arm's length to have a good understanding of the way sales are conducted for different commodities.

As already discussed, depending on the mineral commodity, sales/transfers may involve a range of different mineral products along the downstream processing route, ranging from broken ore through intermediate products to various essentially smelted and/or refined metallic forms. For example, as discussed in greater depth in Part B, in the case of iron the bulk of trade is in ore (both lump and fines), beneficiated ore and magnetite concentrates, pellets and sinters, while copper is traded as concentrates, blister copper and cathode, with very limited tonnages of high-grade, direct-shipment ore, and gold is primarily sold as doré bars, an amalgam of gold and silver.

Mineral products can be sold generally on a cost & freight (CFR) or on a cost, insurance and freight (CIF) basis at the port of destination, or on a free-on-board (FOB) basis at the port of origin, by means of:

- **Spot sales or over the counter (OTS) sales** to individual buyers, merchants or on terminal markets. An example of a spot sale agreement for the delivery of iron ore conducted through the Tianjin Bohai Commodity Exchange e-Spot-Trade facility is provided in Appendix A.2, with the main terms of this contract summarized in Box A.2.
- **Off-take agreements**, including take or pay, take and pay, and of various durations from short-term (typically one to three months) to longer-term (typically ranging from annual to multi-annual, and in exceptional circumstances over the life of the mine). Off-take contracts are designed to bring a degree of revenue stability to a project and are often entered into to facilitate securing project finance for the development of a project, and to significantly reduce the sales volume risk, but generally not the price volatility risk. Major contractual terms include:

Box A.2: Summary of main terms of iron ore spot sales conducted through Tianjin Bohai Commodity Exchange e-Spot-Trade facility

NET PRICE, i.e., the CFR price (not including VAT) of iron ore agreed between the seller and the buyer through the Exchange's e-trading system is _____Yuan (RMB)/dry ton.

SETTLEMENT VENUE shall be the warehouse as assigned by the Exchange.

QUALITY: The standard product shall be iron ore which meets the following quality requirements:

Ore fines; grade Fe: 62%; particle Size: no less than 90% for the size less than 10 mm, and no more than 40% for the size less than 0.15 mm; phosphorus content P: ≤0.08%; sulphur content S: ≤0.06%; aluminum content Al_2O_3: ≤3%; silica content SiO_2: ≤6.5%; moisture content H_2O: ≤8%. Physical delivery shall be settled on a per dry ton basis after full deduction of moisture.

PRICE ADJUSTMENTS will be introduced for products at variance with the above standards as follows:

Table b: Price adjustments for impurities in e-Spot Trade facility

Item	Scope of Quality Index	Price Adjustment
Grade	Fe% ≥ 62	The settlement price at the settlement declaration date + per dry metric ton unit price × (number of dry metric ton unit of actually measured grade—62)
	56 ≤ Fe% < 62	The settlement price at the settlement declaration date— per dry metric ton unit price × (62—the number of dry metric ton unit of actually measured grade)
Particle size	>10 mm 15% max	1.2 Yuan/dry ton is deducted for every increase of 1%
Phosphorus content	0.15% max	0.3 Yuan/dry ton is deducted for every increase of 0.01%
Sulphur content	0.10% max	0.3 Yuan/dry ton is deducted for every increase of 0.01%
Aluminum content	5% max	10 Yuan/dry ton is deducted for every increase of 1%
Silica content	8% max	10 Yuan/dry ton is decreased for every increase of 1%

  - Quotation/price reference period, usually one to three months anchored to time of shipment or arrival; in some instances buyers are given options, including the ability to back-pricing;
  - Price reference: LME, London Bullion Market, IODEX index, etc.;
  - Reference Publication: Platt's, Metal Bulletin, etc.;
  - Penalty Elements Schedule: Depending on products, e.g., for iron ore, P, S, Al_2O_3, SiO_2, etc.;
  - Payable rates: percentage of metals payable/metal deductions; and
  - Payment terms: Both timing and interest considerations.
- Off-take agreements include **long-term sales contracts** that provide scope for less stringent conditions on the transacting parties in terms of volumes and prices over time. An example of such an agreement for the sale of copper concentrate is provided in Appendix A.3 while its main terms are summarized in Box. A.3.
- **Hedging contracts**, in the form of **forwards** directly with customers or **futures** through derivatives markets, when transacted to secure a price, but not for speculative purposes.

Box A.3: Summary of the terms of the copper off-take agreement of Appendix A.3

DURATION: Agreement expires on earlier of lifetime of the mine or tenth anniversary of the commencement.

QUALITY: As per the assay provided by Seller and provisionally attached as Appendix.

SHIPMENT: Lot sizes and shipment schedule mutually agreed annually.

DELIVERY: Main Chinese port, or parity (as defined in INCOTERMS 2000)

PRICE: Shall be the sum of the metal payments less the deductions as specified below:

Metal payments will be averaged over the quotational period:

Copper: 96.50% of the final copper content, subject to a minimum deduction of 1.0 unit paid for at the official London Metal Exchange cash settlement quotation for Grade A copper, as published in the Metal Bulletin in London in US Dollars.

Silver: 90% of the final silver content, subject to a minimum deduction of 30 grams per dry metric ton, paid for at the London Bullion spot US Dollar quotation for silver, as published by the Metal Bulletin in London in cents.

Gold: 90% of the final gold content, subject to a minimum deduction of 1 gram per dry metric ton, paid for at the mean of the London AM/PM US Dollar daily quotations for gold, as published in the Metal Bulletin in London.

Deductions:

Treatment and refining charges, including those for gold and silver, shall be agreed mutually between the Buyer and the Seller during the fourth quarter of each calendar year prior to the contractual year of shipment.

QUOTATIONAL PERIOD agreed mutually between the Buyer and the Seller during the fourth quarter of each calendar year.

PAYMENT shall be in US Dollars, by telegraphic transfer: 90% of the provisional invoice value paid, 30 days following the presentation of a full set of shipping documents for each shipment and balance of 10% paid promptly upon completion of all other formalities regarding the final agreed weights, assays and prices.

TITLE within each shipment passes from the Seller to the Buyer upon his first provisional payment.

RISK passes from the Seller to the Buyer when the Products pass over the ship's rail at the port of loading.

INSURANCE is covered by Buyer from the time risk passes from the Seller.

CFR and/or CIF sales at the port of destination are the most common approach used for bulk commodities such as iron ore, coal, alumina, etc.

Other commodities products, such as base metals and nickel concentrates, raw metals (e.g., blister copper, nickel matte, doré, rough diamonds, etc.) have traditionally been sold/transferred on an FOB or CIF basis to independent or related smelters/refiners or marketers that then on-sell the products after undertaking activities such as blending, smelting, refining, grading, polishing and batching for distribution and sale to end users.

In practice, a long-term supply agreement may involve quite a number of individual shipments, each covered by a quotation/price reference period. Each transaction may involve an initial payment based on an estimated transfer price and subsequent monthly or quarterly pricing/profit reconciliations, following processing and subsequent sale of the mineral product to an unrelated buyer. This process may also bring consideration of exchange rate movements over the period into play.

For tax administrations, the observation of the actual price paid by an independent third party for equivalent products provides the best reference arm's length price. If that arm's length price is struck at the point of exit from the host jurisdiction, for example FOB at loading at the port of export, it will properly reflect the gross economic value added within the country. If the arm's length price is struck at a later point, for example, at the point of transfer to a related party marketer domiciled in a foreign country, the proper reflection of the economic value for the host country can be calculated by netting back from the arm's length price realised by the related marketing entity in the subsequent sale of the mineral product to a third party the costs of shipping, demurrage, insurance, etc., and an appropriate arm's length compensation for the marketing and sales functions carried out by the related party. One difficulty experienced by tax administrations is that access to the sales invoice to the third party buyer of the mineral commodity is often not made available by the MNE's marketing subsidiary.

As already pointed out, an appropriate compensation should reflect whether the related party is just providing marketing/distributing services, or if it is a fully fledged marketer/distributor having taken ownership and in some cases physical possession of the minerals and bearing the associated risks. Direct experience has shown that in many cases the most suitable OECD method for calculating this margin should be the cost plus (CP) method. However, some marketing hubs have argued that in some cases their services included use of hard-to-value marketing IP, as in the case of some specialized minerals, the price of which is determined by meeting strict individual customers' specifications in niche markets, and that, as a consequence, compensation should be based on a percentage of the gross value of sales. This approach is generally highly contested by tax administrations because it may give rise to excessive returns to the marketing hub (as evidenced by abnormally high profit ratios). Evidence of comparable independent marketers charging for their services on this basis is normally not readily obtainable.

In addition, if the sale price of a mineral product to a shareholder is lower than the corresponding market price (shareholder's discount), that discount should be analysed and, if unwarranted, added back to the realised price to truly reflect an arm's length price. Shareholder's discounts are often a feature of off-take agreements entered with significant subscribers of equity capital at the critical time when a mine is first developed/constructed or significantly expanded (see the West African Iron Ore Mine example in Box B.11).

As a result, it is suggested that legislative deeming and/or default pricing provisions may be needed to provide the tax administration with an alternative way to approximate the arm's length price in an efficient and timely way. In the case of sales, such legislative support might take the form of an approximation of the arm's length price based, for example, on a weighted average of market quoted prices for commodities that satisfy stringent market standards, or where the quality of the commodity is variable, then on the use of normalising indexes (where available) over a specified period of time. This approximation of the arm's length price would then be used for transfer pricing purposes unless relevant information (i.e., the actual price paid by a third party purchaser of the commodity to a related entity offshore) is provided upon request, in a timely manner, in line with the prevailing legislation. This approach would ensure that undisclosed commissions taken by an interposed related party and not visible in the consolidated MNE's accounts do not hinder the proper calculation of an arm's length price for the tax administration of the host country. Documentation requirements will be discussed in greater detail in Part C.

New guidance dealing with commodity transactions has been added to the OECD transfer pricing guidelines (after para 2.16) as part of the BEPS final reports.[57] This guidance:

- Provides clarification of existing guidance on the application of CUP. The CUP method is confirmed generally to be an appropriate transfer pricing method for commodities transferred between related parties:[58]

[57]See page 51, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[58]As a result of BEPS Final Report Actions 8–10 and additions to Chapter II of the Transfer Pricing Guidelines.

- Determined by reference to comparable uncontrolled **transactions;** or
- Determined by reference to comparable uncontrolled **arrangements** represented by a 'quoted price'.

A 'quoted price' must be used by unrelated parties as a reference to determine prices in transactions between them. In this context, a 'quoted price' includes prices obtained from recognised and transparent price reporting or statistical agencies, or government price-setting agencies. The economically relevant characteristics must also be 'comparable'—these characteristics may include the physical features and quality of the commodity, contractual terms, volumes, period, timing and terms of delivery, transport, insurance and foreign currency terms. Price adjustments for reasonable accuracy may be needed to ensure reliability of this method.

- Sets out a new provision on determination of pricing date for commodity transactions. Where the actual conduct between parties differs from that agreed between them, or where the pricing date or agreed pricing periods do not reflect what independent parties would have agreed to in the circumstances (taking into account industry practices), the pricing date may be deemed to be the date of shipment and the price will be the average quoted price on the date of shipment, subject to any appropriate adjustments.

This new guidance for commodities is expected to greatly assist African countries to address some of the major transfer pricing risks in the mining sector. The guidance is to be supplemented through further work by the G20 Development Working Group.

Where the interposed related party entity is located in a country with an effective exchange of an information article,[59] opportunities should be explored for specific or spontaneous exchanges of information relating to contracts and pricing arrangements between the related party entity and the third party purchaser. This should form part of a systematic information collection program. In Africa, exchange of information between some tax treaty partner countries has tended to be limited, in part due to the paucity and ineffectiveness of the electronic information systems needed to facilitate audits in many of these countries. This situation, however, is rapidly changing creating an increased capacity for tax authorities to obtain the necessary information to identify, investigate and penalize non-compliant companies. Importantly, exchange of information provisions can be accessed without entering into a comprehensive bilateral double taxation agreement (DTA). The benefits of exchange of information mechanisms can be delivered by Tax Information Exchange Agreements (TIEAs), or by becoming a signatory to the OECD multilateral treaty[60] on mutual administrative assistance in tax matters (see Box A.4). However, obtaining exchanges of information can be at times a lengthy, dragged out process.

4.2.2.2 Transfer pricing issues relating to marketing hubs

It was relatively early in the history of global business optimization for marketing and, in some cases, procurement functions to be moved from the mining entity to a foreign related party hub. Many mining subsidiaries now use a marketing hub entity created by the MNE in a foreign country on the basis that it is closer to customers, trading centres and shipping/warehousing facilities, which generally are low-tax jurisdictions.[61] In a minority of cases the marketing hub accepts physical delivery of the mineral products and provides full warehousing, packaging and distribution services. However, it is more often that so-called 'triangular' transactions occur, often involving sales on the 'high seas' taking place as shown in Figure A.11. Under these circumstances the marketing company may be handling the customer liaison and the sales contractual arrangements, and may or may not take title. Sometimes the marketing hub also performs a shipping and insurance

[59]Double tax agreement, Tax Information Exchange Agreement (TIES) or signatories to the OECD multilateral convention on administrative assistance in tax administration.

[60]Multilateral Convention on Mutual Administrative Assistance in Tax Matters which entered into force 1 June 2011. African countries signatories to the Convention are Cameroon, Ghana, Morocco, Nigeria, South Africa and Tunisia.

[61]This may not be obvious from the headline tax rate; for example, Luxembourg has a 30% company tax rate but agreements may be made with the government to reduce the tax down in some cases to 2.5%. Other jurisdictions, as for instance Singapore, engage in similar agreements or specific concessions.

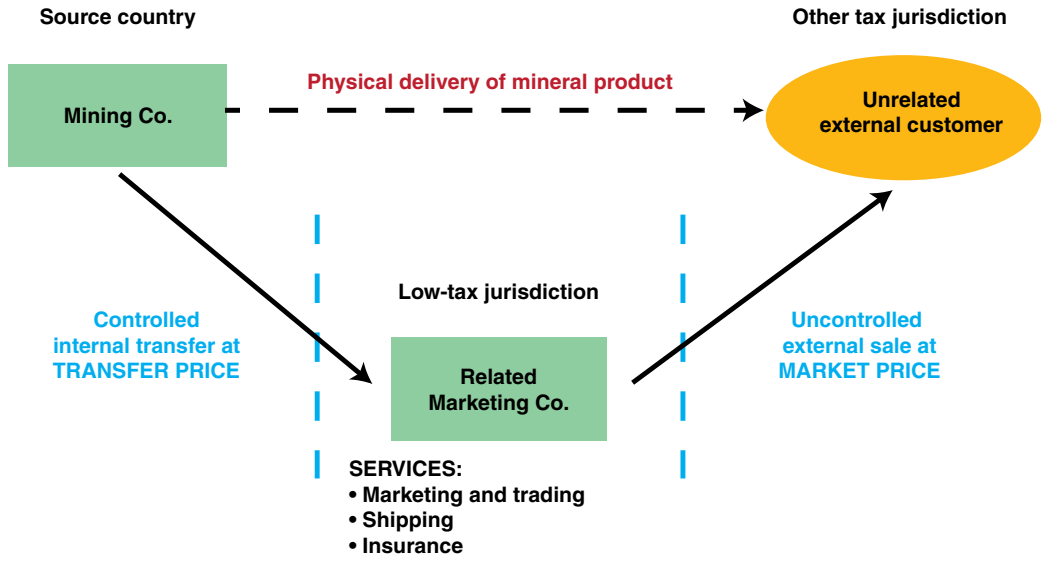
Box A.4: Tax Information Exchange Agreements (TIEAs) and OECD Multilateral Convention

Comprehensive bilateral double tax treaties are not necessary for international exchange of information. Mechanisms can be delivered by Tax Information Exchange Agreements (TIEAs) and also by multilateral treaty. Signatory to the Multilateral Convention on Mutual Administrative Assistance in Tax Matters, which entered into force 1 June 2011 are the African countries of Cameroon, Ghana, Morocco, Nigeria, South Africa and Tunisia.

TIEAs address information exchange only and require exchange of 'foreseeably relevant' information. They follow a standard and fairly simple bilateral model that was developed by the OECD and non-member states. Consequently negotiations are often conducted by correspondence. Some change to revenue administration laws would be needed to enable a country to collect and exchange all relevant information, even if that information is not required for its own purposes or is held by a financial institution. The information goes beyond financial information to information about ownership structures. There would also need to be rules to facilitate cooperation in tax investigations. There has been a rapid increase in numbers of TIEAs in recent years, which may also be entered into between regional countries.

The OECD multilateral convention covers similar issues to the bilateral TIEA. There is some scope for countries to preserve their position on part of the multilateral convention. A country could quickly develop a network of information exchange with over 70 major countries, including all major trading and investment partners. The main advantage with the OECD multilateral convention is that a once-only investment in ratifying the multilateral convention is made. Similar changes to revenue administration laws for TIEAs may also be required.

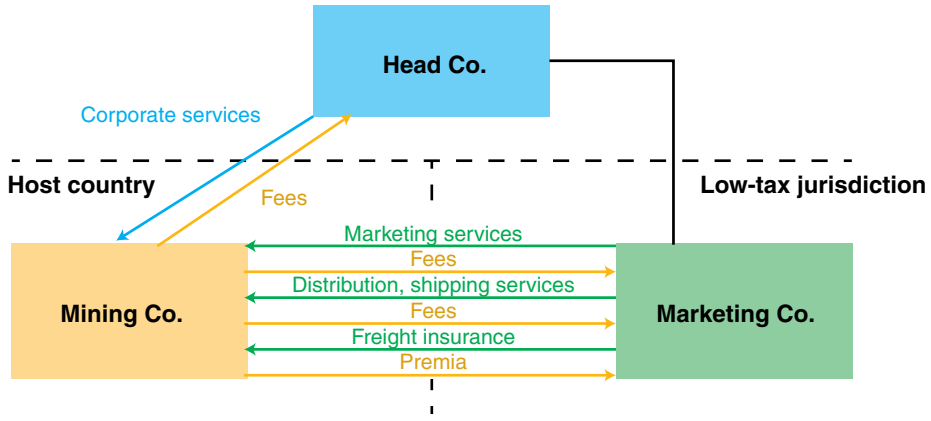
Figure A.11: Schematic representation of a 'triangular' transfer/sales transaction



brokerage role. Inventory management, warehousing and ship loading, that is to say the physical side of distribution are generally carried out by the mining company or another associated entity.

The complexity of comparability analysis in determining what is an appropriate arm's-length charge for transactions involving the transfer of mineral products to a related entity performing smelting/refining and/or trading/marketing functions may be largely influenced by a range of issues, such as:

Figure A.12: Diagrammatic flow of services and payments for a marketing hub



- Determining when during the 'quotation period' ownership of the mineral is actually transferred, which, given the volatility of commodity prices, may influence the applicable transfer price[62] and adjustments for discrepancies in transport and other incidental expenses. These issues have been ameliorated by the recent revision of Chapter II of the TP Guidelines included in the 2015 BEPS Final Reports package on deemed pricing dates;
- Mode and timing of payment, creating opportunities for free credit;
- Criteria for establishing marketing fees including the degree to which these services include the possible use of specialised proprietary IP and other intangibles; and
- Determination of payable grades, precious metals credits, penalties for impurities, etc.

Some of these pricing issues will be discussed in greater detail in Part B, where specific detailed examples are provided for some individual mineral commodities.

As already discussed, the functions performed by a **marketing service provider** may range from marketing support through to the role of commissionaire or marketing agent to that of a fully-fledged **Marketing Hub** (Figure A.12). Determination of which of the above roles is performed should be based on facts, as to whether the hub is fully resourced financially and physically to carry out the functions, assumes ownership and takes delivery of the minerals, and is in a position to bear and actually bears the related risks. Accordingly, the functions performed by the hub may or may not include any of the following:

- **Marketing Services** involving:
  - Engaging customers
  - Handling orders
  - Processing of related financial transactions
  - Providing support for the product marketed
  - Development of innovative marketing systems and strategies, particularly for those mineral products that are not commonly traded in terminal markets, requiring specific customer specifications.
- **Shipping and Distribution Services** involving:
  - Arranging chartering of ore carriers or other vessels and of possible transhipping
  - Warehousing and packaging products for shipping and distribution to customers

[62]The recently release OECD's BEPS publication *Aligning Transfer Pricing Outcomes to Value Creation,* Actions 8–10—2015 Final Reports specifically addresses this type of risk.

- Negotiating address commission,[63] dead freight, bunkerage and demurrage[64]
- Providing for frequently captive freight insurance, as discussed later.

As the list shows, the functions carried out by many foreign marketing hubs have changed over the years with a trend towards a broader range of services being provided. Many of the marketing hubs now claim to be adding greater economic value, which in their view justifies remuneration moving from a cost plus basis, which is typically associated with the functional profile of a cost centre, to one of the higher forms of remuneration typically associated with the functional profile of a profit centre. This is especially the case where the marketing hub takes physical (not just legal) ownership of the mineral product upon or after export and on-sells it to an end user.

The fundamental question from a tax authority's point of view relates to the extent to which the marketing hub can in substance add value to the value chain through influencing the price of the underlying commodity, the cost of production and transport, and/or the quantities that are sold.

While it is true that marketing activities may add some value, the degree to which they will do so depends primarily, as shown in Table A.4, on the nature of the product sold. The value added will range from very low for sales of refined base and precious metals into terminal markets, where their stringent specifications are met primarily by the mining company's operations at source, to high in the case of some specialty metals and some non-metallic industrial minerals where marketing entails identifying and satisfying unique and stringent specifications set by potential customers on the basis of their value-in-use. The value added by marketing may be very high in the case of certain fancy gemstones (e.g., pink diamonds), the demand for which has been created by cleverly devised advertising campaigns and by a selective, by-invitation, approach to their tenders through high-fashion houses in New York and Paris. In essence, the amount of value added by the 'marketing' functions is largely dependent on the nature of the different commodities handled and related technical complexity in meeting the market demands for quality.

Contractual arrangements between the mining company and a related marketing hub may involve a change in ownership beyond the export point. The mining hub entity will also have contractual arrangements in place covering sales of the product to unrelated parties. A question arises as to whether these contractual arrangements amount to the undertaking of a distribution function, especially where the mineral product is shipped directly from the host country to the foreign purchaser, that is to say sold on the "high seas" and is not off-loaded or repackaged in the country in which the marketing hub is located.

Very high-value markups, in excess of 2.5% of the value of sales, have been reported[65] in the case of iron ore and coal marketing hubs based in Singapore. In the case of one of the main Australian producers, high markups have generated an average of about $1 billion in revenue for the hub in recent years. This has been the subject of an inquiry resulting in AUD 522 million adjustments to the tax payable by the Australian entity and of AUD 288 million adjustment to its mineral royalty liability.

This level of markup can lead to Berry ratios[66] that vastly exceed those that may be expected by the largest majority of businesses, even high-end professional service providers. For example, Berry

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[63]This is a commission typically of the order of a few percentage points charged by the charterer to the owner of the vessel in addition to any commission charged by a possible shipping broker. The ship owner will tend to add these commissions to the shipping rate per tonne of cargo to be charged to the charterer. It is in effect a mechanism whereby charterers can direct moneys toward the cost of running their department, which in some instances may escape the attention of relevant tax authorities.

[64]Demurrage at the port of export is generally accounted for as part of the operating cost, that at the port of destination as part of the marketing/shipping cost.

[65]Australian Financial Review (April 22, 2015) and (April 7, 2015).

[66]The Berry ratio is one of a range of profitability measures calculated as the gross profit divided by operating expenses on an accrual basis (www.wikipedia.com).

Table A.4: Specification, marketing modalities and pricing of various commodities, related sources of information and indicative value of marketing intangibles

Mineral Products	Refined Base and Precious Metals	Bulk Commodities	Intermediate Products		Nonmetallic Industrial Minerals	Gemstones
			Physical Concentrates	Metallurgical Products & Specialty Metals		
Typical Mineral Products	Cu, Pb, Zn, Ni, Co, Sn, Al, Au, Ag, Pt, Pl	Iron ore, coking and steam coal, manganese ore, phosphate rock	Cu(Au), Zn(Ag), Pb(Ag), Zn-Pb, Co, Mo, Ni, heavy minerals (Ti, Zr), magnetite, titano-magnetite, chromite, cassiterite, tantalite-columbite	Blister copper, nickel matte, alumina, doré, mixed rare earth oxides, vanadium pentoxide, titanium sponge, zirconia and dioxide, alumina, ferroalloys, U_3O_8, lithium carbonate, chromite	While there is a vast array of non-metallic minerals used domestically, only a minority is subject to cross-border trading, e.g., barite, fluorite, graphite, industrial diamonds, beryl, etc.	Rough diamonds, other gemstones
Specifications	Standard, stringent and inflexible	Multiple standards, flexible, and subject to discounts and premia for quality	Multiple standards, flexible, and subject to discounts and premia for quality	Multiple standards, flexible, and subject to discounts and premia for quality	Customer-defined and based on value-in-use	Based on multiple quality attributes and/or on trends in fashion
Markets	Terminal commodity markets and OTC sales	Medium- to-long-term off-take contracts with prices re-negotiated at frequent intervals, subordinately spot sales	Multi-annual contracts with individual smelter/refiners under reasonably standard contract formulae, limited spot sales	Sales to individual smelter/refiners under less standardised contract formulae	Off-take and/or spot sales to individual end users	Sold through tenders on specialised markets in assortments or as individual stones
Prices	Daily quoted prices	Daily price indices for selected grades	Negotiated hybrid prices, i.e., LME less TC/RC	Negotiated prices	Producers' price lists and negotiated prices with significant traders intermediation	Producers' price lists and tender prices
Sources	Easily obtainable from the LME, NYMEX, LBMA, LPPM, John Mathey and Kitco, etc.	Easily obtainable from Platts, Metal Bulletin, Metals and Minerals, globalCOAL . . . etc.	Reported in industry journals and specialised magazines, CRU, AME, Reuters, Bloomberg	Specialised trading magazines, World Bureau of Metal Statistics	Specialised trading magazines, e.g., Industrial Minerals and Mineral PriceWatch	Diamond Trading Corporation (DTC) (De Beers) Price Book, Rapport diamond price list, Gemmological Institute of America (GIA)
Value of Marketing Services and Intangibles	Low	Low to medium	Medium	Medium to high	High	Extremely high

ratios as high as 6.5 have been observed, which means that profits were 650% the magnitude of operating costs.[67] Such circumstances raise a number of issues about whether such arrangements are consistent with the arm's length principle, including whether a mining company dealing at arm's length with an independent party would have entered into an arrangement on the same terms and conditions. It would also be expected that with such a high Berry ratio of profitability the market would be very quickly contested, and third parties would be offering the same services at lower prices.

Needless to say that this very high rate of profitability has been, and continues to be, strongly contested by the relevant tax authorities. In the case of one of the major bulk commodity producers, this has led to adjustments amounting to many hundreds of millions of dollars in both tax and royalty payments. At the time of publication, these issues were still being resolved in the courts.

It should be noted that Berry ratios are only an 'indicator', a risk filter of potential transfer pricing issues and they are not used by tax administrations to compute the arm's length price in the risk assessment and audit phases. As such, Berry ratios should be used with some caution[68] for high value professional services, such as with some mining service providers. They are also generally not useful as an indicator for nonroutine cases involving the use of high value intangibles.[69] When used with such cautions in mind, Berry Ratios are a relatively simple detection risk filter that can be used across a large number of tax returns to quickly identify cases that might warrant further scrutiny and assurance via a more detailed risk assessment.

When looking at marketing and related arrangements it is important to examine the contract between the miner and the marketing entity to identify the legal allocation of risk. The contract terms and conditions should then be compared to the economic reality, which is to say to the actual conditions established by the functional analysis.

In addition, for the sake of transparency, it would be expected that the contract between the marketing entity and the independent purchaser of the mineral product should also be provided by the MNE and examined by the tax administration. However, MNEs' subsidiaries often prevent these contracts being provided to the tax administration, arguing that they are not the legal holder of the information, and therefore unable to provide it. This is remarkable considering that the MNE parent company is the ultimate controller of all its subsidiaries activities including their flow of information and should be in a position, if it wanted, to disclose that information. In addition, it may claim that access to information should be restricted on the basis of its commercial and in confidence nature. It is suggested that such claims should also be rejected in the interests of transparency, as well as recognizing that tax administrations are usually bound by secrecy provisions from disclosing such information. The annual financial accounts of some of the entities constituting the marketing hub may, however, be publicly available in some of the jurisdictions[70] in which they reside.

Under some jurisdictions, the law includes deeming provisions or the ability to disregard the actual conditions agreed and replace them with 'arm's-length conditions'. In other words, the practice of transfer pricing is not limited to merely pricing the actual conditions agreed by the associated enterprises without regard to the surrounding questions in relation to whether or not they are conditions that independent parties acting in their own commercial interests would have agreed. Deeming provisions are also found in the mineral royalty legislation of some countries to address the determination of the value on which *ad valorem* mineral royalties should be levied. If companies

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[67]http://www.smh.com.au/cqstatic/12z7v7/BHP%20Billiton%20Marketing%20AG%20AR$2014.pdf

[68]Martin Przysuski and Srini Lalapet, "A Comprehensive Look at the Berry Ratio in Transfer Pricing," Tax Notes Int'l, November 21, 2005, p. 759.

[69]Charles H. Berry, "Berry Ratios: Their Use and Misuse," *Journal of Global Transfer Pricing*, April–May 1999.

[70]http://www.smh.com.au/cqstatic/12z7v7/BHP%20Billiton%20Marketing%20AG%20AR$2014.pdf

fail to produce the actual sales invoices from marketing hubs to third parties, a process is triggered whereby the taxing authorities estimate and recommend to the relevant Ministers an alternative price for his/her determination leading to adjustments in the amount of royalty payable.

The marketing contracts between related parties should be examined to determine whether they are consistent with the terms and conditions observed in unrelated party dealings, keeping in mind that some comparability adjustments may be necessary for possible differences if the unrelated sales are at the prevailing spot price. This would include looking at the hub's ability to bear the risk and its ability to mitigate or control the related risk factors to determine whether the risk allocation implied in the contract is grounded in reality.[71]

Some of the financial risks that should be considered are:

1. Credit risk, which includes risk of nonpayment. In the context of mining some of the factors that would need to be looked at are:
   a. the likelihood of the nonpayment given the standing of the purchasers (especially as many purchases, as for instance by Chinese purchasers, are State backed);
   b. what is done to mitigate the consequences, for instance by requiring the application of advance payment or part payment, security and guarantees.
2. Transport risk, which includes the risk for loss during shipping. In the context of mining products this risk is often dealt with by insurance, which may be through a related party captive insurer, which in turn, may be covered through reinsurance.
3. Inventory risk, which involves the risk of carrying inventory when either demand slows or prices drop or both. This risk will arise only where the marketer is also a true distributor and maintains a stockpile.
4. Human resource risk of losing key staff, which in turn may mean the loss of key clients.

Box A.5 portrays the results of an audit recently conducted by SARS of a marketing hub conducting sales of mineral commodities on the high seas on behalf of a South African producer.

To determine an appropriate arm's length profit margin analysts are often confronted with having to choose within a range of relevant comparables, often displaying, as shown in Box A.5, significantly different values. Deciding upon which value within the range should be accepted/selected will be determined by taking into account the characteristics of the transaction, keeping in mind that in an uncontrolled transaction the bargaining power to negotiate a remuneration high in the range would have been greater for a party providing services involving significant use of tangible and intangible assets and the bearing of significant risk.

In practice two approaches are generally adopted, which make use of the percentiles of the distribution of comparables values, and in particular:

- The median, i.e., 50th percentile or second quartile (Q2), that is to say the value where half of the comparable values per unit sold or transferred are lower and half higher. The median is a better measure than a simple arithmetic mean that may be distorted if the value distribution is skewed. This is the measure most commonly adopted by the tax administration in transfer pricing cases (where mispricing is alleged); or
- The inter-quartile range, i.e., selecting a value between the first quartile (Q1) (where 25% of values are lower) and the 3rd quartile (Q3) (where 75% of values are lower). The remuneration is placed within the inter-quartile range based on the degree of asset utilization and risk bearing.

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[71]Page 6, PwC Transfer pricing perspectives, Resolutions, moving towards certainty, quoting US representative introducing the topic in Issue Note 1 Discussion Draft—Discussion Draft on Transfer Pricing Aspects of Business Restructurings—2 day public consultation, 9 and 10 June 2009.

Box A.5: Determination of whether a marketing hub performed the functions of a fully-fledged marketer or merely those of a sales agent or commissionaire

The South African mining company that produces the commodities employs over a dozen thousand people, owns the related mining licenses and technology and arranges the logistics to convey its product to the export harbor. It also maintains a stockpile and bears the market risk, customer credit risk, foreign exchange risk, product liability risk, and inventory and quality risk.

The mining company has developed strong relationships directly with 12 key, long-term supply customers. Sales are carried out using a related marketing company registered in a low-tax foreign jurisdiction, which employs two managerial and two support staff. The marketing company handles customer relationships, markets the commodities and negotiates sales contracts, but bears limited or no risk. The marketing company sells both directly to third parties, in which case it charges 8% of the FOB value of sales, or outsources its functions to a third party agent that earns 3% of the FOB value.

The marketing company justifies its transfer prices on the basis of an external benchmark for distribution of metals with an **arm's length range** of 1.32 to 16.36% and a median of 3.32%.

The marketing company maintained that it performs the role of a full risk-taking marketer/distributor responsible for around 35% of the world's demand for the specific commodity and as such performs a vital role in expanding the business of the entire group. However the facts and documentary evidence provided by the taxpayer to SARS indicate that for the last 20 years few additional customers were established beyond the original 12 key customers procured by the mining company. Yet, over a period of 10 years the marketing company received R 10 billion worth of profits justified on the basis of their claimed strategic and vital role in the supply chain and of the related risk borne.

At the conclusion of the audit SARS took the view that:

- The marketing company in substance performed the functions of a marketing agent;
- Was not bearing the full risk; and
- The comparable data provided by the taxpayer were not reliable.

The recommended methodology to calculate the median and first and third quartiles is illustrated in Box A.6. In general, it is easier to source comparables for routine functions making low use of intangibles (e.g., accounting) than for specialized nonroutine services involving a high level of proprietary IP and/or risk-bearing (e.g., engineering/process design) for which it would be more likely that possible comparables may be obtainable in the general field of research and development.

Suggested questions that could be asked by the tax administration when undertaking a functional analysis of a marketing hub during the audit stage have been provided in Appendix A.4.

4.2.3 Corporate services hub

Use of inappropriate transfer prices may occur in the provision of some administrative and corporate services. The range of services that may be provided by a parent company is broad and it should be noted that some services might be undertaken in specific hubs. Some of the more common corporate services provided include:

- Corporate planning
- Budgetary control
- Accounting
- Auditing
- Legal
- Computer services
- Procurement and property services
- Human resource services including recruitment, payroll, training
- Research and development services

Box A.6: How to calculate the percentiles and quartiles within a range of profit margin comparables

Irrespective of whether the comparables relate to routine or nonroutine functions, there are a number of methods to calculate various percentiles including the quartiles of a sample. To the extent that analysts will nowadays use computer spreadsheets to make the relevant calculations, the two methods described below are those underpinning the 2013 version of Microsoft Excel, i.e.:

- A—Inclusive percentiles, which will be used if the number of members (N) in the sample is large and values below the minimum and above the maximum are considered highly improbable, that is to say that their cumulative probability distribution is zero and 100% respectively, and
- B—Exclusive percentiles, which will be used if N is small and one may expect that values below the minimum and above the maximum may occur, albeit with a relatively low level of probability.

It is assumed that the search for comparables in terms of arm's length margins realized on the provision of a specific specialized technical service has yielded a number ($N = 7$) of individually different values as listed in Table c, ranging between a minimum of 4.8% and a maximum of 14% of the total price of the transactions. Sometimes more than one member in the sample may have the same value.

The process involves first sorting the comparable values in ascending order after which the ordinal ranking (n) for the required percentile P expressed as a proportion between 0 and 1 (i.e., the P for the first quartile (Q1) or 25th percentile is 0.25) can then be obtained from the following formulae:

- Inclusive: $n = P * (N - 1) + 1$, and
- Exclusive: $n = P * (N + 1)$.

The value of the comparable corresponding to rank n can then either be read from the sorted list of values, or, if not a member of the sample, obtained by linear interpolation between the values of the closest two ranks either side of n. Depending on the number of members N and the method used, interpolation may yield quartile values that may not be members of the original ordered list of comparables (see Q1 and Q3 in case A in Table c). For instance, given its fractional value of $n = 2.5$, the interpolated value of Q1 will be the value of rank 2 (i.e., 5.3%) plus 0.5 times the difference between the value of rank 3 minus that of rank 2 (i.e., 6.2% − 5.3%), that is to say 5.3% + 0.45% = 5.75%.

If, for any particular reason, one wishes for percentiles to be an actual member of the original ordered list then, as shown in Table c, the ordered rank n can be rounded. If the list has less than 100 members the values of some close percentiles will be the same.

Furthermore, as N is uneven the 50th percentile (median) can be obtained directly from the value of rank 4 (i.e., 7.1%) in the ordered list. It will be noted that given $N = 7$ the ordered rank ns obtained for Q1, Q2 and Q3 using the exclusive methodology are full integers (see case B of Table c) and no interpolation is in this case necessary. It will be noticed that the exclusive approach provides greater weighting for the extreme values of the sample thus broadening the inter-quartile range compared to that obtained using the inclusive approach. However, as the number of members (N) increases this difference progressively narrows down and at the limit the results of the two methods converge.

In conclusion a service entailing lower levels of asset utilization and risk-bearing should command a profit margin of 5.3% to 5.8%, while one utilizing higher levels and the assumption of higher risk would justify a margin of 10.0% to 11.5%, with attribution of profit margins for in-between cases requiring detailed individual functional analysis and a degree of case-to-case judgement.

Box continues on next page

Key considerations from the perspective of the tax administration are whether the terms and conditions of the service provision are those that would be agreed to by independent parties, whether the provision of the services adds value to the subsidiary (i.e., whether benefits associated with the charge are not identifiable or the charge is for a duplicated service),[72] and whether the transfer price charged is on an arm's length basis.

[72]OECD TFP Guidelines 7.11 as amended by OECD (2015), 2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

Box A.6: (continued)

Table c: Calculation of median and inter-quartile range for the value of comparables

Comparable value (margin %)	4.8%	5.3%	6.2%	7.1%	8.5%	11.5%	14.0%
Ordered rank (n)	1	2	3	4	5	6	7
Total number of members (N)	7						

Required quartile	Q1	Q2 Median	Q3
Corresponding percentile (P)	0.25	0.50	0.75

A—Inclusive Percentile Method (i.e., first member in ordered value list attributed a cumulative probability of 0% and last member 100%)

Required quartile	Q1	Q2	Q3	
Ordered rank (n) corresponding to P	2.5	4.0	5.5	= P * (N − 1) + 1
Rounded ordered rank (n) corresponding to P	3.0	4.0	6.0	
Inclusive rounded value of quartile (margin %)	**6.2%**	**7.1%**	**11.5%**	Value of ranks 3, 4 and 6 respectively
Inclusive interpolated value of quartile (margin %)	**5.8%**	**7.1%**	**10.00%**	
(Same as from Excel's function 'percentile.inc')	= Value of rank 2 (5.8%) + 0.5 * (Value of rank 3 (6.2%) − value of rank 2 (5.8%)) = Value of rank 4 = Value of rank 5 (8.5%) + 0.5 * (Value of rank 6 (11%) − value of rank 5 (8.5%))			

B—Exclusive Percentile Method (i.e., first member attributed a cumulative probability of 1/(N + 1) and last member 100% − (1/(N + 1) * 100)

Required quartile	Q1	Q2	Q3	
Ordered rank (n) corresponding to P	2.0	4.0	6.0	= P * (N + 1) + 1
Exclusive value of quartile (margin %)	**5.3%**	**7.1%**	**11.5%**	Values of ranks 2, 4, and 6 respectively
(Same as from Excel's function 'percentile.exc')				

Note: In this example with N = 7 the exclusive ordered ranks (n) corresponding to the required quartiles are integers, hence, no need to interpolate.

In general there should be evidence that the service has actually been provided, though in some cases a charge might be made for an 'on call service'[73] such as a retainer fee for a firm of lawyers, or for the use of a backup computer facility. In such circumstances the tax administration should ascertain whether the likelihood of calling on the service was too remote to warrant a fee being

[73]OECD TFP Guidelines 7.16 as amended by OECD (2015), 2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

charged to the subsidiary. This might be checked by examining the frequency of use of the on call service over a period of time (e.g., over several years).[74]

Where a direct charge (actual use) mechanism has been used in the allocation of corporate service fees the tax administration should ascertain and check the approach used, such as timesheets and internal invoicing, without overinvesting in such verification activity. Limited random samples are usually all that is required to verify the rigor of the direct charge control mechanism.

Where an indirect charging mechanism is used, such as a cost allocation or apportionment method, the tax administration should ensure that the allocation key gives sufficient regard to the value of the service received (i.e., it makes sense) and the extent to which a comparable service would have been provided to and paid for by an independent enterprise.[75] For example, merely allocating part of head office costs across to a mining subsidiary of the MNE on the basis of turnover would generally provide an insufficient nexus to an identifiable and reasonably foreseeable benefit in the subsidiary. However, allocating a portion of overall HR costs to a mining subsidiary on the basis of staff numbers or salary costs is probably an acceptable allocation key, provided the HR services being charged for are not duplicated in the subsidiary.

Having identified and verified the charging mechanism for the various corporate services (the volume aspect), the tax administration then needs to verify that the prices charged are comparable with those that an independent provider would have charged (the price aspect).

For routine corporate services the most appropriate transfer pricing method is likely to be cost-plus (e.g., cost plus a small margin of say 5% is not uncommon). However, the cost aspect should not be blindly accepted by a tax administration as, given a choice, the recipient of the service would not pay more for an internal service than it could pay for the same service in the open market. In such circumstances a CUP may be the most appropriate method of pricing the service, although, except for daily rates for similar professional services, the use of a CUP in the provision of inter-company services is not frequently observed in practice.

If the MNE is using an alleged CUP that in effect generates a very high cost-plus outcome, the CUP is unlikely to have been the most appropriate transfer pricing method. Routine functions expect routine rates of return and should not be a significant profit centre for the MNE.

It is on this basis that the OECD's Actions 8–10—2015 Final Report recommends applying such 5% margin as a simplified measure for a wide category of non-core, intra-group services that command very limited profit markups. This provides a more consistent treatment for all taxpayers operating under similar circumstances, and reducing the need for resource-intensive in-depth audits, while limiting the risk of overcharging. Another example, is the US IRS section 482 regulations which use a similar approach in the so-called 'Services Cost Method' for low margin (less than 7%) services. Some countries, however, have indicated reluctance to adopt the simplified approach on the grounds that head office and management services can still constitute a potentially major source of profit shifting. In such instances the simplified approach could be applied in combination with appropriately set thresholds.

For uncommon services involving a higher degree of expertise, the likelihood of identifying a CUP is more difficult, and the cost plus margin is likely to be somewhat greater. These services would often be more in the nature of technical or financial services that are discussed in the following sections.

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[74]OECD TFP Guidelines 7.17 as amended by OECD (2015), 2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

[75]OECD TFP Guidelines 7.23 as amended by OECD (2015), 2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

In the African context, instances have been observed where the MNE's head office and/or subsidiaries providing corporate services have been charging for them on the basis of a percentage of sales. This approach, which is equivalent to a mineral royalty, bears no relationship to the cost and/or value of the services provided and should not be accepted by the tax authority.

If the service being charged for is in the nature of a contribution to the MNE's R&D efforts, particular care is needed by the tax administration. Court cases have established that mutual R&D funds may lack sufficient connection between the expense and the earning of income by the mining subsidiary. The allocation approach to R&D expenditure can therefore lack sufficient nexus to the provision of a reasonably identifiable benefit that an independent party would have been prepared to pay for. Where an R&D charge has been made, one would not expect to subsequently have to pay a royalty for use of the IP that may have been developed by that R&D program.

4.2.4 Engineering, science and technical hub

To achieve effective critical mass and operational efficiency, MNEs often consolidate most of their nonroutine and high value-adding specialized engineering, scientific, technical and R&D capabilities, as well as related intangibles assets, into one or more subsidiaries. In the case of R&D subsidiaries, they are generally located in countries where there is good research infrastructure, and where it is easier to attract and retain the required specialized technical skills. Not surprisingly, the decision as to where to locate some of these subsidiaries, constituting the **Engineering, Science and Technical (EST) Hubs** of the MNE, is also heavily influenced by fiscal considerations.

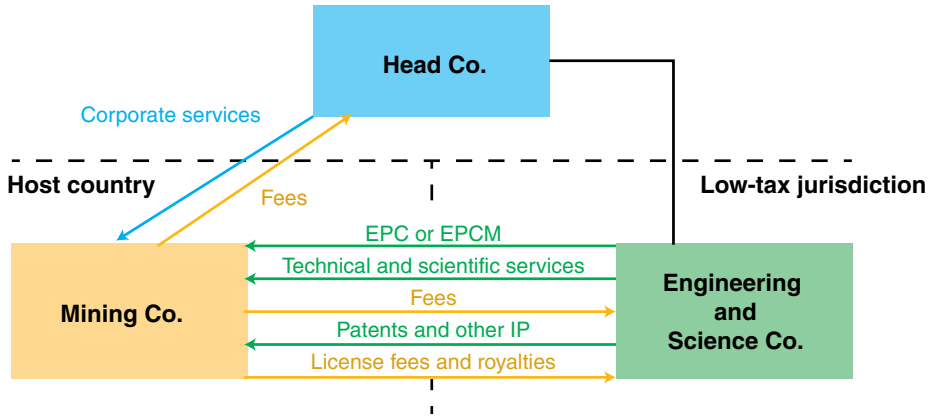
Cost contribution arrangements are commonly entered into by parties involved in the joint development, production or obtaining of assets (both tangible and intangible) or services which are expected to create benefits for each of the parties. The OECD transfer pricing guidelines have recently been updated (Chapter VIII) as part of the BEPS Actions 8–10 for such arrangements[76] to ensure that contributions to and the benefits that flow from such arrangements are valued on an arm's length basis and the profits are not shifted away from the location where the value is created through economic activities performed. Cost contribution arrangements are more likely to occur in African mining countries with a long history of mining development (such as South Africa) rather than those at early stages of development. Where contribution has been made to the development of, for example, specialized mining know-how or IP, the arm's length principle for such arrangements means that each participant would be entitled to receive benefits resulting from the activities of the arrangement without further cost, which are proportionate to their contribution. It would not be expected that arm's length parties would agree to pay additional consideration in these circumstances.

An **Engineering, Science and Technical Hub** (Figure A.13) generally provides:

- Delivery of new mining assets through **Engineering, Procurement and Construction (EPC)** contracts;
- Management of mine development and construction through **Engineering, Procurement Construction and Management (EPCM)** contracts;
- On-going specialised **Technical and Scientific Services** during the life of a mining operation, including custom **R&D** and training; and
- Access to specialised intangibles such as **Patented Assets and other proprietary IP**, including exploration, mining and metallurgical methods and processes, software applications, etc.

[76]See pp. 163–183, OECD. (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

Figure A.13: Illustration of Engineering, Science and Technical Services Hub within the MNE structure



While the structure in Figure A.13 shows patents and other IP being held and managed in the EST hub, it would not be uncommon for IP associated with all functions to be held and managed from a separate hub within the MNE group. A separate IP hub may hold IP for the whole MNE or parts thereof (i.e., on a regional basis), and is likely to be located itself in a low tax jurisdiction with treaty benefits. In such circumstances, the EST hub may obtain certain (possibly limited) rights to use patents and other IP from the separate IP hub, which it may in turn embed into the cost of services provided to the Mining Co., or it may on-license the IP in its own right for use by the Mining Co.

Mining companies in Africa are likely to have transactions with their related EST hubs that involve the transfer or use of intangibles. The OECD has recently revised its transfer pricing guidelines for intangibles (Chapter VI)[77] ensuring that profits associated with the transfer and use of intangibles are appropriately allocated in accordance with value creation. Particularly relevant to the mining sector, are these guidelines:

- Provide a definition of intangibles for transfer pricing purposes—something that is capable of being owned or controlled for use in commercial activities (but not a physical asset or a financial asset) where an independent party would compensate for its use or transfer if the transaction had occurred in comparable circumstances. This definition is not focused just on legal or accounting definitions.
- Do not allocate returns to the entity (which may include an EST hub) which merely owns the intangible asset; rather those returns are allocated to the MNE group entities (which may include the mining company in Africa) which perform important functions, control economically significant risks and contribute assets, as determined through the accurate delineation of the actual transaction.
- Permit the use of valuation techniques to estimate an arm's length price when reliable comparable uncontrolled transactions cannot be identified, for example, the proper application of income based valuation techniques, especially those premised on calculation of discounted value of projected future income streams or cash flows derived from exploitation of the intangible.
- Permit tax administrations, in certain circumstances, to use ex poste outcomes as presumptive evidence about the ex ante pricing arrangements for hard-to-value intangibles.

[77] As a result of OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

> Hard-to-value-intangibles are those which, at the time of their transfer between related parties, are difficult to predict as ultimate success as their future predictions as to income and assumptions are highly uncertain. Furthermore no reliable comparables exist for hard-to-value intangibles.

Establishing a new mining operation requires significant up-front capital investment in designing the mine, procuring all the necessary supplies, plant and equipment, and finally managing its development and construction. Project owners generally contract out these activities by means of two distinct and very different (in spite of their similarity of names) types of arrangements:

- **Engineering, procurement and construction (EPC)** contracts, and
- **Engineering, procurement and construction management (EPCM)** contracts.

Under an **EPC** contract, the contractor must deliver a complete facility conforming to agreed design and performance specifications by a set date and for a guaranteed price ('turn-key' contract). There is generally very limited scope in these contracts to claim for extensions of time and/or additional costs. To be fully accountable, the EPC contractor must have extensive discretion in terms of technical mine design, processing plant flow sheets and procurement choices relating to development/construction activities covered by the EPC contract. They must also be the principal and have full control for all related subcontracts. An EPC contractor generally brings to the project significant levels of, often proprietary, technical know-how and project management expertise. As a result, the contractor typically bears all risks, both technical in terms of mine design and processing plant flow sheets and financial in terms of choice and management of subcontractors that may result in cost and timing over-runs.[78]

In essence, an **EPC contract** is most suitable for well-defined projects after detailed engineering design has been completed, which allows for the owner to take a 'hands-off' approach to its development. EPC offers the owners a single point of contact and responsibility for project performance, which minimizes staff requirements, liabilities and technological risk as the project output is guaranteed by the contractor, who must fix any problem that may arise and be liable for any related blowout in costs. It, however, limits the owner's ability to impose changes and intervene when problems occur during construction, raising the potential for contractual disputes.

An **EPCM** contractor, by contrast, will generally enjoy a modest degree of independence in terms of making technical design and procurement decisions, which will be primarily influenced by the project owner, who will bear the risk of budgeted cost and time overruns. In most cases suppliers of goods and services to the project, while managed by the EPCM contractor, are in fact contracted directly to the project owners. EPCM contracts, however, may include 'incentives' in the form of bonus payments and penalties to encourage the contractor to achieve project targets by exercising a strict cost-control and management strategy on budgeted costs and schedules. Also, incentives will often be included for the completion of the project in a safe and healthy manner. Bonuses and liabilities are generally limited to a maximum of 10% to 20% of the profit margin, negotiated as part of the remuneration. Uncapped liabilities of course apply in the case of fraud, death and personal injury, consequential losses, etc., which are generally covered by professional indemnity insurance.

Thus, EPCM suits less defined projects where the owner wishes to maintain more flexibility and control over potential changes in the scope of the project and its financing options. By bearing the risks of the project the owner can lower its overall cost and reduce the incidence of legal disputes by identifying and remedying emerging issues before they grow into serious problems. EPCM is in essence a mechanism to contract for specialized professional services. The key characteristics and

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[78]Guidelines issued by the Consultants Society of the Australasian Institute of Mining and Metallurgy (AusIMM), accessible at https://www.ausimm.com.au/Content/docs/societies/setting_consulting_rates.pdf.

differences between EPC and EPCM contracts have been clearly detailed in Appendix A.5, which is reproduced from Plexus Infratech (2015).[79]

From a taxation point of view, the cost of EPC and EPCM contracts is part of the capital cost of creating the mining asset. As such, it is capitalized in the owner's balance sheet and depreciated over time at the capital recovery rate prescribed by the applicable tax legislation. It is also important to note that, contrary to the services provided by some of the other hubs (e.g., finance, insurance, etc.) that can be delivered remotely, a significant proportion of EPC and EPCM services may require the continuous or recurrent presence of the contractor in the country hosting the mining project.

As already mentioned, **the pre-production period of mine development and construction may last a number of years**, during which time the needed supervision and management may be provided by related foreign parties. The EPC contractor's activities in the country are likely to last in excess of 6 to 12 months, which exceeds the limit beyond which, in the presence of a DTA, the UN and OECD conventions would expect the EPC contractor to operate through a Permanent Establishment[80] (PE, i.e., a branch), thus creating a taxable presence in the country even in the absence of a fixed address. Such a PE would be taxed in the host country on the profits attributable to it and to impose withholding tax on dividends, interest and royalties remitted to nonresidents. The country of residence of the foreign hub subsidiary providing the services may in turn provide, to avoid double taxation, foreign tax exemptions and/or credits in computing their tax liability.

Where the hub subsidiary is located in a low-tax jurisdiction it may seek to avoid higher tax rates in the host country by organizing its affairs in such a manner as to prevent the creation of a PE. In the inevitable case where a PE is created, the MNE may seek to minimize the amount of income attributable to the PE, which would be taxed in the host country. Often the approach taken to reduce the incidence of taxation in the host country, and the risk of double taxation, is to break the overall task into a number of short-term components for which individual subcontracts may be drafted abroad with foreign suppliers. Some of these subcontractors may be different members of the same MNE controlling the EPC contractor. BEPs Final Reports Action 7 provides a revision of the standard PE definition as well as adoption of an anti-fragmentation rule, and further work on the attribution of profits to PEs is still to be done.

An alternative, commonly used structure, particularly in the case of EPCM and of on-going specialized **Technical and Scientific Services** required during the operational life of the mine, is for the mining company to secure the services of individual selected members of the Engineering, Science and Technical hub on short- to medium-term contracts, that is to say on secondment, as the need for various specialized services arises. Depending on the duration and/or frequency of the engagement, these individual specialists may have a taxable presence in the country and would generally be taxed on a proportion of their salary on a time basis.

The majority of ongoing specialized technical and scientific services are of a recurrent nature. The related costs will influence the annual taxable income of the mining company and be reported in its profit and loss statement. Given the high value of the services provided and the significant level of risk borne, the fees relating to EPC contracts may include significant compensation for proprietary know-how and contingencies to ward against unforeseeable events. As a consequence, the fees are generally much higher than those of other contractual arrangements, e.g., EPCM. However, this may not be relevant in the context of a MNE, as shifting of risk from the mining subsidiary to an internal EPC contractor would not reduce the total risk at the consolidated level.

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[79]https://plexusconsultants.wordpress.com/services/epcm/engineering-services/epcm/

[80]The term 'permanent establishment' (PE) is a fixed place of business of a nonresident which generally gives rise to an obligation to pay taxes in a particular jurisdiction. The term is used in the domestic tax laws of countries as well as in tax treaties. It comprises both geographic presence (places of business) and temporal presence for a specified time, for example, in excess of 183 days. PEs are often also called 'branches.'

The charge for an EPCM contract is generally structured on a cost-plus basis that may range widely as a percentage of the total capital cost of the project; i.e., from around 5% up to 20%[81] depending on the extent of the services provided and the general demand for them in the market at the time. An EPCM contract will generally specify:

- Hourly or daily rates for the provision of the professional services of various members of the project team having various levels of seniority for the various components of the project,
- Overheads as a fixed percentage of the hourly or daily rates, and
- A generally fixed amount representing the contractor's profit margin.

There is a wealth of information about how to set engineering consulting fees and charges, including the guidelines issued by the Consultants Society of the Australasian Institute of Mining and Metallurgy (AusIMM)[82] and various other professional engineering groups.

While in the final analysis the hourly or daily charge rate will depend on what the market will bear, in practice it is generally derived by first calculating the hours actually available in a year after deducting annual and other leaves, public holidays, staff development time, etc. Then on-costs, including payroll tax, workers compensation insurance, other insurances, office rent, and office expenses and so on, are applied to the salary of individual consultants. Finally, the desired profit margin is added. As outlined by the AusIMM above, in general this markup will be proportionately higher for shorter assignments. A simplified example of such a calculation is provided in Box A.7.

By contrast, given the turnkey nature of most EPC contracts, estimates of manpower needs, in terms of person-days, would include a contingency element that is generally restricted to the contractor's fee-setting process and not necessarily divulged in detail to the project owners. Also, an EPC contract involving innovative processes would generally result in an additional risk premium, frequently of the order of 5% being applied, which makes most EPC contracts worth 10% to 20% of the overall capital cost of a project, with the higher fees in this range generally applying to underground rather than open cut operations.

Assessing an appropriate value for the provision of specialized intangibles, such as **Patented Assets and other proprietary IP**, including exploration, mining and metallurgical methods and processes, software applications, etc., that are held by the Engineering, Science and Technical Hub is much more complex. As already discussed in Section 3.2 (adapted from Huibregtse (2013), albeit with some practical differences in weighting between the OECD and the UN approach) there are three different categories of assets and market features, i.e.:

- **Tangible** assets (Category A), e.g., the mine, related buildings, plant and equipment and infrastructure,
- **Intangible** assets (Category B), e.g., exploration, mining and other rights, patents and IP relating to unique and specialized knowhow, proprietary mining and metallurgical methods and processes, information systems, databases, software, etc., and
- **Location-specific advantages (LSAs),** that is to say specific market features (Category C), which in the case of mineral-rich developing countries would include ready access to mineral resources and lower regulatory and environmental hurdles to mine development and exploitation, and other "synergies" such as availability of a comparatively cheaper yet competent workforce, etc.

These are relevant to an MNE allocating its profits amongst its entities which are parties to related-party transactions. Application of the arm's length principle recognises the functions performed,

[81]These percentages are an approximate range that have been drawn from the commodity by commodity analysis undertaken in Part B of this Guidebook, and are in agreement with figures in Plexus Infratech (2015).

[82]Accessible at https://www.ausimm.com.au/Content/docs/societies/setting_consulting_rates.pdf

Box A.7: Setting consulting rates in a corporate context

The following spreadsheet provides an example of how the hourly/daily consulting rates would be calculated for individual consultants within a corporate consulting firm.

Figure a: Setting consulting rates in a corporate context

Setting Consulting Rates in a Corporate Context
(After: https://www.ausimm.com.au/Content/docs/societies/setting_consulting_rates.pdf)

Weeks in a year	52
Less non-chargeable time:	
Annual leave	4
Sick leave and other entitlements	2.3
Statutory and religious holidays	3
Marketing, admin. and staff development	5.2
Chargeable time (weeks)	37.5
Hours per working week	40
Chargeable time (hours)	**1500**
Gross annual salary package ($'000)	200
Plus:	
On-costs (payroll tax, workers compensation, other insurances, office rent, office expenses, etc.) (%)	60%
Corporate profit margin (%)	15%
Amount to be recovered annually ($'000)	**368**
Hourly charge ($/hr)	**245**
Daily charge ($/d)	**1963**

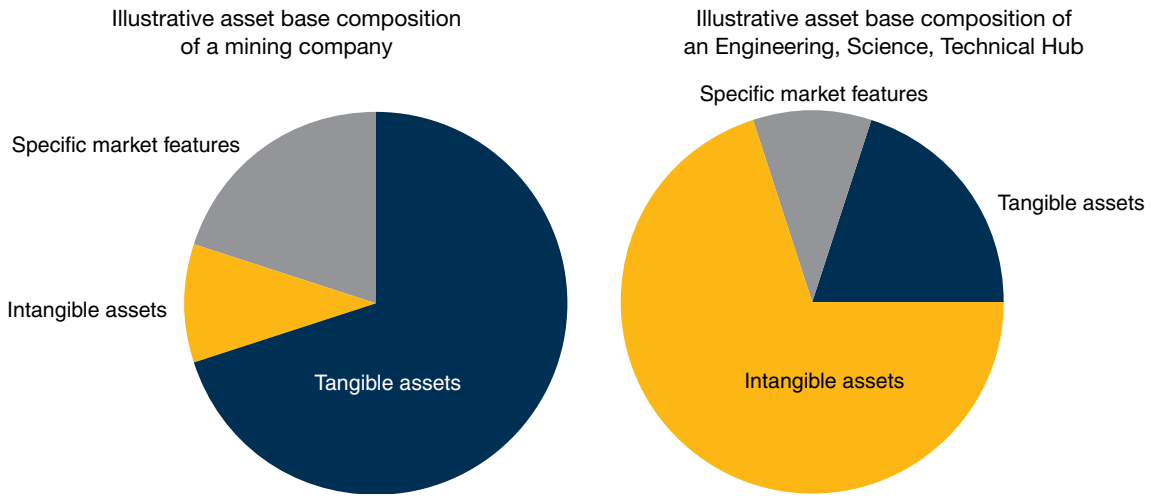
The on-cost component would be lower, say halved, for a consultant operating as an individual out of his own premises, but the chargeable hour may be reduced because of the greater amount of time that he would have to devote to marketing.

the assets utilised and the risks borne. Depending upon commodity pricing in the mining sector, the internal rate return on intangible assets will often be greater than that on tangible assets (recognising, however, that the total value of tangible assets will generally greatly exceed that of intangibles).

A conceptual order of magnitude breakup that may exist among the three categories of assets in a mining company compared to an Engineering, Science and Technical Hub is provided in Figure A.14 where the percentages displayed are only indicative and would vary on a case-by-case basis.

The differences between the asset base compositions of the parties is relevant to what degree their respective functions are routine or unique, as well as their respective bargaining powers in determining profit markups. Due to confidentiality on the grounds of protecting IP and competitiveness, factual information about comparable market-based transactions is very scarce and often unreliable, with relevant transactional databases limited in coverage and extremely expensive to acquire. As a consequence, valuation of intangibles represents a major auditing hurdle and is the area where there is the largest degree of opacity and opportunity for overcharging with a degree of impunity. The revised OECD TP guidelines and their application to intangibles will go some way in assisting tax administrations to deal with transfer pricing in this area. In particular, further

Figure A.14: Illustrative qualitative breakup between the three categories of assets in a mining company and in the Engineering, Science and Technical Hub respectively



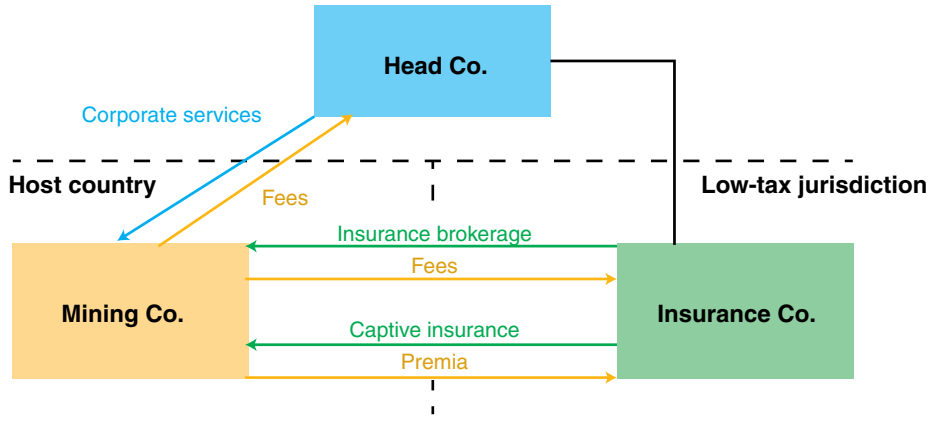
guidance is to be provided on implementation of hard-to-value intangibles and the consideration of ex post outcomes.[83]

4.2.5 Insurance hub

Transfer pricing may occur through the payment of fees and insurance premiums to a related party, generally referred to as an **Insurance Hub** or captive insurer (Figure A.15) that provides:

- **Insurance Brokerage Services**, and
- **Captive Insurance Services.**

Figure A.15: Illustration of Insurance Hub within the MNE structure



[83]Page 64, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

Captive insurance historically started in the mining industry to manage the high level of risks inherent in that sector, as independent insurers were sometimes reluctant to provide an appropriate insurance service given the risky character of the sector at the time. Internal or captive insurance services can provide legitimate and significant financial benefits to a MNE as a whole, particularly where they are used to ensure routine matters (i.e., higher likelihood, low financial consequence events that do not require significant capital reserves to be set aside). A good example of the commercial purpose of captive insurance companies is it provides the group with access to the reinsurance market where the premiums are generally lower than the equivalent insurance premiums.

Some transfer pricing consultants recommend to their clients transfer prices relating to insurance services based on a three-tiered responsibility classification of captive insurers, which relies on three criteria, i.e., degree of diversification, decision power and the adequacy of capital to cover the insured risk (Figure A.16, TPA, 2012). The degree of responsibility, i.e., whether a cost or a profit centre, determines whether a cost plus or a CUP based on applicable insurance premiums should be used as the appropriate transfer price. In effect, the third criterion, that is to say the actuarial ability to realistically deal with an event and provide the compensation insured for, is the dominant aspect from a tax administration's point of view as it is the dominant factor in an insurer (related or unrelated) determining whether to accept the risk and the related premium to do so. Valid CUPs, however, may not always be readily obtainable in the African context, where in some cases the risks are uninsurable and the MNEs will need to wear them. This raises the question whether such a controlled transaction would take place at arm's length making non-recognition by the tax administration appropriate.

While the somewhat mechanistic approach depicted in Figure A.16, which is not formally recognized in the OECD Guidelines, may help many taxpayers in determining often acceptable transfer prices in practice, tax administrations should, in their analysis, still be guided by adherence to the arm's length principle.

Figure A.16: Responsibility criteria defining the nature of the captive insurer and appropriate transfer pricing method (Source: TPA, 2012)

Through a Function/Risk/Equity Analysis				
		First Model	**Second Model**	**Third Model**
	Diversification of risk	No	Yes	Yes
Criteria	Captive is making key decisions	No	No	Yes
	Captive possesses adequate capital to absorb insurance and insured risks	No	No	Yes
Outcome of the Test	Responsibility of the captive	N/A	Cost centre	Profit centre
	Typical transfer pricing model	N/A	Cost plus (on captive's operating expense)	"CUP" or premium calculation based on: 1. Risk 2. Loss predictions 3. Compensation for the captive's operating expenses

In addition to commercial considerations, there may also be significant tax consequences in the setup and use of an insurance hub, as well as the degree to which the related premiums may represent legitimate tax deductions. The IMF,[84] for instance, refers to the problematic nature of applying the arm's length principle to captive insurance arrangements where the purported transfer or re-allocation of risk within the group **does not affect** the risk borne by the group as a whole. In such cases it is argued that there has actually been no transfer of risk. The IMF report points out, amongst other things, not only the inherent lack of comparable prices between unrelated parties, but the fact that it would be hard for all other group members to step away from the consequences of the failure of any affiliate.

The tax benefits to a MNE from obtaining tax deductions through the use of an insurance hub would arise for what in effect would be the deduction of a 'provision' for a contingency, keeping in mind that tax deductions for provisions are not normally allowed.

For some risk transfers, the insurance hub may re-insure, sometimes after bundling risks from different members of the group to obtain economies of scale, with a third party insurer. The arm's length principle is somewhat more straightforward to apply under these circumstances, potentially allowing a markup on the cost incurred to reflect what is, in effect, a fee for brokerage services. However, the key used to allocate re-insurance costs that incurred at the corporate level among members of the MNE group needs to be carefully considered to ensure that it is appropriate and commensurate with the economic benefit actually provided to the mining company.

It is most important to ensure that the risk that is purported to be insured with an insurance hub is 'insurable', as there have been rare cases where the 'risk' was an artifice not of an insurable nature. Tax administrations need to look at the terms and conditions of the insurance contract to ensure that the risk to be covered is real and that should it occur, the in-house insurer has adequate resources to cover it.

Unless there are sufficient capital reserves held by the insurer it may well not be in a position where it has the capacity or capability to pay, and hence, the transfer of risk that the insurance contract is meant to provide may not have in fact taken place. In essence, tax administrations need to ascertain the actual facts and circumstances of the arrangement with the insurance hub, making sure that the risk is real and that should it occur, the insurer has the resources to pay out. Suggested questions to assist with the comparability analysis and application of the arm's length test are included in the audit functional analysis questionnaire (see Appendix A.4).

Once the facts and circumstances have been established, it is suggested that the tax administration also seek advice from an independent insurance agent or broker with experience in the relevant mining sector to help analyze the responses obtained. Insurers operate on the basis of highly sophisticated risk models, and it would be expected that arm's length prices to a captive or insurance hub should similarly be based on sophisticated models that operate on both likelihood of an event occurring and the consequences should it occur.

Many of the risks in the mining sector would be predictable over time. One of the issues that may arise in relation to some of the risks in mining in African countries relates to lower compensation standards, especially for accidents. As a result, a lower premium would be expected than for the same risk in a 'high-cost' developed country.

4.2.6 Finance hub

Among the most common and difficult profit shifting and transfer pricing challenges that tax administrations need to consider are the issues that arise from the provision of finance. Mining is

[84]IMF—Spillovers in International Corporate Taxation, 9 May 2014, published 25 June 2014. See paragraph 49.

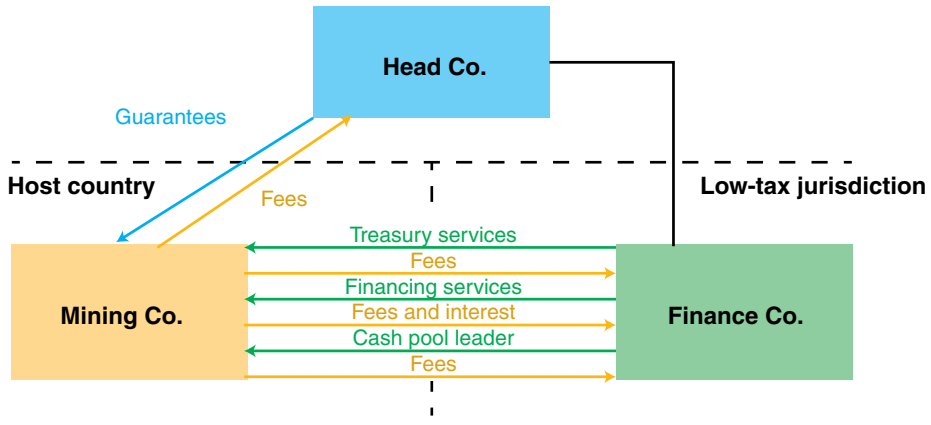
a very capital-intensive activity. Where high-risk activities are being undertaken, such as mineral exploration, the financial capital is obtained primarily by way of equity and the return to investors may be by way of a capital gain should the project be disposed of, or through future dividends if exploration leads to a profitable mining operation.

However, if exploration is successful, significant amounts of up-front capital are required through an appropriate mix of equity and debt for the development of the orebody and construction of the mine during a period of preproduction that can last from a few to a significant number of years while no revenue is generated by the project from which interest expenses could be deducted. This issue has been acknowledged by the OECD, which in its recently released *Action 4: 2015 Final Report: Limiting Base Erosion Involving Interest Deductions and Other Financial Payments*[85] recommends in connection with adoption of the Fixed Ratio Rule that disallowed/unused interest may be carried forward. Mining projects also require significant injections of working capital at the initial stages when mine production hopefully ramps up to planned capacity, a process that, in many instances, is frustrated by teething problems. Significant sums of capital continue to be required during the productive life of the mine to maintain operating capacity and to fund possible expansion and/or other changes in the design of the mine. This is often referred to as "sustaining capital."

While capital may be easily raised by both issuing new equity and/or borrowing at the level of a credit-worthy parent MNE, debt funds at the project level may not be easily obtainable from third parties in some developing countries, or may entail much higher rates of interest on account of higher risk premia. Thus, it is no surprise that many MNEs optimize their overall cost of funding for all MNE activities in a globally tax-effective way by carrying out centralized capital raising and financial services through an in-house financing arm of the MNE group, a so-called **Finance Hub** (Figure A.17). The financial services provided by a finance hub may include:

- **Treasury Services**
  - Financial advice;
  - Capital raising, both equity and debt through:
    —IPOs, share issues and placements, and
    —Loan contracts;
  - Management of interest and exchange rate risk;
  - Refinancing;
  - Debt factoring; and

Figure A.17: Illustration of Finance Hub within the MNE structure



[85]Accessible at: http://www.oecd.org/tax/beps-2015-final-reports.htm

- **Financing Services**
  - Provision of internal loans;
  - Supervision of cash flows and solvency;
  - Cash pooling;
  - Collateral and loan guarantees; and
  - Hedging.

The use of a centralized financing arm by MNEs, however, can give rise to profit shifting and transfer pricing issues that may be difficult for tax administrations to address in the absence of appropriate policy and legislative support, which may include interest capping, thin capitalization and/or other specific transfer pricing rules. These aspects, which have recently been the focus of renewed interest at the OECD,[86] will be discussed in more detail below.

Financial services are an area of relatively high transfer pricing vulnerability because the significant size of financing for a mining business means that even minor mispricing can have a material impact on profitability. In addition, complexity may be added through the determination of what constitutes debt and equity and the complex treatment of hybrid instruments such as redeemable preference shares and convertible notes that can be used to take advantage of tax arbitrage opportunities between the tax systems prevailing in different countries. This vulnerability often arises because, as long as generous tax systems continue to allow interest on debt to be deductible, there will continue to be an incentive for businesses to exploit debt leverage in their capital structure.

The relative complexity of financial services and its associated risks would normally be associated with a higher charge, above the cost incurred for the provision of such services, which makes it relatively easy to manipulate the related spread to shift profits. Remuneration for financial services is often built into the effective interest rate charged (the spread) where the volume aspect is the amount of the financing (e.g., the loan principal) and the price aspect is often a "reference rate." As an interim measure, a tax administration could consider setting (for example by regulation) maximum interest rate benchmarks based on observable international rates such as the London Interbank Offered Rate (LIBOR) plus a margin appropriate to their country (e.g., LIBOR +200 basis points or 2%) or, alternatively, allow, as in the case of the West African Iron Ore Project discussed in Box B.11, interest rates set in a similar manner by lenders. By contrast, some jurisdictions may require that the applicable rate of interest charged to the mining subsidiary in their countries should be the average annual rate of interest incurred by the MNE at the consolidated level.

The determination of an appropriate risk premium to be included in setting the interest rate charged to a mining subsidiary in a developing country is indeed a much contested issue. The World Bank Group[87] provides an up-to-date tabulation of the indicative bank lending interest rates that usually meet the short- and medium-term financing needs of the private sector in various countries. The rate, of course varies with the economic sector and creditworthiness of the borrower, with mining being on the upper side of the underlying range.[88]

The influence of differential interest rates applied to the provision of debt finance between different entities within a single MNE group may become less of an issue in the future if the interest capping provisions recommended by the OECD in their already quoted Action 4: 2015 Final Report become

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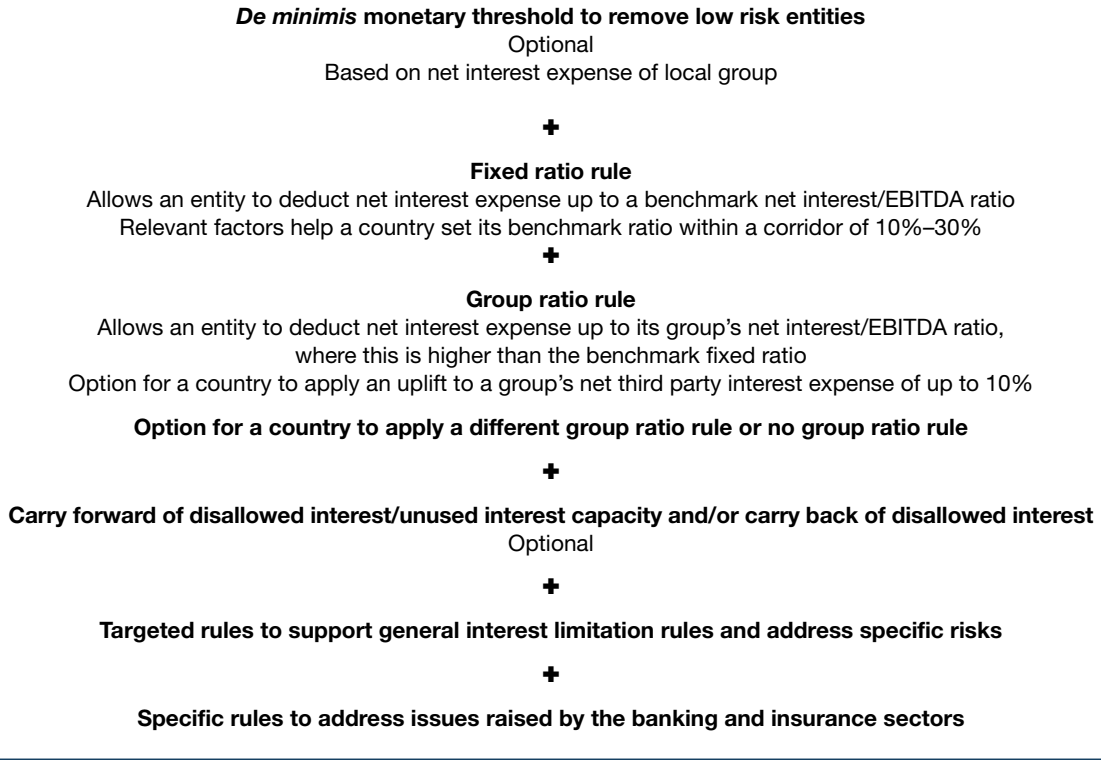
[86]Public Discussion Draft, BEPS Action 4: Interest Deductions and other Financial Payments, 18 December 2014–6 February 2015, OECD Publishing, Paris.

[87]http://data.worldbank.org/indicator/FR.INR.LEND/countries

[88]It is interesting to note that no figures are available for many of the African countries, which is probably an indication that the relevant financial services are not adequately developed in some of them. This is supported by the per capita level of access to a commercial bank branch which in Sub-Saharan Africa is 3 per 100,000 people as compared to 38 for Europe. Of the African countries for which rates are quoted some appear very high by developed world standards (e.g., 20 to 60%); this may be the result of both prevailing high rates of inflation, country risk premia and very high spreads of around 11% between deposit and lending rates.

Figure A.18: Overview of the OECD BEPS Action 4 fixed ratio recommendation



widely applied. These include an optional *de minimis* monetary threshold to filter out low risk entities and a ceiling based on a **fixed ratio rule,** allowing deduction of an entity's net interest expenses up to a benchmark percentage of its earnings before interest, tax, depreciation and amortization (EBITDA). This ratio should be set within a corridor of 10% to 30% depending on individual cases. Provision is also made for adoption of an optional **group ratio rule** when this is higher than the entity's fixed ratio, and of applying to it an uplift of up to 10%, should this become necessary to avoid potential double taxation. The ratio may also be exceeded when borrowing relates specifically to the generation of public benefits.

As shown in Figure A.18 reproduced from the OECD's Action 4: 2015 Final Report the fixed ratio rule recommendation need not be inconsistent with application of the arm's length principle and does not prevent the concomitant use of other best practice options embodied in individual countries' tax legislation, such as those relating to thin capitalization and specific applicable interest rate capping.

Consistent with the arm's length test, tax administrations should look more broadly at the mining company's individual circumstances and whether the type and/or level of financing it adopted would have been entered into between independent parties dealing at arm's length. This may involve consideration as to whether:

- The proportion of debt relative to equity in the funding mix is excessive in light of standard industry practice and the unique circumstances of the borrowing entity, generally referred to as "thin capitalization," and
- The applicable rate of interest is appropriate under the circumstances.

For example, if an entity is carrying a higher level of debt than it would have been capable of raising under arm's length circumstances, the tax administration may be presented with claims for

higher interest rates that incorporate a premium to compensate for the additional financial risk (e.g., credit risk).[89] Cases have also been observed where a mining subsidiary was funded on a non-arm's length basis with relatively high debt levels and claimed, in addition to a higher interest rate, an additional fee for the subsequent provision of a guarantee to cover the loan due to its increased riskiness. An example (see Box B.11) is the guarantee provided by the Bermuda based head office company HoldCo to secure the $120.3 million equipment finance facility provided by the related ChinaCo 1 and the $37.6 million cost overrun finance facility provided by the finance hub of HoldCo, to their operating subsidiaries, that is to say to MinCo and Rail/PortCo. Essentially, under these circumstances, the MNE created the 'risk' via its excessive debt financing and then sought additional reward for it, where an independent party would not have agreed to fund the mine on that basis in the first place as doing so would have rendered it excessively risky and potentially unprofitable. As discussed at greater length below, identifying an arm's length price for the loan would, in this situation, first entail re-characterizing part of the loan as equity.

The power and practice of tax administrations to ignore or reconstruct arrangements that would not have been entered into between unrelated parties given the circumstances is one of the most contentious issues between tax administrations and businesses in discussion about transfer pricing. The OECD transfer pricing guidelines recognize two particular circumstances where it would be appropriate and legitimate, in exceptional situations, to disregard the structure adopted by a taxpayer in entering into a controlled transaction. These circumstances are where the:

- Economic substance of a transaction differs from its form and, as a consequence, the transaction may be disregarded and re-characterised in accordance with its substance. An example of this is where related party interest-bearing debt financing would not have been structured in the way it was, having regard to the economic circumstances of the borrowing company, as for instance its credit worthiness, resulting in the loan being treated for tax purposes as subscription of equity capital; and
- Arrangements viewed in their totality differ from those that would have been adopted by independent parties acting in a commercially rational manner, that is to say where there is no clearly identifiable business purpose and the MNE's motivation is purely for tax saving. Such a set of circumstances in effect impedes the tax administration from deriving an appropriate transfer price.

Many arrangements, where the company would not have obtained its financial capital in the same way if it were dealing with a third party at arm's length, may lead to the shifting of profits from a mining company in the resource-rich country to a related in-house financier resident in another country. Arguably, a mining company acting at arm's length would be unlikely to enter into a funding arrangement with a third party that could be expected to make it unprofitable due to excessively high debt service costs, particularly if the relevant rate incorporates a high risk premium.

Particular care is therefore needed by tax administrations in verifying that an independent party would have agreed to the terms and conditions. For example, it would be highly unusual for an independent party to agree to long-term interest rates higher than those which it could otherwise obtain in the market, or those fixed at relatively high rates. Moreover, the debt to equity ratio of an independent party would often be significantly lower than that seen for many MNE mining subsidiaries, particularly in the operating phase.

Risk hedging via derivatives (e.g., interest rate hedging, exchange rate hedging, etc.) has also become a norm over the last decade and this can further complicate a tax administration's analysis of the actual conditions as the counterparties may not be known, and this type of transaction may trigger events that may be within the control of the MNE. As with the discussion on insurance,

[89]These levels of debt will in many cases be accompanied by payments for guarantee fees by the company to a related party to protect the loan and interest in this alleged higher risk scenario.

where the risk has not in fact been transferred out of the MNE, it is problematic as to whether a charge for its transfer should stand and be deductible. As with other types of services provided by a MNE through a low tax jurisdiction, there is a need to closely examine and verify that the arrangements are arm's length, that is to say that the terms and conditions are such that an independent party would have entered into the arrangement.

Particular attention should be paid to alleged contractual risk stripping to ensure that the risks were 'real' in the first place. As with captive insurance arrangements, the risk needs sufficient nexus to the mining activities to be a real rather than a theoretical risk. The host country tax administration should also verify that the services allegedly provided are for a real activity that is not duplicated.

Some financial service hubs and/or other related entities can also provide funding linked to the supply of significant items of plant and equipment (e.g., trucks, drilling machines, crushing plant, rail roads, rolling stock, etc.). This may be either by way of direct loans tied to the supplies or as part of a financial lease, both of which can be subject to mispricing. An example of this type of arrangement is the $120.3 million equipment finance facility provided by the ChinaCo 1 to MinCo, as will be discussed in Box B.11.

Given the current significant thrust of emerging countries into mineral resources projects in Africa, it is not uncommon for the same government-owned corporation to be both a shareholder and a lender to a project, as well as the supplier and funder/lessor of plant and equipment that it might have manufactured, while also being the buyer and/or marketer of the mineral products. In many instances, leasing may continue to be charged by the finance hub at high rates even when assets continue to be in use well beyond the point when their value may have been fully written off through depreciation.

Instances have also been observed where the MNE has sought to effectively split assets that are actually part of a tightly integrated whole, by assigning part of their value and transferring its ownership to a related party. Courts have found that some of these assets, as for instance open pit mine site improvements, exploration and production mining rights, etc., cannot be split.

MNEs may often seek advice from specialist tax firms as to how to structure their financial needs to optimize their business model, including their tax outcomes. Advice provided on these matters may appear to offer justification for the MNE in the event that it is subject to a transfer pricing audit. However, these justifications usually focus on the price of interest paid for debt financing, rather than whether the arrangement would have been entered into at all by a party acting at arm's length.

4.2.6.1 Thin capitalization as a mechanism for shifting profits

The choice between equity and debt in setting the financing mix for a mining project is not a mechanical one. First, equity is easily available when markets are buoyant, but not necessarily when funds are actually needed and may rapidly dry up. The return on equity is highly volatile because of fluctuating commodity prices and exchange rates, as well as escalating costs, and expectations are only realized on average over the long run. The process of raising new equity through the stock market is complex and expensive. In addition, the project proponents may not be happy to excessively dilute their ownership in the project by excessive reliance on equity, which would encourage borrowing instead.

By contrast, debt financing is cheaper, does not dilute ownership in the project, funds are available when actually needed and the relevant interest is by and large tax deductible. However, as the amount of debt used increases relative to equity beyond the average level for the mining industry sector, it generates additional financial risk for both the equity investors, who bear the ultimate risk of the project, and the lenders who, although generally secured, are concerned about the illiquidity of mining assets in case of liquidation. This anxiety among shareholders and lenders creates

legitimate expectations for higher return on equity and marginal borrowing rates to compensate for the additional risk and militates against increasing and excessive levels of borrowing relative to industry standards. This view was re-enforced by the Reserve Bank of Australia (RBA), which in a recent edition of *Mining News*[90] stated that "In aggregate, the gearing and debt-servicing ratios for resource producers remain noticeably lower than those of the broader listed corporate sector." In addition, the RBA pointed out that most of the debt is owed by large companies that have neither high gearing nor high debt-servicing ratios; these companies are generally expected to be relatively well placed to ride out a period of low commodity prices because they have reasonably strong balance sheets, low costs of production, high margins and access to other sources of funding. "Nonetheless, several smaller resource producers (including within the coal and iron ore industries) are likely to struggle to cover costs at current prices," the RBA warned.

Logic also dictates that, given the generally higher degree of risk in developing countries, the debt to equity ratios of mining companies in those locations should be lower than average. However, because debt is frequently provided by related finance hubs that use cross-border lending to related entities as a tax-effective means of optimizing the cost of capital at the consolidated MNE level, this is not often the case, and as a consequence, mining projects in developing countries are often "thinly capitalized" and exposed to considerable financial risk. Returning to the example of Box B.11, it is worth noting that, while the high level of internal debt made it possible for the project to be developed in the first instance, the combination of high interest charges and the recent fall in iron ore prices precipitated the mine being put into receivership and subsequently taken over by ChinaCo 2, which has recently re-started production in its own right.

As Table A.5 (CSIMarkets, 2015) indicates, metal mining with a debt:equity ratio of 0.84, that is to say with an average debt on total assets of around 45.7%, is a comparatively low user of debt

Table A.5: Average debt:equity ratios for various sectors of the economy (Modified from CSIMarkets, 2015)

Economic Sector	Total Debt to Equity Ratio
Financials	2.67
Consumer non-cyclical	1.63
Utilities	1.44
Services	1.22
Conglomerates	0.99
Consumer cyclical	0.94
Capital goods	0.91
Basic materials—metal mining	**0.84**
Health care	0.60
Retail	0.52
Energy	0.34
Transportation	0.35
Technology	0.24

[90] *Mining News*, Reserve Bank of Australia, 26 March 2015.

finance relative to other sectors of the economy. This is because of the largely illiquid nature of its mainly physical and location bound assets, as for instance contrasted with the very liquid assets of the financial sector that is reflected in it having the highest debt:equity ratio at 2.67. Similarly, the high level of risky R&D undertaken by the health care, energy and technology sectors is the reason for them having very low debt:equity ratios.

The majority of countries have been dealing with the issue of thin capitalisation by determining an appropriate level of debt and/or of allowable interest deductions through a range of approaches including:

- Capitalisation rules setting a limit on the ratio of debt to equity;
- Interest capping rules that limit the amount of interest that can be deducted by an entity for tax purposes in any one year as a proportion of their gross income or EBIT; and/or
- Group-wide rules that allocate interest expense as a function of the subsidiaries individual contributions to the MNE's consolidated revenue or earnings.[91]

There is a relationship between thin capitalization rules and transfer pricing principles. Thin capitalization rules generally avoid the need for the application of the arm's length principles on a case-by-case basis and act as a safe harbor for debt levels when the given ratio of debt to equity is not exceeded. This notwithstanding, some countries, as for instance South Africa, apply the arm's length test, and even in Australia, which has a thin capitalization safe harbor ratio, the arm's length test is applied if the safe harbor ratio is exceeded. The UK is unusual among developed countries as it uses the arm's length test, but does also provide for advance rulings on debt levels. Many countries deal with the thin capitalization issue by means of maximum debt:equity ratios. In Africa these ratios are generally 2:1 or 3:1, that is to say 66.67% or 75% of total funds respectively, both of which are significantly higher than the overall debt:equity ratio of the MNE and industry standards for mining. This means that the MNE has essentially created internal debt and allocated it to funding of the mining project in the host country. These ratios have historically been set at these relatively concessionary levels to both encourage investment and for administrative simplicity. Thus, under thin capitalization rules a higher level of funding may be treated as debt for tax purposes, compared to the level of debt that would customarily be seen in some sectors of the economy, and particularly in mining, beyond which the market would adversely impact on the share price of high-borrowing enterprises seen as presenting above average financial risk.

Transfer pricing issues may still arise even where the level of debt falls within the ratios provided by thin capitalization rules. Table A.6 shows how an independent mining company borrowing from an unrelated bank may be limited by market constraints to fund only 40% of its capital requirements of $100 million by means of a loan at a rate of interest of say 5% per annum. Assuming annual revenue of $15 million and costs of $5 million, the mining company would pay $2 million in corporate income tax in a jurisdiction with a tax rate of 25%, irrespective of whether the jurisdiction allowed for 3:1 capitalization.

By contrast, Figure A.19 shows how the amount of tax payable is reduced to $1.31 million by the mining company borrowing 40% of the funds from an unrelated bank, but secured by the MNE's head office involving a $1 million guarantee fee, and 35% of the funds from a related finance hub.

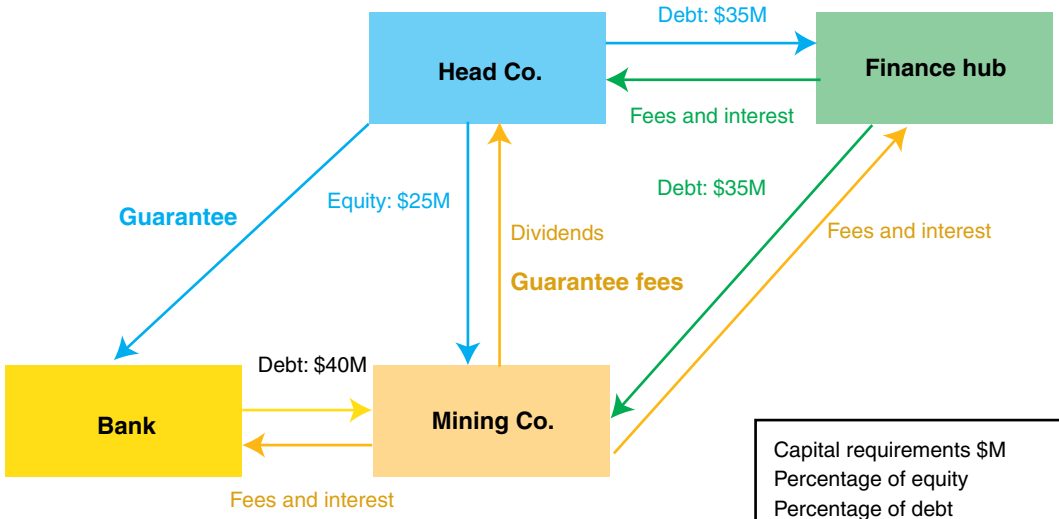
Figure A.20 portrays the situation where the related finance hub borrows 40% of the funds from an unrelated bank and 35% from the MNE's head office and on-lends 75% of the funds to the mining company, reducing the tax payable to $1.56 million. It will be noted that under this financing structure the MNE's retained earnings are higher than in the case portrayed in Figure A.19 (i.e., $4.69M versus $3.94M) even though the total tax paid at the consolidated level is higher (i.e., $1.56M versus $1.31M). In both cases profit has been shifted from the host country through interest deductions

[91]See Annex 3 examples in Public Discussion draft BEPS Action 4: Interest deductions and other financial payments.

Table A.6: Calculation of tax payable by an independent mining company borrowing at arm's length from an unrelated bank

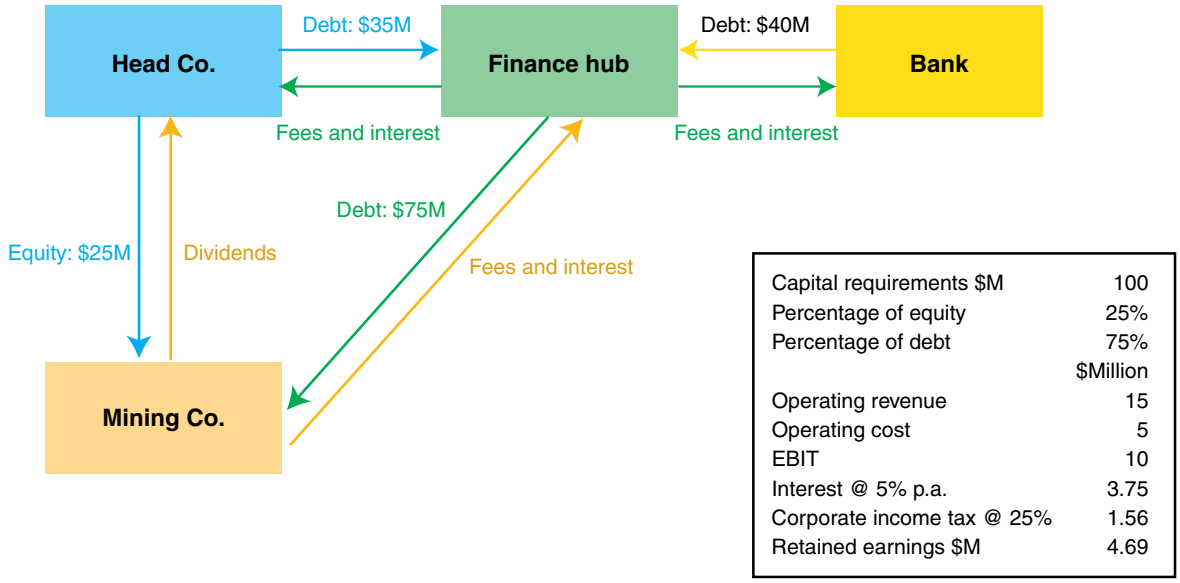
Independent Mining Company	
Capital requirements $M	100
Percentage of equity	60%
Percentage of debt	40%
	$ Million
Operating revenue	15
Operating cost	5
EBIT	10
Interest @ 5% p.a.	2
Corporate income tax @ 25%	2
Retained earnings $M	6

Figure A.19: Calculation of tax payable by a company that borrows 75% of the required funds partly (40%) from an unrelated bank but subject to a guarantee by the MNE's head office and part (35%) from the MNE's finance hub



Capital requirements $M	100
Percentage of equity	25%
Percentage of debt	75%
	$Million
Operating revenue	15
Operating cost	5
Guarantee fee	1
EBIT	9
Interest @ 5% p.a.	3.75
Corporate income tax @ 25%	1.31
Retained earnings $M	3.94

Figure A.20: Calculation of tax payable by a company borrowing 75% of its needed capital from a related MNE's finance hub



Capital requirements $M	100
Percentage of equity	25%
Percentage of debt	75%
	$Million
Operating revenue	15
Operating cost	5
EBIT	10
Interest @ 5% p.a.	3.75
Corporate income tax @ 25%	1.56
Retained earnings $M	4.69

on the additional 35% of total funds borrowed from the finance hub, which would not have been available from unrelated lenders.

Although an interest rate of 5% has been assumed in all three of the above examples, arguments may be presented in support of the hub demanding a higher rate of interest on the $75 million on-lent to the mining company on account of additional risk.

An example of the interplay between thin capitalization rules and the re-characterization of a borrowing transaction under the transfer pricing rules is illustrated in Box A.8 by the position in Australia where (see Example 1 in ATO Taxation Ruling TR2014/6)[92] the interest rate is worked out on the basis that arm's length conditions operated and that an arm's length rate is then applied to the debt principal actually issued by the entity (and permitted under thin capitalization provisions), instead of the debt interest that would have been issued had the arm's length conditions operated in the context of determining an appropriate level of debt principal.

Many tax administrations in developing countries contend that, irrespective of how appropriately the risk-adjusted interest rates may have been determined using a theoretical basis for various jurisdictions in which an MNE is conducting its business, the cumulative interest expense deductions for all of a MNE's subsidiaries should not aggregate to a figure higher than the total net borrowing cost incurred by the MNE at the consolidated level. If this position is to be enforced, there is a need to legislate to either:

- Only allow interest expense deductions based on the same interest rate as that paid by the holding MNE on external corporate borrowing at the consolidated level; or
- Cap the interest deductions in the jurisdiction to a set percentage (say 30%) of the subsidiary's EBIT; or

[92]Taxation Ruling 2014/6 Income tax: transfer pricing—the application of section 815–130 of the *Income Tax Assessment Act 1997.*

Box A.8: Transfer pricing adjustment and thin capitalization (based on Example 1, paras 69–76, ATO Taxation Ruling 2014/6)

- Africa Co. is a resident of an African country and a subsidiary of For Co., the parent company which is resident in another country.
- The African country has thin capitalization provisions with a debt to equity ratio of 3:1.
- Africa Co. borrows $300M from For Co. at 15% interest per annum.
- For thin capitalization purposes, Africa Co. has a safe harbor debt amount of $300M (and equity of $100M).
- This means Africa Co. has claimed $45M in debt deductions for the year.
- Borrowings from independent parties at 10% per annum is possible in the African country which may be used as a comparable.
- In addition, analysis of market reference rates for borrowing of that size and of the credit standing that the capital markets would give Africa Co. may indicate that a maximum $250M loan (not $300M) could realistically be provided by independent lenders under the circumstances.
- The analysis might show that the loan from For Co. might not reasonably be expected to occur between independent parties dealing at arm's length because it would not make commercial sense for Africa Co. (and For Co.), for example, because of the impacts on Africa Co. from the relatively high cost of the loan on the profitability, viability or competitiveness of its business. Clearly, there is no rationale whereby Africa Co. would have entered into similar arrangements if it were dealing with an unrelated party.
- As pointed out above, available information supports a conclusion that the closest arm's length scenario at which a loan might reasonably be expected to exist between independent parties dealing at arm's length, is a loan of $250M at 10% providing a further $50M of equity were to be raised.
- On this basis, if there was no 'safe harbor debt amount' under thin capitalization provisions, an interest deduction of $25M (i.e., 10% interest on an amount of debt of $250M) would be allowed applying the arm's length principles. If on the other hand there were a 3:1 safe harbor debt amount, then in combination with the arm's length principle an interest deduction of $30M could have been claimed, as the thin capitalization provisions would operate to protect the arm's length interest on the $50M of debt that in their absence would have been reclassified as equity.

- In line with the BEPS Action IV 2015 recommendations, as already discussed, capping the allowable interest expense deductions of a subsidiary to a predetermined 10% to 30% of its fixed net interest/EBITDA ratio or to the corresponding consolidated MNE's group ratio if higher.

The first two approaches are already in current use by some African administrations. The third has been proposed by the OECD in the previously quoted discussion paper relating to BEPS Action IV, which is currently the subject of significant concern on the side of the tax accounting fraternity, because such an approach would depart from strict application of the arm's length principle and may create the risk of double taxation.

Another example of particular interest is the case where a subsidiary borrows money from and pays interest to a cash-rich related party (Annex 3, Example 7, para 254) that has not borrowed from or incurred any interest expenses relating to an external source. A strict adherence to the principle that the cumulative interest deductions from all subsidiaries should not exceed the consolidated interest expenses of the holding MNE would lead to the above interest expenses being disallowed as a deduction. Some argue that this would appear unfair, as the lending entity would

incur an opportunity cost for which it would not be compensated. On the other hand, it may be argued that the 'loan' does not increase indebtedness at the consolidated level and is in fact a form of equity contribution rendering the 'interest' paid a form of dividend, and therefore, not deductible for the purpose of assessing taxable income.

As already mentioned, the international consensus achieved among the OECD signatories on how to best resolve these type of issues is embodied in the OECD's *Action 4: 2015 Final Report*. It is expected that with time the proposed best practice will be also be progressively adopted by non-OECD, developing African countries.

Chapter 4 Key Take-Away Points

- In the context of mining tax, authorities should focus primarily on revenue risks residing in the provision of marketing, corporate support, engineering/science/ technical, insurance and financial services.
- Tax authorities must make sure that the goods and services being claimed to be provided by related entities have actually been provided, and that no over-servicing has taken place.
- It must also ensure that adequate physical controls are in place in terms of volumes and quality of exports. This may imply close cooperation with the agencies responsible for customs and mines.
- Should be able to clearly differentiate between routine and unique services, and in the latter, make sure that the appropriate transfer pricing methods have been used by the MNE, which do not over-value the possible use of intangibles (e.g., percentage markups versus cost plus).
- Identify the intangibles and be weary of "soft IP" and/or of IP that has been created through R&D charges, which had previously been allocated to the mining subsidiaries.
- An effort should be made to have LSAs (particularly the value of the ready access to mineral resources) taken into consideration when negotiating the split of nonroutine inputs into a related party transaction.
- Become aware that concessionary thin capitalization rules may represent an incentive for MNEs to fund their mining operations to the maximum allowable level of debt, which may be in excess of that which is customarily used within the mining sector. This, in combination with the application of risk premiums and guarantee fees set at above arm's length levels, may result in financing-related deductions by the mining company that grossly exceed the cost of capital incurred at the MNE consolidated level for similar levels of borrowing.
- In general terms tax authorities must make sure that, consistent with the arm's length principle, related party transactions have been entered into under the same terms and conditions that would have applied to an unrelated party in the absence of the MNE's influence and/or compulsion. In exceptional circumstances where this can be proven not to be the case, authorities could endeavour to recharacterize the transaction, ideally through non-adversarial means.
- Notwithstanding the challenge and frustration in obtaining relevant auditing information from some mining companies tax authorities should try to avoid, as far as possible, embarking into acrimonious audits and disputes which typically do not lead to a level of restoration of revenues that justifies the time and resources invested.

5

Location and Structuring of International Businesses and Cross-Border Trade

5.1 Attracting Investment in Mineral Exploration and Mining through Specific Fiscal Incentives

Most fiscal regimes, in an endeavor to attract globally mobile capital to mineral exploration and mine development in their countries, recognize, by way of industry-specific provisions and incentives, the unique characteristics of the mining industry. Provisions particularly favorable to the mining industry are often embedded in the CIT system or into mining contracts, often at times of low commodity prices, when the bargaining power of government is also low. For this reason, or because some governments did not fully appreciate, at the time of negotiation, the potential long-term revenue and administrative consequences of providing various types of incentives, the contribution made by mining to the socioeconomic development of some countries does not always live up to expectations. Fiscal incentives commonly include:

- **Waving and/or reduction/deferral of mineral royalties** over a specified period of time;
- **Tax holidays**, which specify a period during which a company will not pay any CIT, thus fully capturing all profits in early years of the project, constructed either:
  - On a **time basis** (e.g., covering the first five years of production). If the tax holiday is unconstrained, the amount of tax relief can be increased by the company through an increase in the rate of extraction or by high-grading, effectively reducing the residual mine life and its profitability. This strategy leaves behind lower tonnages of less valuable material to be extracted, reducing potential revenue during the period when taxation applies, or
  - On a **quantity extracted basis** (e.g., covering a specific tonnage of ore or metal as identified in the feasibility study). If the tax holiday is tonnage based, then the taxing authority should satisfy itself that there is no high-grading, but that the grades mined match within reason those submitted in the feasibility study at the time the project received mining approval;
- **Special capital allowances** such as:
  - **Immediate write-off** of capital expenses,
  - **Accelerated depreciation** for mining-specific capital expenses;
- Depletion allowance;
- **Exemption from custom duty and VAT** for mining equipment; and
- Negotiated reductions in withholding tax.

While tax incentives may be considered necessary to stimulate investment in the mining sector and related supporting, often multi-user, infrastructure, the decision to grant them should be made with full knowledge of the trade-offs involved, such as their impact on much needed revenue

collection and opportunities for tax avoidance. In general terms, from the point of view of tax administrations, any form of tax holiday and depletion allowance should be avoided, if at all possible, because ambiguous and hard to administer and, therefore, potentially open to abuse.

In addition, the mining industry often demands, as a prerequisite to investing, that the negotiated fiscal incentives be locked into long-lasting so-called **'stability agreements'.** In some cases, these are ratified by parliament, which in effect turns them into laws. This further restricts government from introducing any future changes to the fiscal conditions, other than by reaching mutual agreement with the mining company.

In the past, some agreements were drafted to cover the life of the mine. More recently, the tendency has been to limit the first term to 10–15 years, with a possible extension subject to renegotiation. This is a good practice because of the inherent incapacity of both government and industry to think realistically into the future, which, in mining, invariably proves highly uncertain. Recent improvements have seen the introduction of **triggers for renegotiation** in the event of certain key parameters, for example commodity prices exceeding preset ranges. The presence of stability agreements also means that, as the fiscal conditions evolve over time, the tax administration must deal with the added complexity of a multiplicity of different coexisting tax systems.

5.2 Criteria for Corporate Structuring and Location of Service Hubs

Mining value chain functions undertaken in the host country may, from time-to-time, be the subject of corporate restructuring for business and/or tax purposes. This may occur after a MNE goes through a global business optimization or other business review process that identifies potential synergies and sources of productivity improvements, as well opportunities to reduce the tax paid globally by the MNE at the consolidated level.

Restructuring may occur to achieve effective critical mass and operational efficiency by consolidating most of a MNE's specialized intangible assets and nonroutine, value-adding capabilities into hubs of one or a few subsidiaries generally located in countries with favorable business conditions where for instance:

- In the case of their specialized engineering, scientific and technical and R&D activities there is good research infrastructure (e.g., universities, research centres, etc.) and a pool from which the required specialized skills may be readily drawn; and
- In the case of marketing locating in an established trading centre, ideally closer to the main customers, shipping/warehousing facilities, etc.

In most cases a location is also chosen where it is easier to attract and retain the specialized technical and marketing skills required to perform these high-value functions. Establishment of these types of hubs involves the physical relocation of key employees and the establishment of adequate, relevant technical and/or administrative facilities. Where this is the case, it is generally clear that there is 'economic substance' in the arrangements, which is to say that the goods and services provided by the hubs actually add value. The issue then is merely to ascertain whether the transfer prices adopted are at arm's length.

In some cases, however, the MNEs' subsidiaries perform the function of a holding or conduit company, often employing very limited or even no resident staff at all. The question of establishing whether these types of entities have actual economic substance and the degree to which they add value may become difficult to resolve. Various criteria to address these issues have been considered by individual tax administrations in isolation when dealing with individual taxpayers, but to date no international general principles and/or criteria have been established.

Although the majority of (but not all) MNEs tend to argue that business considerations prevail in the decision as to where to locate some of these key service hub subsidiaries, it would be naïve to believe that the decision is not also influenced by fiscal considerations, that is to say exploiting tax-minimization opportunities, which can arise in a range of ways, including:

- Tax arbitrage, i.e., exploiting differences in tax rates between jurisdictions, which for instance could be broadly grouped as:
  - More than 35%—USA, Japan, etc.,
  - Between 35% and 25%—Australia, South Africa, France, etc.,
  - Between 25% and 10%—Switzerland, United Kingdom, Ireland, Singapore, Hong Kong, etc.,
  - Less than 10%—United Arab Emirates, Cayman Islands, Bahamas, etc.;
- Governments' willingness to negotiate specific concessions, as for instance in the case of the Netherlands, Singapore and Luxembourg;
- Availability of losses to offset the profits;
- DTA networks spanning the jurisdictions used by the MNE, particularly where these reduce the rates of withholding taxes on:
  - dividends remitted from profits derived from the mining operations to foreign owners of shares in the mining company,
  - interest on foreign-sourced loans,
  - royalties and license fees for the use of intangibles and IP, and
  - payments for specialized technical services provided by resident and nonresident expatriates, etc.;
- Territorial tax systems rather than worldwide tax systems; and/or
- Effective controlled foreign corporation (CFC) provisions in place.

These considerations lead some MNEs to design their corporate structure primarily to minimize taxes at the consolidated level by exploiting some of the above fiscal benefits and potential legislative loopholes resulting in artificial corporate structures. An example of a fiscally effective choice of location for conduit companies is provided by the corporate structure presented in Box A.9.

While the corporate structure of the Australian MNE was relatively simple, some may become very complex and multi-layered. An example is provided in Box A.10 portraying the ownership and corporate structure of a large African iron ore producer, servicing export markets in both Europe and Asia. The corporate structure of this MNE combines the advantages of proximity to customers with the tax benefits of special tax deals in two countries, one European and one Asian, which have no CFC rules, and provides withholding tax exemption for outbound dividends to head offices of companies in countries with which they have signed a DTA.

While strictly speaking legally, such constructs are considered by some as ethically flawed, as in some instances they significantly reduce tax revenue from countries that would really need it, and which are not adequately equipped to monitor and control their fiscal affairs to the advantage of taxpayers with strong legal and accounting capabilities, as well as generally a high capacity to pay.

An extreme example of an artificial tax-effect scheme, albeit not easily adaptable to the mining context, is the so-called double Irish-Dutch sandwich illustrated in Box A.11.

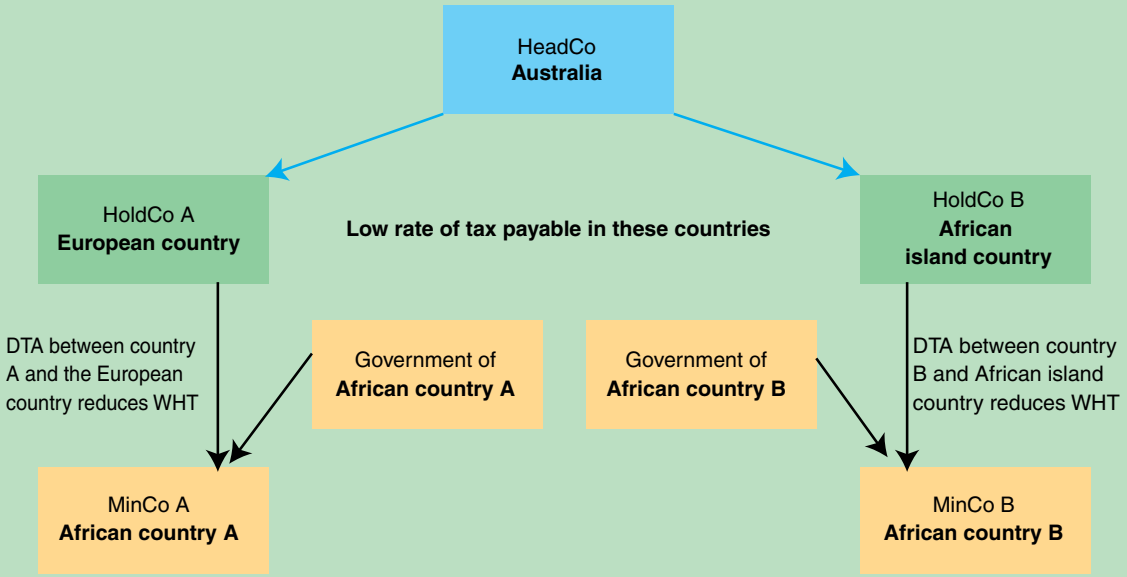
Box A.9: Example of tax-minimizing corporate structure commonly used in mining

As displayed in Figure b mining MNE headquartered in Australia (HeadCo) owns (asides from limited Government equity) and operates mines in two different African countries (MinCo A and MinCo B) through two separate holding conduit companies registered in a European country (HoldCo European country) and in an African island country (HoldCo African island). Financing services to the mining companies are also provided through these jurisdictions. As neither of these holding companies has any permanent staff in their respective countries of residence, a question of form versus economic substance arises, and one may be justified in assuming that holding companies registered in two separate countries are used by the same MNE for the two separate projects because:

- **African country A has a bilateral DTA with the European country and African country B with an African island country, which have the effect of reducing/eliminating withholding tax payable, and**
- **Both the European country and the African island country are low tax jurisdictions, with treaties with Australia.**

The net result is that HeadCo's tax liability is largely reduced at the consolidated corporate level.

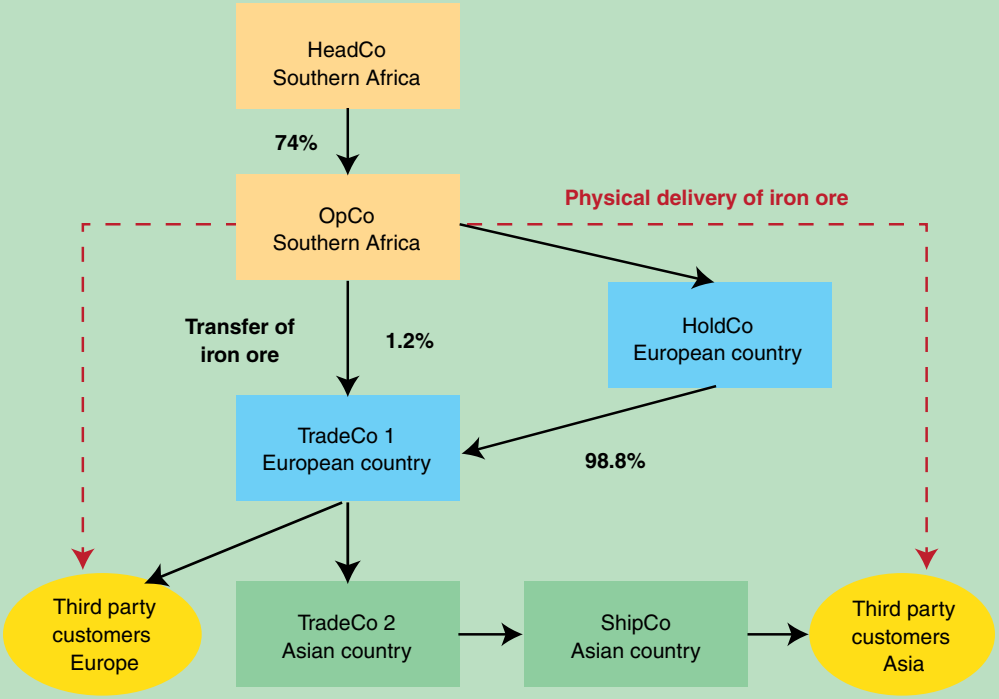
Figure b: Diagrammatic representation of a tax-minimizing corporate structure



Box A.10: Example of a multi-layered tax-efficient corporate structure adopted by a Southern African iron ore producer

HeadCo is a Southern Africa based MNE with significant interests in iron ore mining through majority ownership in MinCo. MinCo is one of the top seven iron ore suppliers in the world and exports 80% of its production. Its iron ore is in strong demand because of its consistently high grade and quality that makes it ideal for blending with lower quality ore at the steel mills. The trading companies (TradeCos 1 and 2), registered as CFCs in a European and Asian country respectively (see Figure c),were initially classified as marketing agencies, but later have been reclassified as fully fledged distributors on account of title to iron ore shipments being formally transferred to them. This means that a greater proportion of profits of profit is realized by them in the low-tax jurisdictions of the European country and Asian country even though a relatively low number of employees is based there.

Figure c: Diagrammatic example of a multi-layered ownership structure of a mining MNE involving conduit and trading companies feeding profits back to their head office in Southern Africa through two separate low tax jurisdictions



Box A.11: Double Irish-Dutch sandwich scheme (Source: IMF 2013)

The objective of a US resident MNE (Head Co.) is to profit from sales in a high-tax country. To do so it sells its product through a marketing subsidiary (Sales Distributor Co.) resident in Ireland and provides customer support and marketing through a subsidiary (Support Co.) in the high-tax country on a cost plus basis.

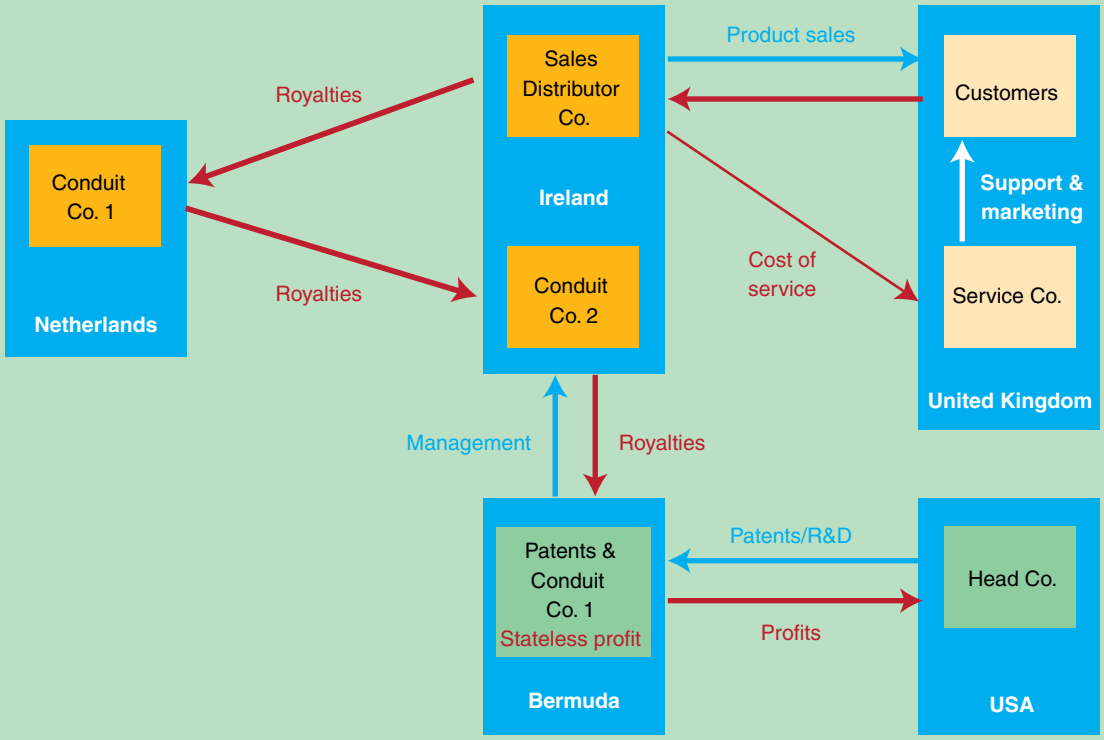
To minimize capital gain tax in the US, Head Co. transfers patents for the product at the early stages of development to a subsidiary (Patents & Conduit Co. 1) registered in the zero-tax jurisdiction of Bermuda.

A second conduit company to be managed by Patents & Conduit Co. 1 is then registered in Ireland (Conduit Co. 2). The US will view the Irish Conduit Co. 2 and the Sales Distributor Co. as a single entity not subject to CFC rules, while Ireland would consider Conduit Co. 2 as a Bermuda resident thus levying no taxes on it.

Money is conveyed from the Sales Distributor Co. to a third Conduit Co. 3 registered in the Netherlands and from this back to Conduit Co. 2 in Ireland without paying any withholding taxes under the non-portfolio payments EC rules and because of the absence of Dutch withholding taxes.

As remittance of profits to the Head Co. would trigger US taxation, Patents & Conduit Co. 1 may delay it, sometimes indefinitely, thus creating significant amounts of 'stateless profits'. This structure is illustrated in Figure d.

Figure d: Schematic structure of the Double Irish-Dutch sandwich scheme (Modified after IMF, 2013)



5.3 Corporate Restructuring Is a Continuous and Dynamic Process

In reality mining is a very competitive business and companies strive to continuously improve their productivity and capture market share by adopting a variety of evolving technical and commercial/trading strategies. These strategies include driving unit cost of production down by:

- Continuous process improvement;
- Increasing economies of scale by expanding operations and by growing through organic exploration, joint ventures and mergers and acquisitions;
- Gaining early access to innovative technology;
- Rationalizing and rebalancing the spread of their investments in terms of commodities sought and geopolitical diversification; and
- Adopting innovative funding arrangements.

To be effective, the majority of these strategies may require frequent and occasionally significant changes in the MNEs' corporate structure, which although not motivated by fiscal considerations, may have concomitant tax repercussions.

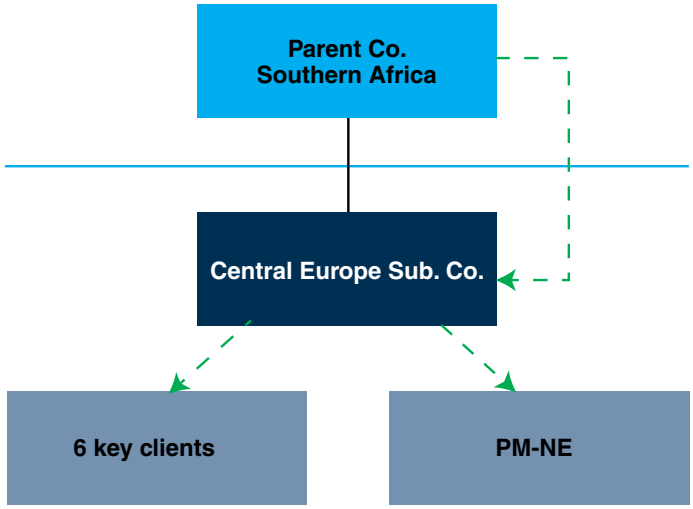
On the other side of the spectrum, as governments become aware of inherent weaknesses in their mining taxation frameworks and of potential loopholes that the industry may legitimately exploit, they progressively introduce amendments to their tax legislation and related regulations to counteract them. In some cases their actions are effective in limiting or reversing tax leakages, but often they provide a rationale for MNEs to embark in further restructuring.

The influence of tax considerations in successive restructuring decisions is exemplified by the case involving a South African mining company that shifted around R20 billions of profits to various entities in generally low-tax off-shore jurisdictions through a series of business restructures, taking advantage of existing treaties, loose application of transfer pricing and other tax mechanisms which the South African Revenue Services (SARS) contend had the primary purpose of moving profits offshore, thus minimizing tax payable in South Africa (SA). Critical to the findings of SARS' audits was that profits were shifted to entities and locations where little or no actual value was created.

A history of relevant events is summarized as follows:

- In the 1970s, the Southern African Parent Company developed on-going relationships directly with six key long-term supply clients and one PM-NE Company based in the Northern Europe.

Figure A.21: Firm restructured to include a Central Europe Sub. Co.



- In 1998 the Parent Company restructured the firm (Figure A.21) to assign these original contracts to a newly-formed Subsidiary Company in a central European country (Central Europe Sub. Co.) under a marketing agreement.
- The Parent Company moved two marketing personnel from Southern Africa to this central European subsidiary. The tax rate applicable to profits made by this subsidiary was 9.6%, as compared to the South African rate of 28%.
- In 2001, the Southern African country changed from a source basis of taxation to a residency basis of taxation, which would have resulted in the Central Europe Sub. Co.'s net income being taxed in South Africa at 28%. To mitigate the negative tax effect resulting from the change to the residency basis, the Parent Co. formed a branch (Central Europe Branch Co.), that is to say a Permanent Establishment (PE) (Figure A.22), to which the Central Europe Sub. Co.'s business was sold for $50 million, with the related capital gain taxed at a rate of 9.6%. However, the double taxation agreement (DTA) between the Southern African country and the central European country allocated to the latter the taxing rights on PEs such as Central Europe Branch Co.
- In 2009 the Southern African country/Central European country DTA was changed so that the Southern African country could tax the profits allocated to the branch. To mitigate the negative tax effect resulting from this change and to avail itself of tax credits, the Parent Co. sold the business of the Central Europe Branch Co. to a newly formed subsidiary resident in a northern European country (Northern Europe Sub. Co.) as illustrated in Figure A.23. Interestingly, at the time of sale, the Central Europe Branch Co. had cash of approximately R3 billion but was sold for only USD5 million.

The Central Europe Sub. Co., Central Europe Branch Co. and the Northern Europe Sub. Co. were portrayed by the Parent Co. as fully-fledged marketers/distributors responsible for servicing 40% of the world's demand of a specific commodity and growing the business for the entire Group. However, for the last 25 years, the seven key clients (including PM-NE) originally procured by Parent Co. remained the only foreign clients with no additional customers established. Both the central European operations and the Northern Europe Sub. Co. had a maximum of five employees, i.e., two management and three administration staff. Over a 10-year period these offshore entities retained in excess of R20 billion in profits as the Parent Co. maintained that they performed such a strategic and vital role and were fully risk-taking. Notwithstanding the claimed strategic, highly functional and risk-bearing nature of the Central Europe Branch Co., its market value when sold to the Northern Europe Sub. Co. was set at only $5 million.

Figure A.22: Central Europe Sub. Co. is converted into Central Europe Branch Co.

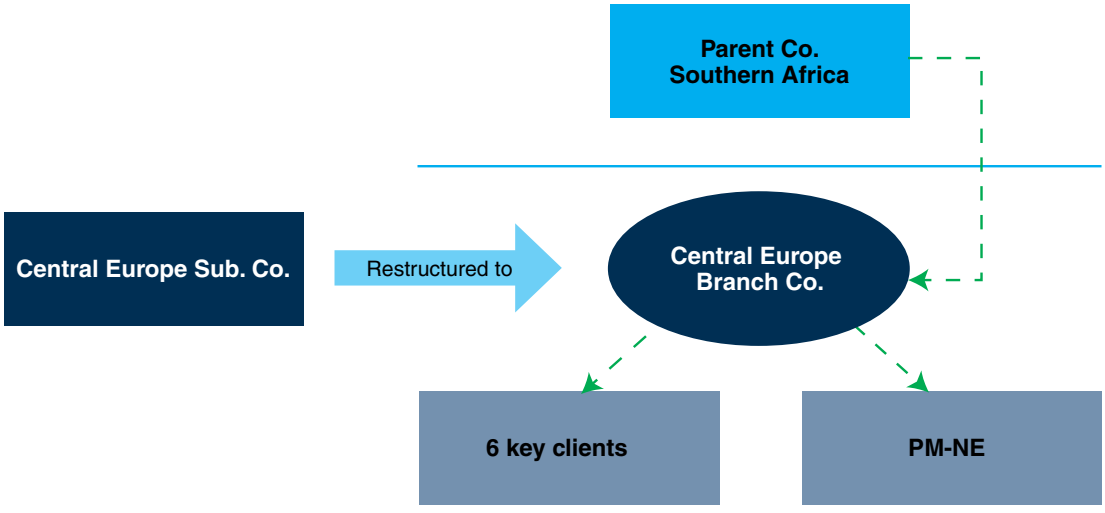
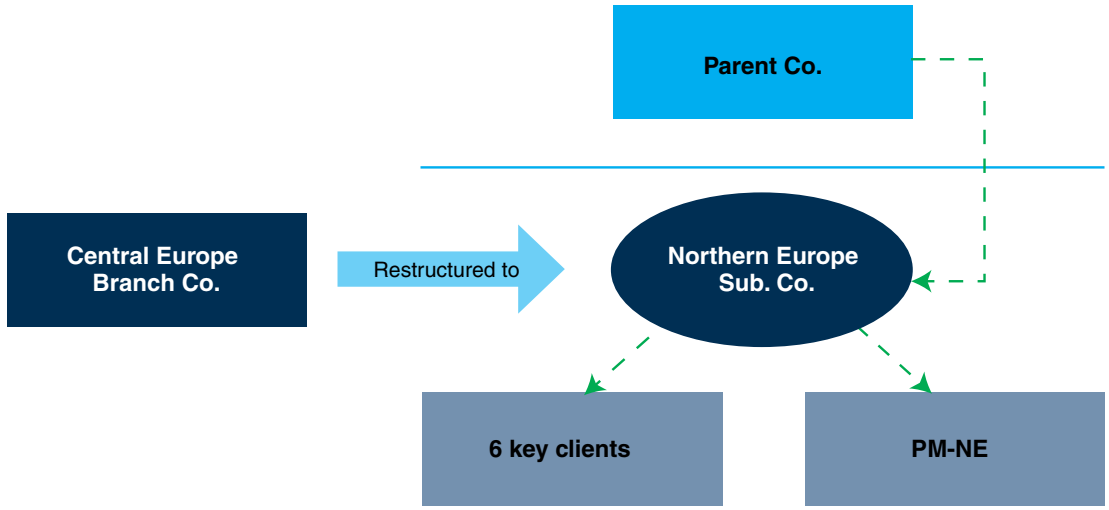


Figure A.23: Sale of Central Europe Branch Co. to Northern Europe Sub. Co.



An audit was first carried out to examine what the activities of the Central Europe Branch actually were, in order to determine if the Parent Co. in a Southern African country had allocated to it an appropriate amount of profits. The Parent Co. maintained that the Central Europe Branch was a fully-fledged marketer/distributor, i.e., it performed value-adding functions by marketing and distributing the mineral commodity while taking entrepreneurial risks on behalf of the Parent Co. In other words, it was maintained that the Central Europe Branch "bought" and "sold" the commodity and thus warranted a high return. The tax audit, however, revealed that the Central Europe Branch was actually a provider of management and marketing support services rather than a full-risk taking marketer/distributor as purported by the Parent Co. and actually warranted a routine return. Fundamental to the Southern African country Tax Administration Office's (SATAO) findings was the fact that the Swiss Branch serviced seven long-term customers that were originally procured by the Parent Co. in the Southern African country, and hence, all subsequent activities performed by the Central Europe Branch were of a management and marketing support nature.

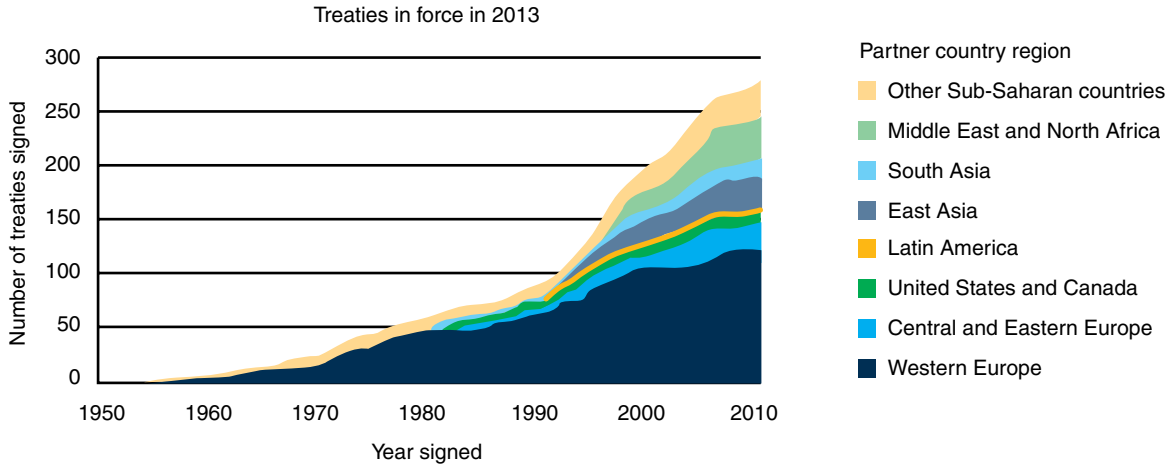
As a result of the above determination, SATAO concluded that profits attributed to the Swiss Branch were not in line with the actual activities of the branch, which meant that the profits of the Swiss Branch had to be reduced, under Article 7 of the South Africa/Central European country Tax Treaty, to a level of compensation more commensurate with the activities performed. On this basis SATAO adjusted the method of allocation and the amount of profits allocated to the Central Europe Branch following the 2001 restructuring.

The fiscal consequences of the 2009 sale of the Central Europe Branch Co. to the Northern Europe Sub. Co. are still being audited.

5.4 Double Taxation Agreements (DTAs) Issues Pertinent to Developing Countries

Traditionally, African countries did not have a large tax treaty network and most treaties concluded were mainly of regional scope. However, an emerging perception that the extent of the tax treaty network offered by various countries can be a factor for potential investors in deciding where to direct their investment has seen the number of treaties with developed countries increasing in recent years as shown in Figure A.24. Although empirical evidence on the investment effects of

Figure A.24: Tax treaties signed by Sub-Saharan countries (Source: Martin Hearson, *Tax Treaties in Sub-Saharan Africa: A critical review.* Tax Justice Network, 2015)



treaties is mixed,[93] most African countries have nevertheless concluded Bilateral Investment Treaties (BITs) with the main aim to provide security of investment to foreign investors.[94]

For developed countries with stable and diverse economies, the give-and-take of taxing rights that result from having a DTA network, will generally balance out overall in the long term. This results in an equitable outcome even though, at any given time, it is rare for there to be a balance in capital flows between two countries.

Entering into a DTA generally involves giving up some taxing rights and reducing the rate of source country withholding taxes and this may adversely affect the level of revenue collected as exemplified for a mineral-rich African country in Table A.7. For these reasons it would be generally undesirable from the point of view of a capital-importing developing nation, which exports mineral products, to enter into DTAs with developed countries unless there are other, clearly identifiable, offsetting strategic or economic benefits.

The issue of how to structure and negotiate more balanced tax treaties between developing and developed countries is far from resolved[95] and progress is still slow. There are currently two main international models for tax treaties that provide the basis for negotiation and commentary for interpretation of tax treaties. These are the:

- OECD Model Tax Convention,[96] and
- UN Model Double Taxation Convention.[97]

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[93]See para 37 and Appendix V, IMF—Spillovers in International Corporate Taxation, 9 May 2014, published 25 June 2014.

[94]Sauvant, K.P. and Sachs, L.E., 2009, *The Effect of Treaties on Foreign Direct Investment*, Oxford.

[95]See A. Pickering, at www.**un**.org/esa/ffd/wp-content/.../20130530_Paper1N_Pickering.pd

[96]Model Tax Convention on Income and on Capital: Condensed Version 2014, OECD Publishing, 5 September 2014.

[97]United Nations, Model Double Taxation Convention between Developed and Developing Countries, United Nations, 2011.

Table A.7: Estimated annual revenue foregone by an African mineral-rich country due to reduced WHT on remitted FDI earnings (Source: Martin Hearson, *Tax Treaties in Sub-Saharan Africa: A critical review.* Tax Justice Network, 2015)

	Estimated Cross-Border Payment (US$M)		Withholding Discount in Treaty (%)		WHT Foregone (US$M)	
	Dividends	Interest	Dividends	Interest	Dividends	Interest
United Kingdom	112	66	10%	5%	11.2	3.3
China	51	53	10%	5%	5.1	2.7
Netherlands	42	32	10%	5%	4.2	1.6
Switzerland	23	32	15%	15%	3.5	4.8
Mauritius	12	12	10%	5%	1.2	0.6
Ireland	14	1	15%	15%	2.1	0.1
France	7	2	15%	15%	1.1	0.3

The UN Model[98] retains a greater share of taxing power to developing countries allowing them to levy more direct taxation at source in their jurisdictions as for instance through higher withholding taxes to dividend, services, interest and royalty payments, as well as mining-specific exploration and extraction taxes, various forms of regulatory fees and levies and customs duties.

Opponents claim that such forms of taxation reduce the attractiveness of countries to foreign direct investment (FDI) and may be economically inefficient. To counteract this perception, as already discussed, developing countries often offer tax holidays as an incentive to FDI, sometimes without fully appreciating the long-term revenue consequences of such concessions.

A useful comparison of these two conventions and review of the current state of play as it concerns double taxation treaties in Africa is provided by Daurer and Krever (2012).[99] Probably for historical reasons, two-thirds of treaties negotiated by developing countries to date have followed the OECD rather than the ostensibly more advantageous UN convention.

The **Exchange of Information** article in DTAs (Article 26 in both the OECD Model and the UN Model) is, however, particularly desirable for developing countries**.** This article can be very useful for tax administrators when dealing with transfer pricing issues, tax evasion by residents or considering whether reductions in applicable withholding taxes are to be allowed. An alternative is the multilateral exchange of information OECD convention, which now numbers in excess of 100 signatories including some African Jurisdictions (e.g., Ghana).

While significant improvements are being made with requirements for the flow of interjurisdictional information, transparency about MNEs' derivation of profits and their repatriation to shareholders is still problematic. Consolidated annual reports tend to be rather opaque regarding their inter-group transactions, earnings and the amount of taxes paid in each country. This situation will be greatly improved upon implementation of the BEPS Action 13 revised standards for transfer pricing documentation and county-by-country reporting. However, this information may not become public nor be easily accessed until exchanged under treaty by the country where the MNE

[98]Article 5 UN Model Double Taxation Convention between Developed and Developing Countries 2011.

[99]Veronika Daurer and Richard Krever (2012), *Choosing between the UN and OECD Tax Policy Models: An African Case Study,* European University Institute, Florence, Working Paper RSCAS 2012/60.

parent entity resides. These BEPS revised standards emphasize the importance for African countries to enter into treaty arrangements to facilitate exchanges of information.[100]

Other information is available under the EITI[101] initiative, though rather aggregated in nature and therefore of limited usefulness for transfer pricing analysis.

Rio Tinto has been proactive in publishing, over the last few years, a comprehensive annual report[102] of all the various types of taxes paid by all its subsidiaries to different levels of government in all the countries where they operate. This has enhanced their reputation as a responsible corporate entity and engendered generally cooperative relationships with the relevant tax authorities. However, while useful, this report is not as comprehensive as that required for country-by-country reporting.

The international tax dispute resolution process (**Mutual Agreement Procedure (MAP),** Article 25 of OECD Model and UN Model) which a MNE may wish to have recourse to in situations of taxation not in accordance with a treaty (e.g., double taxation), is another desirable feature of comprehensive bilateral DTAs, which may not be otherwise available.

Both the OECD and the UN now recommend that income from the disposal of shares in land-rich companies, including partnerships, trusts and estates, be taxed by the jurisdiction in which the property is located. To qualify as land-rich, more than 50% of immovable property must be attributable to the company. This aspect of treaties has the potential to significantly impact the disposal of shares in successful exploration companies; however, the splitting or bifurcation of assets and revaluation of other assets in the company may dilute the proportion attributable to immovable property. As for "other income," the OECD convention allocates it to the residence country, while the UN convention suggests mechanisms for splitting it between the host and residence country.

The decision to enter into tax treaties needs to be based on broad policy and economic reasons, not just concerns about profit shifting or transfer pricing. Such a decision needs to balance the expected benefits and costs. The IMF notes[103] that considerable caution is needed for any developing country entering into a tax treaty as they may achieve more through their domestic law (including definition of permanent establishment, etc.) than through reciprocal tax treaty benefits. Useful information is also contained in the series of papers published by the UN that addresses the negotiation of tax treaties for developing countries.[104]

Tax treaty negotiation is a highly specialized skill and experts with these skills are scarce. Significant highly skilled resources also have to be invested in preparation and support for such negotiations that frequently take considerable time to conclude. African countries may benefit from working together to agree on tax treaty attributes and to negotiate as a block if they wish to conclude tax treaties with particular countries.

5.5 Treaty Shopping

Even though there may not be a DTA between the country of residence of an MNE and the country hosting its mining operations, the MNE may reduce its effective tax rate at the consolidated level

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[100]Tax Information Exchange Agreement (TIES) or signatories to the OECD Multilateral Convention on Administrative Assistance in Tax Administration.

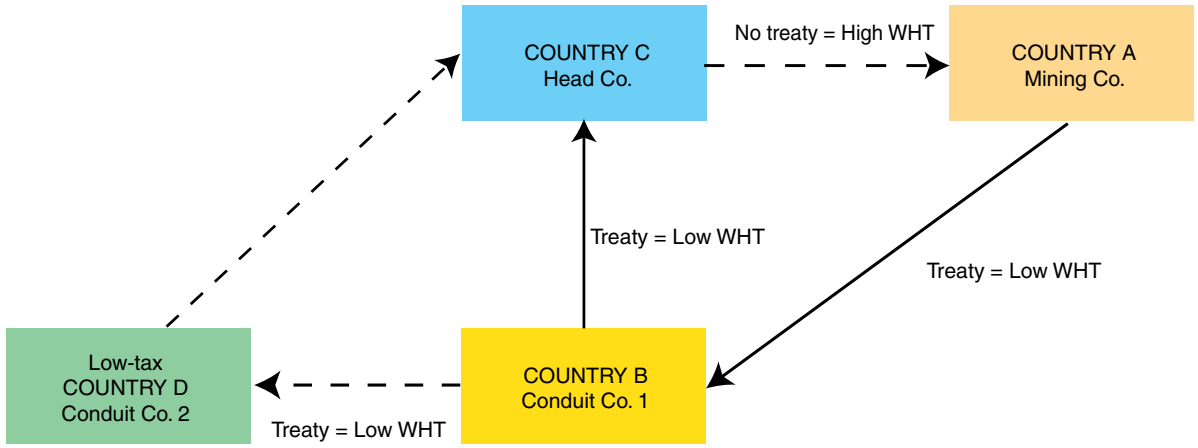
[101]Extractive Industries Transparency Initiative (EITI) is a global standard to promote open and accountable management of natural resources. It seeks to strengthen government and company systems, inform public debate and enhance trust. https://eiti.org/

[102]Rio Tinto (2014), Tax paid in 2013: A report on the economic contribution made by Rio Tinto to public finances.

[103]IMF—Spillovers in International Corporate Taxation, 9 May 2014, published 25 June 2014 (paras 24–40).

[104]Negotiation of Tax Treaties for Developing Countries, United Nations, 2014.

Figure A.25: Schematic treaty shopping (Modified from IMF, 2014)



by 'treaty shopping', that is to say by routing its investment indirectly through an entity in a low-tax conduit country that has a tax treaty with the country a MNE intends to invest in.

Treaty shopping is commonly undertaken to avoid taxes on capital gains and to achieve reduced withholding tax rates for payment of dividends, royalties and interest.

The basic treaty shopping structure is exemplified in Figure A.25 (adapted from IMF, 2014), which shows how a MNE investor (Head Co.) resident in country C wishing to invest in a mining project (Mining Co.) in host country A with which country C does not have a treaty, would, if investing directly in A, be subject to high withholding taxes. For this reason the MNE would invest indirectly through a conduit affiliate (Conduit Co. 1) in country B, which has treaties with both country A and C, both entailing lower withholding taxes. Furthermore, country B may have a treaty with country D, a low-tax jurisdiction. Streaming receipts through a subsidiary (Conduit Co. 2) in country D, can, unless country C applies CFC rules, further reduce Head Co.'s tax liability in country C.

With the ever present risk of treaty shopping, developing countries should be cautious about creating tax treaty networks and may wish to consider the negotiation and inclusion of a suitable anti-abuse provision such as a Limitation of Benefit (LOB) article (see IMF discussion on tax treaties).[105] In the example of Figure A.25, for instance, LOB provisions within the Country A-B treaty may have the effect of redirecting benefits unless it can be proved that the affiliated entity registered in country B is actually adding appreciable value.

The revenue costs of any tax treaty may be significantly greater than expected through third country entities accessing treaty benefits via treaty shopping without providing any reciprocal benefits. Some countries have taken the rare step of unilaterally cancelling some tax treaties because of the way they were being used as a conduit to avoid taxes.[106]

In the absence of an anti-abuse article in the relevant tax treaty it may be difficult for a tax administration to redress treaty shopping. BEPS Final Report for Action 6 provides new treaty anti-abuse

[105]IMF Spillovers in International Corporate Taxation, IMF, 9 May 2014 (pages 24–30).

[106]Mongolia unilaterally ended its tax treaties with the Netherlands, Luxembourg, Kuwait and United Arab Emirates. See Reuters "Special report: In tax case, Mongolia is the mouse that roared," 16 July 2013. Argentina terminated its tax treaty with Switzerland signed in 1997 but which had not been ratified. See International Tax Review, "Argentina terminates tax treaty with Switzerland," 29 February 2012. Brazil has also recently cancelled its DTA with Germany.

rules to be included in DTAs, including a statement of intent, a specific anti-abuse limitation-on-benefits rule and a more general anti-abuse rule. Note however, that BEPs actions do not change existing DTAs.

Chapter 5 Key Take-Away Points

- The effect of transfer mispricing on revenue is compounded where, in an endeavour to attract FDI in mineral exploration and mining, jurisdictions have made use of significant fiscal incentives, particularly undesirable tax holidays and excessively restrictive stabilisation agreements, without a full awareness of their long-term consequences.
- To remain competitive, capture market share and grow, MNEs continuously rationalize and optimize their business on a global scale, which may result in often significant restructuring for technical and commercial reasons, which may include tax considerations such as opportunities for tax rate arbitrage and to benefit from existing tax treaties networks.
- The process of restructuring is dynamically driven by changing market forces, emerging innovative technology and the incentives/disincentives created by progressive evolution of the tax frameworks of various countries designed to reduce opportunities for tax leakages. The resulting corporate structures are in the majority of cases, strictly speaking, legal, the main question is whether the resulting attribution of profits to MNEs' subsidiaries and branches in various countries is commensurate to the value added by them.
- Audits must focus on clearly understanding the value added by and the risks actually undertaken by the various subsidiaries in carrying out their activities; in effect determining whether they have 'economic substance' rather than 'form'.
- Legislative means of preventing restructuring have in some instances proven ineffective and counterproductive. Strategies based on the existence of a business case, investment incentives and other means of facilitating business within the country need to be devised to attract and retain FDI.
- Developing countries should consider carefully the potential benefits and costs of entering into DTAs with developed countries and the potential to create opportunities for 'treaty shopping'.

Part B

The Mining Industry in Africa and Transfer Pricing

This chapter will focus on the specific economic importance and nature of the mining industry in Africa and its stage of legislative development in the area of transfer pricing. It will identify and list in Appendices the main mining projects for different commodities in various countries and consider their revenue and expenditure characteristics as an initial reference for transfer pricing risk analysis. Discussion will be supported by the provision of a number of relevant case studies.

6

Characteristics of the African Mining Industry

6.1 Economic Importance of Mining in Africa

The contribution made by mining to the economy of many African countries has grown in recent years ahead of that of other sectors, increasing the importance of this industry as a mechanism for economic development and growth. This trend is expected to continue over the long term notwithstanding recent significant falls in mineral commodity prices following an unprecedented period of twelve years of continuous growth. In addition, many African economies are not well diversified and are in many instances, at least for the foreseeable future, significantly dependent on mining. The degree of various countries' dependency on mining is measured by the Extractives Dependence Index (EDI) developed by the UNDP (Hailu, D. and Kipgen, C., 2015).[107] The composite EDI is based on three indicators: a) the share of total export earnings from extractives; b) revenue from extractives as a share of total fiscal revenue; and c) the value added by extractives as a percentage of the total. Table B.1, modified from the above publication, displays the degree of dependency of various African countries on the extractive industries.

It must be noted that not all resource-rich countries are necessarily resource dependent. On this basis a vast range of other indicators of dependency have been developed, which include oil, gas and mineral revenues or exports of at least 20% of total fiscal revenue and exports (IMF); 5-year average resource revenues that are more than 20% of government revenue; and resource rents that are greater than 10% of GDP (McKinsey Global Institute). Davies (1995)[108] classifies a country as a "mineral economy" if the contribution from its extractive industry to total GDP exceeds 8%.

At last count (RIU, 2014) there were 591 mineral exploration and mining companies in Africa operating a total of 1,572 mineral deposits. In the majority of cases mineral exploration and mining companies are largely owned by multinational enterprises (MNEs) with minor government equity interests (typically 10% or less), and their output is largely exported. Of these deposits, 301 were producing mines, 333 were development projects at the conceptual to feasibility stage and 938 were exploration prospects. The majority of the above deposits (289, 327 and 917 respectively) were located in Sub-Saharan Africa. South Africa accounted for 315 deposits of which 135 were operating mines.

The above deposits do not include artisanal mining and low-value bulk minerals for domestic use, such as sand, limestone, gypsum, aggregate, etc. They relate primarily to valuable commodities including gold, platinum group elements (PGEs), base metals (copper, lead and zinc), steel alloy metals (nickel, cobalt, chromium, vanadium and manganese), uranium and bulk commodities such as iron ore, bauxite, phosphate rock and coal. Many of the existing mines, as well as

[107]Hailu, D. and Kipgen, C., 2015, *The Extractives Dependency Index (EDI)*, United Nations Development Programme (UNDP).

[108]Davis, G.A., 1995. Learning to love the Dutch disease: Evidence from the mineral economies, World Development 23(10).

Table B.1: Extractives Dependency Index (EDI) and its individual component for selected African countries (Modified from Hailu, D. and Kipgen, C., 2015)

Rank	EDI	Country	EI Export Share	HTM*	Export Component	Revenue	NIPC*	Revenue Component	EI Value Added*	MVA*	Value Added Component
3rd	5.68	Madagascar	10.05	0.06	9.48	2.12	0.14	1.83	10.56	0	10.56
7th	8.75	Liberia	16.64	0.02	16.32	13.48	0.28	9.72	4.22	0	4.22
8th	8.82	Lesotho	22.65	0.05	21.44	0.74	0.35	0.48	70	0.05	66.29
10th	12.41	Burkina Faso	26.3	0.04	25.34	1.41	0.16	1.18	64.02	0	64.02
11th	12.83	Mozambique	38.01	0.06	35.64	1.47	0.23	1.13	52.21	0	52.21
13th	14.36	Ghana	20.45	0.07	19.03	2.62	0.18	2.15	72.58	0	72.58
14th	14.61	Sierra Leone	43.68	0.05	41.51	1.58	0.17	1.31	57.24	0	57.24
16th	16.10	Tanzania	37.97	0.08	35.06	2.28	0.22	1.79	66.59	0	66.59
17th	19.98	Cote d'Ivoire	31.81	0.11	28.23	5.96	0.2	4.77	67.78	0.13	59.17
18th	20.11	Namibia	42.22	0.09	38.51	5.68	0.31	3.92	79.56	0.32	53.86
20th	21.80	Central African Rep.	43.82	0.02	42.79	4.42	0.15	3.76	64.35	0	64.35
26th	30.19	Niger	34.43	0.09	31.16	14.21	0.13	12.32	71.65	0	71.65
32nd	36.41	Dem. Rep. Congo	78.8	0.06	74.22	9.45	0.16	7.98	81.55	0	81.55
36th	38.04	Zambia	76.39	0.07	70.72	22.11	0.28	15.92	48.9	0	48.9
37th	38.56	Mali	54.82	0.06	51.45	18.39	0.16	15.37	72.51	0	72.51

* = Normalised or transformed values.

Source: Hailu, D. and Kipgen, C., 2015, *The Extractive Dependence Index* (*EDI*), United Nations Development Program.

Table B.2: Percentage of 2013 world mineral exploration investment directed to Africa (Source SNL, 2014)

African Region	Percentage of 2013 Worldwide Mineral Exploration Investment
Western Africa	6%
East Africa	3%
Democratic Republic of Congo	2%
Southern Africa	3%
Rest of Africa, mainly Sub-Saharan regions	4%
Total Africa	17%

yet-to-be-developed projects and exploration discoveries, qualify as major or even giant by global standards.

In this light it is no surprise that the continent had become a magnet for foreign direct investment (FDI) during the past mining boom and particularly, given its undisputed mineral prospectivity, for international investment focused on mineral exploration and mine development at the expenses of traditional destinations such as Australia and Canada. SNL Mining & Metals (2014) estimates that, in 2013, Africa attracted US$2.9 billion or 17% of worldwide mineral exploration investment, mainly for gold, base metals and iron ore. The bulk of this, as shown in Table B.2, was in the Sub-Saharan region. No doubt this will over time lead to new mineral discoveries that will sustain, or even enhance, the current rate of economic growth in the region.

With the end of the mining boom, however, the mining industry has in the last couple of years been placed under significant financial pressure, particularly exploration with many prospects being shelved. Development of some new projects has also slowed down or ceased and a few marginal mines had to be put on care and maintenance, which hopefully will bounce back once prices recover.

6.2 Current Status of Transfer Pricing Legislation and Administration in Africa

6.2.1 Transfer pricing legislation

The ability for tax administrations to identify and address transfer pricing risks is highly dependent on the existence, within their tax laws, of well-articulated and enforceable transfer pricing legislative provisions and related regulations. Sophisticated TP legislation should be consistent with the generally accepted international standard of the arm's length principle, as set out in Article 9 (Associated Enterprises) of the UN Model Tax Convention and Article 9 (Associated Enterprises)[109] of the OECD's Model Tax Convention. Both models, which between them are the basis for nearly all bilateral treaties for avoiding double taxation, endorse the arm's length principle for pricing transactions within a MNE. The OECD (2010) *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, as amended, and its predecessors provide consistent policies and practices that have been applied to transactions between related parties in developed economies by tax administrations for over three decades. However, attempts to implement or even adapt these guidelines to Africa have proven, with a few exceptions, slow, costly and often ineffective.

[109]Article 7 (Business Profits) provides equivalent arm's length principles for permanent establishments.

Although many African countries have basic provisions in place to deal with transfer pricing, they often do not include appropriate documentation requirements and/or have not yet been complemented by the necessary regulations/guidance for implementation. A few African countries have not yet embarked in, or are still at the very initial stages of the process.

Even in cases where TP legislation exists, knowledge of the mining industry within some tax authorities may be inadequate, and as a consequence, the specificities of the mining sector may not be fully identified nor addressed.

Table B.3 provides an up-to-date view of the status of evolution of transfer pricing legislation in a sample of selected Sub-Saharan African countries. The table also displays those countries that

Table B.3: Current status of transfer pricing legislation in selected Sub-Saharan African countries

Country	Legislation (providing for arm's length principle)	Implementing Regulations/ Guidance	Effective Documentation Requirements (with penalty and/or onus of proof)	Annual Disclosure Requirements (for related-parties transactions)
Angola	Large Taxpayers Statute 2013 and Circular N.12/ DLT/DNI/2014	(no APAs)	Yes	Yes, from 2015
Botswana	TP rules currently being developed. ALP in General Income Tax Law	No	No	No
Burkina Faso	Art. 22 of General Tax Code	(no APAs)	No. No TP specific penalties	No
Burundi	No formal rules. ALP in General Income Tax Law	No	No	No
Cameroon	Yes, 2012 Finance Law	Being revised (no APAs)	Yes	Yes, on request
Eritrea	No formal rules. ALP in General Income Tax Law	No	No	No
Ethiopia	Yes	Being drafted	No	No
Ghana	Yes, S. 70 of IRA	Yes (no APSs)	Yes	Yes
Guinea	Yes, in 2014 Financial Act	No (no APAs)	Yes, $25M threshold, no penalty	No
Ivory Coast	Anti-avoidance rules in A. 38 of CGI	Yes (no APAs)	Yes. No TP specific penalties	No, on request
Kenya	Yes, C.470 of ITA	Yes (no APAs)	Yes	Yes (but not yet widespread)
Lesotho	No formal rules. ALP in General Income Tax Law	No	No	No
Madagascar	Anti-avoidance rules in A.010115 of CGI	Not specific (no APAs)	Yes LT only	Not specific
Malawi	Yes, C. 41 of ITA	Yes (no APAs)	Yes. No TP specific penalties	No, on request

Table B.3: (continued)

Country	Legislation (providing for arm's length principle)	Implementing Regulations/ Guidance	Effective Documentation Requirements (with penalty and/or onus of proof)	Annual Disclosure Requirements (for related-parties transactions)
Mali	Anti-avoidance rules in A. 81 of CGI	Being drafted (no APAs)	No No TP specific penalties	No
Mozambique	Yes, A. 58 of Corporate Income Tax Code	Not specific (APAs)	No. No TP specific penalties	No
Namibia	Yes, S.95(a) of the Income Tax Act	Yes (no APAs)	No. No TP specific penalties	No
Nigeria	Yes	Yes (APAs)	Yes. No TP specific penalties	No, on request
Senegal	Yes, A.17 of CGI	Yes (APAs)	Yes, LT only. No TP specific penalties	No, on request
Sierra Leone	General anti-avoidance legislation	No	No	No
South Africa	Yes, Taxation Laws Amendment Act N.7	Yes (no APAs)	Yes	Yes
Tanzania	Anti-avoidance S. 33 of ITA Act	Yes (no APAs)	No. Discretionary penalty powers	Yes
Uganda	Yes, C. 340 of ITA	Yes (APAs)	Yes	No, on request
Zambia	Yes, S. 97A of ITA	Yes (no APSs)	Yes. No TP specific penalties	No, on request
Zimbabwe	Yes, TP provisions introduced in 2015 as part of the Income Tax Code	No (no APAs)	Yes	Yes

Sources: This study's TP questionnaires and recent TP Country Summaries by Transfer Pricing Associates, PWC, KPMG and Grant-Thornton.

currently provide for the negotiation of Advance Pricing Agreements (APAs), even though this mechanism has been rarely applied in practice.

While the existence of appropriate legislation concerning transfer pricing is fundamental to dealing with transfer pricing risks, lack of commensurate administrative capacity, limited access to reliable comparables databases and paucity of reliable domestic comparables to actively enforce the legislation may render it largely ineffective.

6.2.2 Results of transfer pricing questionnaire

A comprehensive transfer pricing questionnaire was drafted and administered to a number of senior tax and mines department officials in some 40 African countries that attended the IM4DC/WBG mining tax administration workshops. The questionnaire was drafted to get an idea of the degree of TP legislative evolution, as well as the extent to which transfer pricing audits are in fact currently being carried out in various countries. The questionnaire, provided in Appendix B.1, included 58 questions grouped into 15 specific sections. Responses were received from 19 jurisdictions,

representing just under 50% of the nations approached. The quality of the responses was variable with many questionnaires only partially completed in spite of repeated reminders.

In general terms, analysis of the questionnaires confirms that, even though many jurisdictions have adequate specific transfer pricing legislation in place, only a relatively small number enforce it to any appreciable degree and transfer pricing audits in general, let alone those of mining companies specifically, with a few exceptions, are not or rarely carried out.

More specifically the questionnaires indicated that:

- All countries hosting significant mining operations consider transfer pricing to constitute a significant issue, even though only a few countries were in a position to estimate the potential magnitude of its impact on tax revenue from mining (e.g., in South Africa $500 to $2000 million).
- Half of the countries surveyed have specific transfer pricing legislation/rules in place, one quarter have reference to the arm's length principle in their general tax laws and the rest, while not currently having established transfer pricing provisions, are either developing them or considering doing so.
- The majority of respondents have limited and primarily regional networks of double taxation agreements.
- Mining projects are ring-fenced for tax purposes in the majority of jurisdictions where the industry is active, with no specific requirements in a few countries where mining is in its infancy.
- Most jurisdictions see the area of mineral transfers/sales as the main transfer pricing risk; however, only a quarter of respondents had systems in place to check the degree to which the prices applied to minerals transferred to related parties comply with the arm's length principle, and only two or three do so systematically.
- Similarly, only a quarter of respondents systematically carry out value-chain analysis to determine whether marketing and hedging fees charged by related parties comply with the arm's length principle.
- About three quarters of respondents reported high levels of borrowing by the mining industry, largely from related overseas parties with remittance of the related interest expenses to the lenders being subject to various levels of withholding tax. However, in many instances the rate of withholding tax may have been reduced or even waved in line with the terms of stability agreements and/or double taxation agreements.
- About two-thirds of respondents have thin capitalization rules in place, but some appear unable to effectively enforce them.
- Just over half of the respondents have a reasonably clear idea of the degree to which routine corporate services are provided by related parties and confirmed the application of withholding tax to the relevant remittances. However, only one quarter indicated that the relevant transfer prices are routinely checked for compliance with the arm's length principle.
- Similarly, half of the respondents appear to be aware of the extent to which nonroutine specialized services involving the use of intangibles such as IP, are provided by related parties. Even though withholding taxes applied to related party payments are in place in the majority of jurisdictions, systematic checks are only carried out by a minority of the respondents (i.e., 25%).
- About a third of respondents have generally limited access to relevant comparables databases to support their analyses.
- Communication and consultation relating to transfer pricing with taxpayers prior to establishing their mining operations in the country are generally very limited, often confined to making documents detailing the applicable rules available to them.
- Three-quarters of the respondents did not carry out any specific transfer pricing audits in 2013, although transfer pricing issues did arise in the context of two general tax audits. Two jurisdictions (i.e., South Africa and Tanzania) were actively planning around 20 and 14 annual audits involving transfer pricing respectively, some of which relate to mining

companies. In addition, Lesotho and Malawi carried out one and two transfer pricing audits, respectively.

- Risk profiling and risk-based auditing plans were adopted by jurisdictions hosting a significant number of mining operations, while a less formalized approach was used in countries with a limited number. While some of the audits have not yet been completed, so far audits are considered to be cost-justified in terms of both consequent adjustments and improvements in the taxpayers' compliance behaviour.
- Over half of the respondents confirmed the requirement for taxpayers to maintain contemporaneous transfer pricing documentation for a period of five to six years. The negative response from the other jurisdictions, which in some cases are known to have such a requirement, is likely due to a misinterpretation of the question, which must have been interpreted in terms of a requirement for industry to actually submit such information annually.
- There was a general feeling that industry is sometimes reluctant to submit adequate transfer pricing information, and even when it does, it may be compiled in a manner difficult to disaggregate and interpret.
- Around half of the jurisdictions, however, appear to have the legislative power to recharacterize transactions and impose adjustments.
- Some of the adjustments were accepted by the taxpayer. Others were the subject of appeals and/or disputes, which in the majority of cases were settled through a negotiated outcome or suspended because of the overwhelming complexity of cross-border investigations. Two cases that went to court are as yet unresolved.
- Six jurisdictions have dedicated transfer pricing teams that include between two and twenty officers with variable levels of experience. A few jurisdictions have officers with specialized skills in transfer pricing within the general ranks of their tax inspectors, but numbers are generally very low. Many tax administrations, however, are in the course of training some of their officers in the area of transfer pricing.

With a few exceptions, the complexity of the processes and the limited technical capacity and industry knowledge of most tax administrations, coupled with the high cost of implementing a transfer pricing audit function in general, are the main reasons for the current state of affairs. Only a few jurisdictions have specific transfer pricing units within their tax administrations, and audits of transfer pricing issues are rarely carried out as part of general audits.

The study questionnaire clearly highlights a strong need for capacity strengthening in the area of transfer pricing throughout the African continent and for enhancing the knowledge of mining industry processes (including knowledge of the key value drivers in its supply chain) within tax authorities, particularly in fast-developing mineral-rich countries. These issues will be reviewed and assessed, based on a breakdown of the typical revenue and cost structures (both capital and operating recurrent) for representative mining operations involving different mineral commodities and production types in the following sections.

6.3 Revenue and Cost Structure of African Mining Operations as a Basis for Identification of Transfer Pricing Risks

6.3.1 General considerations

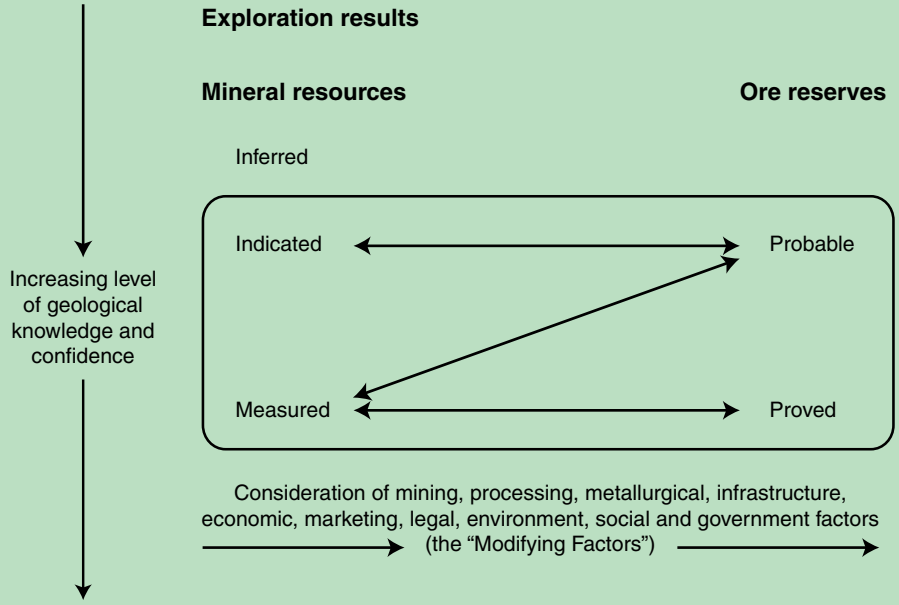
As a background to this study and to quantify the economic importance of the mining industry in the African context, the African mineral resources for the main mineral commodities currently mined in the continent were identified and quantified in terms of:

- Percentage of world production;
- Percentage of world identified resources.

Box B.1: Schematic representation of the relationship between mineral resources and ore reserves according to the JORC Code

Figure e presents related levels of confidence in the delineation of ore resources and reserves as reproduced from the Australian Institute of Mining and Metallurgy's Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, by the Joint Ore Reserves Committee (JORC), 2012 edition. The resources dimension (vertical axis) relates primarily to the degree of confidence in terms of tonnages and grades, while the horizontal axis superimposes on these technical, economic and other 'Modifying factors' influencing the potential commercial feasibility of some of the resources to actually be capable of being mined profitably, that is to say, to become mining reserves.

Figure e: JORC 2012 resource and reserve classifications



Much of this information was extracted from publications by the US Geological Survey (USGS)[110] and the British Geological Survey (BGS),[111] prepared by MinEx Consulting, and from the websites of various companies and industry groups. In this section, the term "resource"[112] describes mineralisation in the ground, while "reserve"[113] has economic connotations and covers that portion of a resource that has a high probability of being viable given the current and prospective economic situation, and the application of suitable methods of extraction (see Box B.1).

[110]The USGS's Minerals Yearbook, http://minerals.usgs.gov/minerals/pubs/commodity/myb/.

[111]The BGS's World Mineral Production 2009–2013, http://www.bgs.ac.uk/mineralsuk/statistics/home.html.

[112]The USGS defines a ***resource*** as "a concentration of naturally occurring solid, liquid, or gaseous materials in or on the Earth's crust in such form that economic extraction of a commodity is regarded as feasible, either currently or at some future time." This classification is then subdivided into ***identified*** and ***undiscovered*** based on the level of information used to identify its existence.

[113]A ***reserve*** is defined as "that portion of an identified resource from which a useable mineral or energy commodity can be economically and legally extracted at the time of determination." Reserves are then further subdivided into ***measured, indicated*** and ***inferred*** based on the level of information used in the determination of quality and quantity. These classifications, which are applied primarily to the broad assessment of mineral resources at the level of various national and global endowment inventories, relate to, but are distinct from, the reporting resource/reserve classifications (e.g., National Instrument 43-101, JORC and SAMREC Codes) used at the project level.

In addition, a database containing all current mining operations for the main mineral commodities mined in Sub-Saharan Africa was compiled by extracting information primarily from the RIU's Register of African Mines 2014 and from a variety of other published and unpublished sources. This database, provided in Appendix B.2, categorises the population of mines, including 247 individual operations that are currently in production out of a total of 289, according to:

- The mineral commodity they produce on the basis of their main output[114] (e.g., gold, base metals, coal, etc.);
- Their geographical location;
- The type of mining (surface or underground);
- The size of individual mines in terms of their daily/annual production throughput; and
- The number and significance of current development projects and exploration potential.

A cumulative probability distribution of daily production throughputs for each commodity group was then constructed, which allowed operations to be classified into three size categories for each mining type as:

- Small: falling below the first quartile (Q1) in terms of production rate,
- Medium: falling between the first and third quartiles, and
- Large: having a production rate in excess of the third quartile (Q3).

The size of the "typical" mine was then taken to be the midpoint of each size category range. It must be pointed out that "small," "medium" and "large" are relative terms in so far that a "small" coal or iron ore open-cut mine can in fact represent a reasonable sizeable operation. A "large" classification generally denotes a major or world-class deposit.

Typical throughputs were then used to identify a representative stripping ratio and mining method for surface and underground operations respectively. On this basis, the order of magnitude of the main cost components were assessed for each typical operation, including specific items of both capital and recurrent expenditures. These cost breakups provide an initial indication of which activities and related transactions are of financial importance in different types of mines and should be given priority when considering their potential susceptibility to transfer pricing issues when mapping the main risk points to government revenue.[115]

6.3.2 Key commodities characteristics and their influence on cross-border transactions

This section highlights the key differences among the main commodities mined in Africa as identified through an analysis of the categorization and breakup of their mining revenue and cost components, which are shown in detail for each commodity in Appendix B.3. These cost breakups provide some indication of which activities and related transactions may be of financial importance in different types of mines for different commodities, and represent a starting point for considering potential issues that may arise in the area of transfer pricing. Furthermore, in looking at these cost components, one may gain a better appreciation of the degree to which any of the related transactions may involve hard-to-value specialised services and intangible assets. Caution, however, needs to be exercised for the manner in which these indicative data are used, and they should not be assumed by tax administrations to always be applicable regardless of considerations of project-specific circumstances.

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[114]In a minority of cases where the value of co-products were reasonably balanced or the mine was in transition from a main commodity output to another, e.g., from gold to copper, a mine may have been listed under both commodities. For example Bisha mine in Eritrea produces both significant gold and copper and is therefore listed under both commodities.

[115]Cost information was extracted from the CostMine database.

Of the high ticket items identified in Appendix B.3, it appears that the following items may involve transactions with high intangible components in their cost structures, thus deserving priority attention:

- Revenue related transactions (e.g., distribution and marketing services);
- Management and administrative services provided as an annual operating cost that may include accounting and finance functions;
- Transportation services that may involve the provision of insurance; and
- Engineering services provided as a capital expenditure.

The detailed type of information to be found in Appendix B.3 includes a systematic overview and listing of the major development and mining projects for key commodities in each African country together with an assessment of the importance of Africa, and in some cases of the resources and reserves of individual countries, in a global context. In addition, for each key commodity a qualitative assessment of the exploration potential in Africa is provided based on the number of exploration projects in each country.

It is important to note that different commodities have markedly different characteristics in terms of their:

- Extraction technology involved;
- Level of ore tonnage throughput;
- Necessary initial capital cost;
- Unit recurrent cost of production;
- Required downstream processing and related energy intensity;
- Reliance on transport and logistics as a major input; and
- Specifications and marketing characteristics.

For example, cost characteristics will be very different between underground and open pit mines, particularly in the case of bulk commodities (e.g., iron ore and coal). The latter will also display significantly higher levels of revenue and capital cost as a function of their relatively large ore tonnage throughput. On the redeeming side, however, they will display generally lower recurrent unit costs of production due to their economies of scale.

Contrary to bulk mining that generally produces and exports crushed and screened ore after no or minimum beneficiation, some metallic commodities, such as copper and other base metals, nickel, and to a lesser degree gold, require significant investment in downstream processing as they are marketed as either concentrates or intermediate products (e.g., copper (gold) concentrates, nickel concentrate, etc.) and/or crude and refined metals (e.g., blister copper, nickel matte, doré, etc.).

To be developed, bulk commodities require a significant investment in transportation and port infrastructure capable of conveying large volumes of ore to export markets. In the African context this may involve railing facilities crossing national boundaries that requires significant negotiation and cooperation among countries.

As discussed in detail in Part A under the heading of Marketing Hubs, product specifications vary from very stringent for refined metals sold on terminal markets (e.g., London Metals Exchange) to more variable for concentrates and intermediate products, to customer specifications for specialty metals and industrial minerals, to strictly quality-based specifications for diamonds and gemstones in general.

6.3.2.1 Global production and resource profiles for key commodities in Africa

Precious metals are an important part of the mining landscape in Africa. Early mining in Africa had been dominated first by gold mining from South Africa's extraordinary Witwatersrand gold

deposits, and second by platinum in the Bushveld Complex. The gold industry is very fragmented,[116] in contrast to other segments of the mining industry in which a few large companies dominate production. Gold deposits are typically smaller than those of other minerals due to the relative scarcity and high value of gold, allowing for smaller operations to produce at a profit through low volumes of high unit-value material that does not create any major requirement in terms of its transportation apart from security and insurance issues. In 2012, world production of gold was calculated to be 2,690 tonnes.[117] In 2013, total production reached 2,982 tonnes,[118] with world gold reserves in 2014 estimated to be 55,000 tonnes.[119] As outlined in Appendix B.3, this increase in production was mainly due to a growing supply coming from China.

Base metal mining (copper, lead and zinc) in Africa is generally more consolidated than their counterparts around the globe. A few base metal mines in Africa are fully vertically integrated to the point where they sell refined metals.[120] Generally, operations are only vertically integrated to the concentration stage and sell concentrates to related or third party smelters, which often entails significant land and sea freight transport activities. The main constraint for developing smelting capacity, besides the availability of significant reserves of high-quality ores, is the availability of a sufficient, reliable and affordable energy supply.

Due to its comparatively lower market price (relative to gold, PGMs and other high-value minerals) and the reducing grades being mined, mining copper economically requires relatively large operations to move substantial tonnages of material and advanced copper extraction and refining technologies. These create relatively high barriers to entry that lead to a global industry that is dominated by a few large operators. In 2013, world mine production of copper was calculated to be 18.1 million tonnes, representing an 8.4% increase from 2012, and production is expected to continue growing on trend at a compound annual rate of 3.9% over the period from 2014 to 2020.[121] As discussed in Appendix B.3, global production of copper continues to be dominated by Chile, contributing just under one-third of total supply.

Mining bulk commodities such as iron ore and coal is quite consolidated,[122] and depending on mine infrastructure, production along the value chain can start at exploration and end at a high level of beneficiation. For iron ore, the level of vertical integration is generally limited to activities from exploration to mine development down to a low level of beneficiation, as it is primarily sold in the form of crushed and screened ores, sometimes blended and subordinately in the form of partially beneficiated products. By contrast, mining of coal products range from bulk material with no or limited processing (typically as feed for power plants) to a complex and vertically integrated range of products. Most exported coal is generally sold in the form of crushed, screened and/or washed/processed material.

Iron is the world's second most abundant metal and approximately 98% of production is used as the key ingredient in steel making.[123] Predominantly found in the form of either hematite or magnetite, world mine production in 2013 was calculated to be 2.8 billion tonnes and is expected to increase slightly to 2.9 billion tonnes in 2014.[124] The top three producing countries accounted for more than 77% of total world production in 2013, and were expected to make a similar contribution in 2014 (Appendix B.3).

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[116]http://www.bloomberg.com/markets/companies/gold-mining/

[117]http://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs-2014-gold.pdf

[118]http://www.mining.com/global-gold-silver-production-to-hit-fresh-records-this-year-66566/

[119]http://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs2015.pdf

[120]http://mrdata.usgs.gov/mineral-resources/copper-smelters.html

[121]http://finance.yahoo.com/news/global-copper-mining-2020-150100834.html

[122]http://www.bloomberg.com/markets/companies/metal-iron/

[123]http://www.australianminesatlas.gov.au/education/fact_sheets/iron.html

[124]http://minerals.usgs.gov/mcs2015.pdf

Coal is globally sourced and found in over 70 countries and actively mined in most of them. It is mined for its energy content and mostly used for the generation of electricity, metallurgical use (e.g., steel industries use coal as a fuel for extraction of iron from ore) and conversion into liquid and gas fuels. According to the World Energy Council, "Coal's dominant position in the global energy mix is largely due to the fact that it is abundant, widely distributed across the globe and affordable." Global consumption of coal is growing and, despite negative publicity, is expected to increase as developing countries require more energy to support their expanding populations and economic growth. It is estimated that the international coal mining market requires production of about 7.7 billion tonnes of coal annually.[125]

Iron ore and coal deposits and operations are typically larger in terms of production tonnages than those for other minerals due to their abundance and the high volumes required by the market. Entry barriers are high because of the scale of operations that rely on large, mechanised technologies requiring significant upfront capital investment. As a consequence, much of the exported related production is concentrated in countries with inherently large resources and with access to infrastructure, capital and markets. The main constraint to economically mining bulk commodities is not exclusively their grade, but also their location relative to markets, making logistics rather than the mining processes the key driver as to the economic viability of a deposit. In essence, iron ore and coal mines are often high-volume low-margin businesses that require significant investment in, often proprietary, transportation infrastructure such as rail and port facilities.[126] Thus availability of this infrastructure is a critical factor in their development decision.

Diamond deposits are typically smaller than those for other minerals due to their relative scarcity. Entry barriers range from very low for widespread alluvial deposits to very high because of the capital and technological requirements for the development of some types of deposits such as deep kimberlite plugs and off-shore marine detrital deposits. As a consequence of this and the high diamond endowment of the continent, there is a variety of diamond producers present in Africa. Diamond production is, however, becoming increasingly challenging as mining progressively moves towards deeper, less profitable and more remote resources. Apart from issues of security and insurance, transportation is not an issue with rough diamond and gemstones in general because of their high-value and low-volume nature.

Considering the size of some of the African deposits and the scale of the investment required to develop them, which cannot be funded with local capital, large mining operations tend to attract large multinational enterprises. The strong international demand for mineral products combined with the scale of operations results in significant cross-border flows of goods and services and related cash flows creating opportunities and risk for the misuse of transfer prices.

6.3.2.2 Current state of key commodity production in Africa

Gold and Platinum Group Minerals (PGM) account for approximately half of the operating and exploration projects on the African continent, including projects that have reached the advanced study stages (Table B.4). As a result, extraction of these commodities contributes substantially to government revenues from mining across the continent, justifying the direction of auditing resources to these commodity sectors.

Of the 286 current mining operations, 101 are producing gold (Table B.4). Furthermore, more than half of the exploration activity on the African continent is looking for gold deposits. As discussed in Appendix B.3, of the 2,690 tonnes of gold produced worldwide in 2012, the African continent

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[125]Source: First Research: http://www.firstresearch.com/industry-research/Coal-Mining.html accessed 16 March 2015.

[126]en.wikipedia.org/wiki/Iron-ore

Table B.4: Mining activities in Africa by commodity (Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications)

Commodity	Producing	Scoping/Feasibility Study	Exploration	Total
Coal	63	38	46	**147**
Copper	26	29	79	**134**
Diamonds	41	14	39	**94**
Gold	101	82	397	**580**
Iron Ore	20	37	57	**114**
Nickel	5	7	17	**29**
Platinum	23	22	31	**76**
Potash	0	5	5	**10**
Rare Earths	0	4	20	**24**
Uranium	7	18	60	**85**
Total	**286**	**256**	**751**	**1293**

as a whole accounted for between 20 and 25%,[127] with the top 10 producing countries outputting almost 500 tonnes of gold.

Most gold mines in Africa are vertically integrated from exploration through development and mining to processing operations, including smelting and in some cases refining, and even sales. Sales products for gold mining operations in Africa are typically in the form of refined metal (doré). However, the level of purity for these products will vary depending upon the requirements of specific customers, and to meet the standards of terminal bullion markets.

The analysis in Appendix B.3 shows that the majority of gold operations in production on the African continent are surface mines, with the "typical" surface gold mine having an expected production rate of approximately 7,500 tonnes of ore per day, and the typical underground gold mine having an expected throughput of 1,500 tonnes per day (Table B.5). The analysis also shows that there is a strong pipeline for gold mining in Africa, with as many projects at the advanced study stage as are currently in production. Of interest is that while the traditional gold mining nation of South Africa has the most projects at the advanced study stage, as a region, West Africa has the strongest pipeline, signalling the importance of this region to the future of the global gold mining industry.

Shifting attention to copper, of the approximately 16.8 million tonnes produced worldwide in 2012, the African continent as a whole accounted for approximately 8.5%,[128] with the top producing countries outputting more than 1.4 million tonnes of copper (Appendix B.3). Currently, the copper industry represents a substantial proportion of the mining-related activities taking place on the African continent. As illustrated in Table B.4, of the 286 producing mining operations on the African continent, 26 of them are copper operations, which ranks fourth among commodities.

[127]British Geological Survey http://www.bgs.ac.uk/mineralsuk/statistics/home.html
[128]http://en.wikipedia.org/wiki/List_of_countries_by_copper_production

Table B.5: Expected daily throughput and annual revenue for typical African surface and underground mining operations

Commodity	Mine Type	Production Rate (t/day)	Expected Revenue (USD/annum)
Gold (1.18g/t @ $1,290.30/oz)	Surface	7,500	$132,168,270
Gold (5.90g/t @ $1,290.30/oz)	Underground	1,500	$132,168,270
Copper (1.11% @ $6,631.06/t)	Surface	9,500	$196,348,074
Copper (1.11% @ $6,631.06/t)	Underground	6,000	$124,009,310
Iron ore (62% @ $100/t)	Surface	8,000	$288,000,000
Coal (@ $66.69/t)	Surface	6,000	$144,050,400
Coal (@ $66.69/t)	Underground	3,500	$84,029,400
Diamonds (30cpht @ $107.69/ct)	Surface	8,000	$93,046,154
Diamonds (50cpht @ $107.69/ct)	Underground	6,000	$116,307,692

However, the future importance of copper to the African continent becomes apparent when looking at the number of projects in the advanced study stage or exploration stage, with 29 and 79 projects respectively, placing copper third behind gold and coal for advanced study stage projects and second only to gold in exploration intensity. This developing pipeline positions copper as a commodity of ever increasing prominence and importance as the African nations continue to develop.

The majority of the copper mining operations in Africa are surface mines, where the expected throughput is approximately 9,500 tonnes of ore per day (Table B.5). The majority of the copper mining operations[129] are based in the DRC and Zambia, with the majority of copper mines in the DRC being surface operations, while Zambia, with the exception of two large surface mines, has predominantly underground operations.

The analysis in Appendix B.3 also shows that there is a strong pipeline for copper mining in Africa, with more projects at advanced study stages as are currently in production. Of interest is that while the traditional copper mining nations of DRC and Zambia have a significant number of advanced study stage projects, 11 and 5 respectively, Namibia also has 7 projects in this classification. The notion that future production may come from these three countries is supported when looking at the distribution of exploration projects across the continent, as combined they account for 50 of the 79 copper exploration projects.

While currently only accounting for less than 10% of producing mines in Africa, iron ore has the potential to contribute significantly to government revenues. Currently, the iron ore sector represents a substantial proportion of the mining related activities taking place on the African continent, with many projects under exploration or in the advanced study stages. Categorizing the active operations by size and geographical location shows that one-third of African iron ore production currently comes from South Africa, with the typical mine expected to produce primarily direct shipping ore (DSO) at a daily tonnage rate of 8,000 tonnes per day. In total, African production of iron ore amounted to 130.6 million tonnes in 2013, which represented 5% of the world supply, and of this amount 51% came from South Africa.

[129]This classification is made by number of operations and not based on annual output.

As with other commodities, the analysis in Appendix B.3 shows that there is a strong pipeline for iron ore mining in Africa, with more projects at advanced study stages (37) as are currently in production (20). Of interest is that while South Africa is poised to be the largest producer, there are also a number of exploration and advanced study stage projects in the West African region.

Table B.4 shows that the coal industry represents a significant proportion of mining activities taking place on the African continent. As far as exploration is concerned, only 6% of the exploration activity on the African continent is looking for coal deposits. The main reasons for this are lack of transport infrastructure and capital, which are both required to compete with established global producers. However, there is significant potential for coal considering the growing energy needs of the continent. This will require the establishment of local markets and investment in exploration for coal. African governments are also set to become more strategic with the protection of supply for local markets through either market restrictions or encouraging more exploration for coal.

A few countries, with South Africa dominant, account for the 280 million tonnes of coal produced in Africa, which is less than 5% of global production. Currently there are 63 coal operations in production on the African continent, with the typical mine being a surface mining operation producing approximately 6,000 tonnes per day.

Africa is a significant and known source of diamonds, but its coloured gemstones are becoming increasingly important. Gemstones occur in many countries throughout the continent, with significant diamond finds being regularly recorded. The diamond industry represents a significant proportion of mining activities taking place on the African continent, while diamond exploration accounts for about 5% of total exploration activity. Of the 130 million carats of diamonds produced worldwide in 2013, the top ten African countries by production accounted for almost 70 million carats, making up 54% of global production (Table B.6). This is significant and the continent is expected to maintain its strong supply position in the global market into the future.

Currently there are about 41 diamond-producing operations on the African continent, with the majority being surface mines. Based on the statistical analysis in Appendix B.3, the typical surface mine is expected to produce approximately 8,000 tonnes of ore per day (Table B.5). With the

Table B.6: Top 10 diamond producing countries in Africa—2012

Country	2013 Production (carats)
Botswana	23,187,580
DRC	15,681,985
Zimbabwe	10,411,817
Angola	9,360,470
South Africa	8,143,256
Namibia	1,689,048
Sierra Leone	608,955
Lesotho	414,014
Guinea	202,365
Tanzania	179,633
Total	**69,879,123**

exception of Sierra Leone, most of the diamond mining operations[130] are based in the southern region of the African continent.[131]

Exploration potential in Africa is high in general for all mineral commodities. The current drive by African governments to formalise the artisanal mining sector and the tendency of informal activity to alert large companies to potential significant findings signals that the African continent will remain a major supplier of world diamond demand for many years to come, which is supported by the analysis in Appendix B.3 showing that there is a reasonable pipeline for diamond mining in Africa, with the number of exploration projects and studies at advanced stages together outnumbering the producing operations. Considering the relatively small global diamond reserve base, this emphasises Africa's strong position in the diamond sector.

6.3.2.3 Broad revenue and cost considerations

Small mispricing differences between transfer prices and at arm's length prices, when occurring in the context of very large items of either revenue or expenses, can result in significant tax leakages. For instance, on an annualised basis the gross revenue generated by a typical surface gold mining operation in Africa is expected to be more than USD132 million (Table B.5). Furthermore, mining operations also incur substantial expenses for not only construction, plant and equipment of a capital nature, but also consumables and specialty services, which in many cases are provided by a related overseas party. The level of potential risk to the tax base will be dependent upon the nature of the mining operation, as the different characteristics will dictate a different mix of capital expenditures (CAPEX) and annual operating expenses (OPEX), as well as different sources of procurement.

Table B.7 shows the general cost breakup and magnitude of expenditure for items that may be incurred by the "typical" surface mining operations for each of the key commodities mined on the African continent.[132] This table shows that irrespective of the commodity being mined, large proportions of CAPEX will be directed towards the purchase and installation of equipment. This item, along with those associated with specialised engineering and management services, are often considered to be risky and subject to transfer mispricing. Exemption from customs duties and VAT, which are frequently part of the fiscal incentives provided to attract FDI in the industry, are also an encouragement to inflate costs, indirectly pushing more debt into the importing country. However, tax authorities should be in a position to constrain and manage these risks as comparables can be found for the majority of equipment purchased by a mining operation. By contrast, and as already discussed in Part A when dealing with the MNEs' use of Engineering, Science and Technical hubs, there is greater ambiguity and opportunities for potential mispricing in the areas of engineering and management services, which can have a material impact on the taxes to be paid by the mining company.

Looking at the recurring OPEX in Table B.7, it is apparent that the areas of risk will be very dependent upon the commodity being mined. As expected, the majority of OPEX in a bulk mining operation (iron ore and coal) will be for the purpose of transportation, with labour and equipment operations accounting for a substantial proportion of the remainder. Alternatively, in gold and copper mining, supplies and consumables account for a much greater proportion of the annual OPEX. As illustrated in Table B.8, when these supplies and consumables are disaggregated, it is apparent that it is those components associated with the processing stages of the operation (grinding media and mill liners, processing agents, and fuel) that are of the greatest magnitude. This demonstrates the importance to a tax administration of understanding the degree to which an

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[130]This classification is made by number of operations and not based on annual output.

[131]These statistics must be considered with some scepticism, as some operations do not report production statistics, and therefore, they have not been included within the statistical analysis.

[132]See Appendix B.3 for a complete analysis of the key commodities using different sizes and types of operations.

Table B.7: Costing for "typical" African surface mining operations *(Note that the Labour and Equipment Operation line item for bulk commodities (iron ore and coal) includes the costs of crushing and screening, and as a consequence, does not appear in the disaggregation of Supplies and Consumables in Table B.8 below)*

	Typical Surface Mining Operations									
	Gold 4:1 Strip Ratio		**Copper 4:1 Strip Ratio**		**Iron Ore 4:1 Strip Ratio**		**Coal 20.2:1 Strip Ratio**		**Diamonds 4:1 Strip Ratio**	
Total Annual Operating Expenses	**$72,981,000**		**$88,099,200**		**$212,868,006**		**$204,481,977**		**$43,315,200**	
Supplies and Consumables	$29,673,000	41%	$34,029,000	39%	$7,315,200	3%	$23,000,630	11%	$7,315,200	17%
Labour and Equipment Operation	$30,915,000	42%	$38,782,800	44%	$28,080,000	13%	$50,015,923	24%	$28,080,000	65%
Administration	$5,751,000	8%	$7,284,600	8%	$3,974,400	2%	$7,603,200	4%	$3,974,400	9%
Transportation	—	0%	—	0%	$169,552,806	80%	$116,364,605	57%	—	0%
Other	$6,642,000	9%	$8,002,800	9%	$3,945,600	2%	$7,281,619	4%	$3,945,600	9%
Total Capital Expenditure	**$202,717,700**		**$191,801,100**		**$96,491,400**		**$254,699,100**		**$96,491,400**	
Equipment Purchases and Installation	$93,576,900	46%	$87,273,200	46%	$45,976,600	48%	$171,682,100	67%	$45,976,600	48%
Preproduction and Site Preparation	$7,239,800	4%	$7,239,800	4%	$7,239,800	8%	$18,0779,900	7%	$7,239,800	8%
Facilities and Buildings	$35,737,500	18%	$32,777,700	17%	$11,683,700	12%	$13,838,300	5%	$11,683,700	12%
Engineering & Management	$22,387,400	11%	$21,337,400	11%	$12,149,100	13%	$24,414,000	10%	$12,149,100	13%
Tailings Facility	$17,379,000	9%	$17,511,200	9%	—	0%	—	0%	—	0%
Sustaining and Working Capital	$18,692,200	9%	$17,956,900	9%	$11,737,300	12%	$6,493,400	3%	$11,737,300	12%
Other	$7,704,900	4%	$7,704,900	4%	$7,704,900	8%	$20,192,400	8%	$7,704,900	8%

Table B.8: Disaggregation of supplies and consumables expenditures for typical surface mining operations *(Note that Electricity and Grinding, etc., are supplies unrelated to the process of crushing and screen of bulk commodities (iron ore and coal) which are captured in the Labour and Equipment Operation line item reported in Table B.7 above)*

Supplies—Surface Mine	Typical Surface Mining Operations			
	Gold	Copper	Iron Ore	Coal
Diesel fuel and fuel oil	14%	15%	55%	25%
Electricity	10%	10%	0%	12%
Explosives and reagents	10%	10%	41%	50%
Blasting supplies	1%	1%	3%	2%
Grinding media and mill liners	47%	50%	0%	0%
Processing agents	17%	13%	0%	0%
Drill bits and steel	0%	0%	1%	0%
Spare parts and lubricants	0%	0%	0%	10%

operation is vertically integrated, as mispricing on these annual supplies can have a substantial impact on government revenues.

For example, the typical surface copper mining operation is expected to have a daily throughput of 9,500 tonnes of ore. With an assumed stripping ratio of 4:1, this mine would expect to have annual recurrent OPEX (mine and mill activities) of approximately USD88 million, of which approximately USD34 million would be spent on supplies and consumables, and approximately USD17 million of those supplies and consumables are related to grinding media and mill liners. If this component is acquired from a related party through the use of a transfer price that is 10% above the arm's length price, the erosion of government revenue, assuming a 30% tax rate, would be approximately USD0.5 million per annum.

This cost analysis demonstrates the type of information that can be found in Appendix B.3 for the typical mining operations on the African continent, and demonstrates the importance for a tax administration to understand the characteristics of a mining operation. For example, if a bulk mining operation is the subject of investigation, then care should be taken to understand the transportation and logistical part of the business, as this is where the greatest risk arises from the misuse of transfer prices.

6.3.3 Examples of transfer pricing issues emerging in the context of various commodities

This section will examine a range of case studies about transfer pricing issues relating to the key mineral commodities covered by the study. For each commodity group, the characteristics of which are discussed in detail in Appendix B.3, emphasis is placed on the type of products marketed and issues relating to their pricing. Case studies were derived from a multiplicity of sources, including the direct experiences of the authors, public inquiries and court cases, rigorous research by specialised institutions and preliminary research/investigations carried out by or on behalf of a number of NGOs. In the last instance, there is no doubt that issues relating to profit shifting and to the potential misuse of transfer pricing have become a matter of public concern, which is manifesting itself in very active involvement on the side of civil society.

In general there is a paucity of court proceedings dealing with transfer pricing issues specific to the mining industry. While there is no shortage of allegations of transfer mispricing based on circumstantial evidence levelled to various mining MNEs by a variety of NGOs, and some capture the attention of tax authorities, few lead to resolution through the courts, with most resulting in compromise tax adjustments being negotiated between the mining companies and the tax authorities, the terms of which are not released in the public arena. This state of affairs makes gathering well-documented case studies in the area of transfer pricing a real challenge.

6.3.3.1 Precious metals: Some gold and Platinum Group Metals (PGMs) examples

Gold—Given its generally relatively simple metallurgy, gold is generally processed on the mine site down to a crude metallic alloy of gold and silver called dore'. Depending on the type of ore it originates from, the gold content of a dore' bar can be as high as about 95%, but it is generally lower with a median of 65% gold and 35% silver. As a result, prices for doré bars vary significantly, but are generally a function of the various metals content and the refining costs associated with separating these metals to meet set standards of purity.

Doré bars are normally sent to accredited gold refineries, as for instance to the London Bullion Market Association (LBMA), for further refining into gold and silver bars of high purity complying with international bullion market specifications (e.g., 995 and 999 parts per thousand for gold and silver respectively). Refining charges range between $0.50 and $1.50 per gross ounce. Sometimes the dore' is transferred to a related party, often domiciled overseas, which arranges for its refining and marketing of the resulting pure gold and silver bars. To the extent that daily bullion prices are easily obtainable (e.g., LBMA, LME and Kitko databases) and in the absence of having to make excessive adjustments, ascertaining whether these transactions adhere to the arm's length principle should not present insurmountable complexity. Box B.2 describes a typical business structure that may be used in the gold mining industry, and how the UN Manual on Transfer Pricing in Developing Countries views this arrangement.

Box B.3 discusses the cross-border dealings that may occur between related parties in the gold mining sector, using the example of a Southern African country based MNE. Even so, transfer pricing issues often arise in the context of ambiguities in the terms of contracts with related marketing hubs, as discussed in detail in Part A and exemplified in Box B.4 using a case study relating to gold exports presented by a Latin American country representative at an OECD conference held in Paris in 2014.

Platinum Group Metals (PGMs)—The issue of transfer pricing has recently been brought into focus in South Africa as it is alleged that it may be affecting the capacity of certain mines to comply with the Mining Charter[133] for the transformation of the mining sector. This follows the result of an in-depth review of the marketing structure of a PGMs' producer conducted by the South African Mining Development Association (SAMDA) which, in its 2014 'Submission to the Portfolio Committee on Trade and Industry re: Transfer Pricing and Transformation within the Mining Industry', claimed that the shifting of profits due to such practices is affecting and delaying the pace of black economic empowerment (BEE) and the Junior Mining Initiative in South Africa. SAMDA alleges that the foreign outflows impoverish local mining companies to a point were project commitments are scaled back and/or delayed, and the BEE partners in mining companies are deprived of dividends that would otherwise have been directed towards repaying their loans and other funding arrangements. Box B.5 presents the case study submitted by SAMDA to the committee.

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[133]The South African Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) aims, as one of its fundamental principles, to empower Historically Disadvantaged South Africans (HDSAs) who were affected by Apartheid policies. The combination of Charter and Scorecard provides for the empowerment of HDSAs to be meaningful, allowing those who meet the definition to benefit from the mineral and petroleum industries.

Box B.2: Example MNE structure within the gold mining sector

Let us consider the case of a gold MNE which has implemented a business configuration (Figure f), whereby exploration, mining and processing entities (EMP) operate in an African territory, and trading, marketing and sales (TMS) are executed by a hub elsewhere. Both EMP and TMS act as entrepreneurs, employing locally qualified full-time employee equivalents (FTEs) and undertaking/managing major risks. In line with managerial accounting theory they are treated as separate profit centres.

Figure f: Potential business configuration for a gold mining MNE

Blue: Inside an African source country
Black: Elsewhere

To facilitate cost efficiency and economies of scale the MNE made the strategic decision to centralize treasury, insurance and management activities (i.e., headquarter services) at the level of the trading hub. Under this business model, the following primary and secondary activities will take place between EMP and the trading entity:

Primary transactions:

- Transfer of the processed gold from EMP to the trading entity.

Secondary transactions provided by the trading entity for the benefit of EMP:

- Headquarter services,
- Intercompany loan arrangement, and
- Provision of insurance services.

At the time when the processed gold is transferred to the trading company located in Europe, EMP is rewarded through the use of CUP using market prices set on the London Metal Exchange. In line with OECD principles the trading hub acting as a centralized treasury, captive funder/insurer and management service hub should receive arm's length remuneration from all intercompany service recipients, benefiting from the provision of these services. Such intercompany charges may significantly erode the profits reported by the African entities if inappropriately priced. The recent introduction of the BEPS action plan discusses such structured approaches and proposes a higher level of scrutiny.

To safeguard developing countries from base erosion the UN Manual on Transfer Pricing in Developing Countries proposes the introduction of a specified ceiling for these type of intercompany charges. The UN position considers that the synergies created by having access to the "source of gold" (a form of Location Specific Advantage (LSA)) justifies the African group companies involved in EMP activities to claim an additional margin on top of a 'cost plus' price. Alternatively, the African group companies would be able to get an intercompany compensation equal to the higher CUP references in the market, depending on whether the "market price references" are reflecting the "economic substance" and an "equal market proposition" embedded in third parties/exchange prices.

Box B.3: Linking the mining value chain with non-arm's length cross-border arrangements: Illustration of transactions relative to the mining value chain for a Southern African country (SAC)-based gold company (information sourced from the company's 2013 annual report)

Figure g assists with understanding the cross-border dealings between related parties in the context of the mining value chain. For ease of interpretation, red indicates a cross-border transaction. The figure starts (on the left) with the range of activities conducted in each country. From this information one can deduce that, with the exception of the SAC head office company, the subsidiary companies outside SAC look for new properties. New business development is therefore unlikely in SAC and divestment seems to be the strategy. The second part of the chart (i.e., the section relating to the mining value chain) illustrates that the company has capacity across the entire mining value chain, which provides for a situation where there is the potential for several cross-border arm's length and non-arm's length transactions. Inputs at each stage are mostly in the form of capital, services and management, while the outputs are mostly product (gold), profit and either interest or dividend payments. The final purpose of the illustration is to flag 'transactions' within the group that have the potential for profit shifting, especially cross-border. These appear in the red box shaded in yellow. This example involves the following cross-border activities:

- Property acquisitions;
- Fees for services and management;
- Capital provision through debt and equity;
- Payment of interest;
- Mine ownership to access product;
- Marketing and sale of product (gold); and
- Dividend payment to shareholders.

These transactions could then be analysed further to establish the significance of each to the taxpayer's overall multinational business activities by comparative tax analysis of the specific countries involved. Such an exercise would then flag the potential for base erosion and profit shifting (BEPS) for this company.

This information assists with the:

- Determination of comparability, when traditional transaction methods are appropriate; and/or
- Determination of comparability between enterprises, when pricing methods using profit comparisons are appropriate; and/or
- Allocation of the consideration between the enterprises, when a profit split method is applicable.

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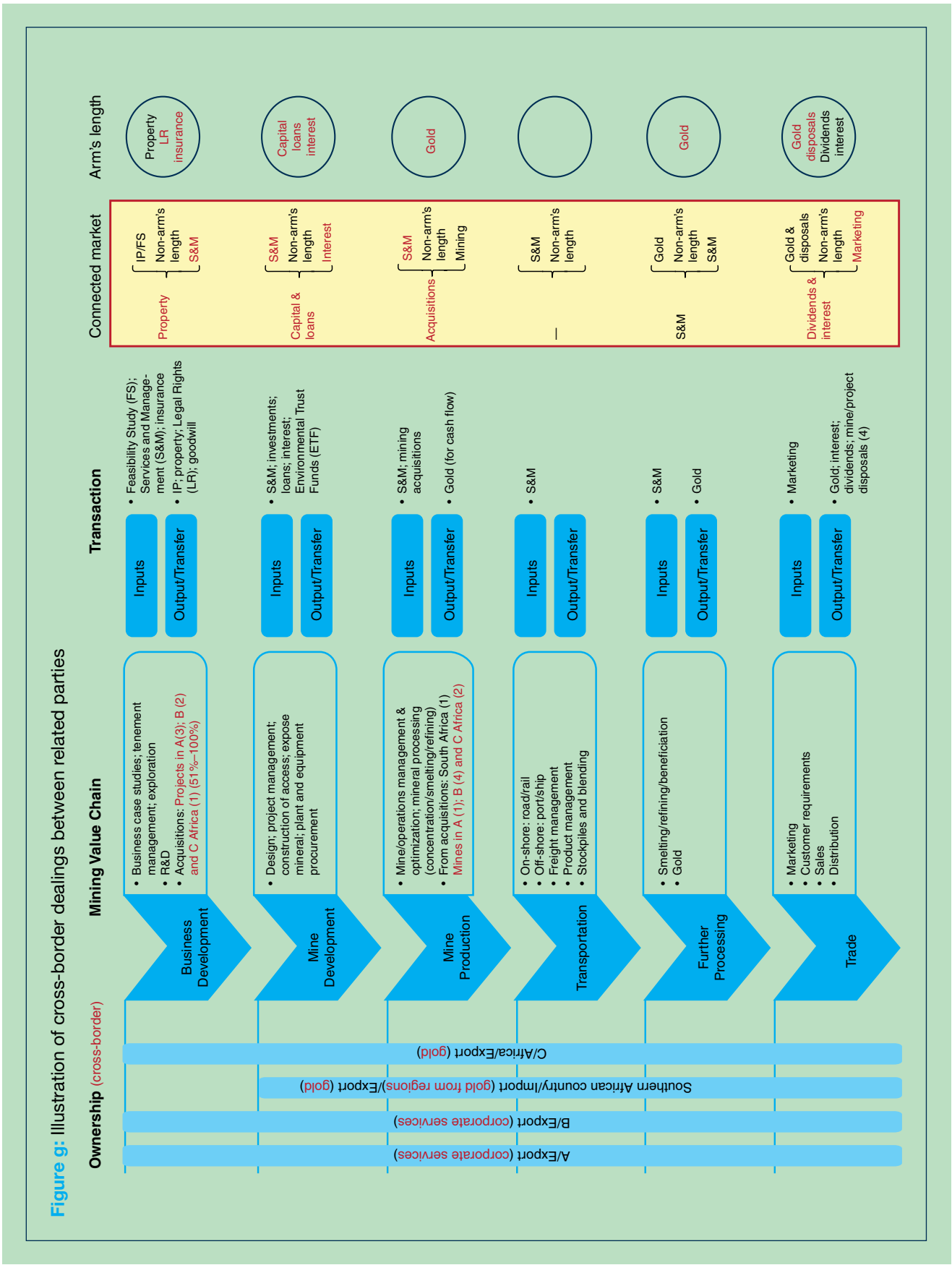
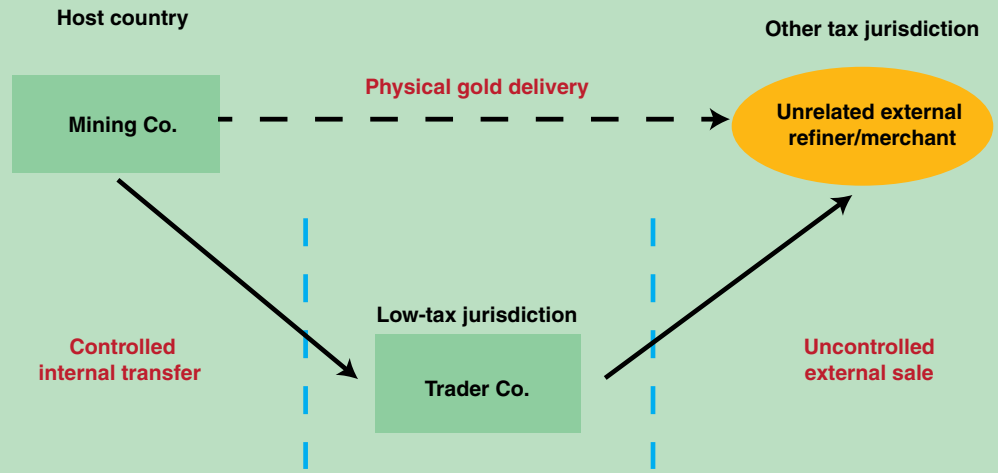


Figure 9: Illustration of cross-border dealings between related parties
Ownership (cross-border)
Mining Value Chain
Transaction
Connected market
Arm's length
A/Export (corporate services)
B/Export (corporate services)
Southern African country/Import (gold from regions)/Export (gold)
C/Africa/Export (gold)
Business Development
• Business case studies; tenement management; exploration
• R&D
• Acquisitions: Projects in A(3); B (2) and C Africa (1) (51%–100%)
Inputs
• Feasibility Study (FS); Services and Management (S&M); insurance
• IP; property; Legal Rights (LR); goodwill
Output/Transfer
Property
IP/FS
Non-arm's length
S&M
Property
LR
insurance
Mine Development
• Design; project management; construction of access; expose mineral; plant and equipment procurement
Inputs
• S&M; investments; loans; interest; Environmental Trust Funds (ETF)
Output/Transfer
Capital & loans
S&M
Non-arm's length
Interest
Capital
loans
interest
Mine Production
• Mine/operations management & optimization; mineral processing (concentration/smelting/refining)
• From acquisitions: South Africa (1) Mines in A (1); B (4) and C Africa (2)
Inputs
• S&M; mining acquisitions
Output/Transfer
• Gold (for cash flow)
Acquisitions
S&M
Non-arm's length
Mining
Gold
Transportation
• On-shore: road/rail
• Off-shore: port/ship
• Freight management
• Product management
• Stockpiles and blending
Inputs
• S&M
Output/Transfer
—
S&M
Non-arm's length
Further Processing
• Smelting/refining/beneficiation
• Gold
Inputs
• S&M
Output/Transfer
• Gold
S&M
Gold
Non-arm's length
S&M
Gold
Trade
• Marketing
• Customer requirements
• Sales
• Distribution
Inputs
• Marketing
Output/Transfer
• Gold; interest; dividends; mine/project disposals (4)
Dividends & interest
Gold & disposals
Non-arm's length
Marketing
Gold
disposals
Dividends
interest

Box B.4: Transfer pricing issues arising from gold exported from Latin America (Modified from SUNAT, 2014)

A Latin American mining company (Mining Co.) markets its gold products through a related trading company (Trader Co.) domiciled in a tax haven (Figure h). The contractual arrangements between Mining Co. and Trader Co. are on the basis of a long-term off-take agreement with prices to be determined for all shipments taking place each month. Pricing is determined with reference to the London pm fix, but the mechanism as how to set within the quotation period is not specified in detail.

Figure h: Typical 'triangular' gold trade pattern



The tax authority of the producing country observed that the contract settlement dates adopted for deliveries in various months appeared to consistently be chosen, as illustrated in Table d, to correspond to the days of lowest London pm fix prices.

Table d: Tendency to settle on days of lowest London pm fix prices for each month

	August	USD	October	USD	December	USD
	01/08/11	1623	03/10/11	1656	01/12/11	1752
	02/08/11	1638	04/10/11	1638	02/12/11	1747
	03/08/11	1669	05/10/11	1617	03/12/11	1744
	.....	.....	.....	.....	.....	.....
	24/08/11	1770	26/10/11	1715	29/12/11	1531
	25/08/11	1729	27/10/11	1718		
	26/08/11	1788	28/10/11	1741		
	27/08/11	1825	29/10/11	1722		
	28/08/11	1814				
Monthly minimum	01/08/11	1623	05/10/11	1617	29/12/11	1531
Agreed price	01/08/11	1623	05/10/11	1617	29/12/11	1531

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Box B.4: (continued)

Clearly this approach to pricing does not represent a CUP and results in tax leakages. The tax authority has been considering a number of alternative approaches including:

- Negotiating an advance pricing agreement (APA), for instance to apply the median of the London pm fix prices for the monthly period or for the price adopted to fall within the first and third quartile. Under these criteria for the month of August 2011, for example an acceptable price would have been US$1765/oz or between US$1677 (Q1) and US$1816/oz (Q3) both of which are significantly higher than the price of US$1623/oz adopted by the company.
- • The 'sixth' method, that is to say adopting the London pm fix price on the day on which the mineral product was loaded ready for shipment. Assuming shipments on 3/8/2011, 18/8/2011 and 26/8/2011, the applicable prices would have been US$1669, 1824 and 1788/oz all of which are once again significantly higher than those adopted by the company.
- The Transactional Net Margin Method was also considered as in Table e.

Table e: Transactional Net Margin Method

Mining Co.	2013
Net sales	268,720
Cost to sell (CS)	145,380
Gross profit	**123,340**
Operagint cost (OC)	61,216
Operating profit (OP)	**62,124**
NCP = OP/(COGS + OC)	**30.07%**

Analysis of historical results indicate that net profit margins (i.e., operating profit on total cost), which in 2013 were around 30%, ranged over recent times between 20% and 60%, with a median of 40%.

6.3.3.2 Base metals: Copper products, pricing and case studies

The transfer or sale of mineral products can take place at various stages of their downstream processing depending upon the commodity. Base metals (e.g., copper, lead, zinc and nickel), depending on the degree of downstream processing undertaken at the mine site, are generally exported and marketed in or close to metallic form (e.g., blister copper,[134] nickel matte,[135] copper cathode,[136] nickel pellets, etc.) or as concentrates. Trading in base metal ores is generally very limited and of a regional nature. As standard market specifications and daily prices are publically available for a diverse range of metallic forms, the closer the mineral product is to refined metal the less complex is the determination of an appropriate transfer price, with the degree of complexity increasing as an inverse function of the degree of downstream processing undertaken (e.g., from concentrates to metallic forms).

[134]An unrefined, intermediate product, for which price is a function of copper content and refining cost if further refining is required. Copper content is usually about 98% by mass.

[135]An unrefined, intermediate product, for which price is a function of nickel content and refining cost. Nickel content varies, but is usually in the range of 60–85% by mass.

[136]Refined copper, i.e., meets minimum purity requirements and the price is set in the international market.

Box B.5: Analysis of the transfer pricing practices of an unnamed South African Platinum Group Metals producer (Modified after SAMDA, 2014)

As shown in Figure i, a foreign investor (Head Co.) controls two PGMs mines in South Africa through a local subsidiary (Holding Co.). This subsidiary holds 70% and 60% equity in each of them with the remainder held by a BEE partner (BEE Co.) which purchased shares in the mines. The foreign investor also registered and holds 100% equity in an offshore trading company (Trader Co.) to market the commodities from the two mines. BEE Co., however, is not a shareholder in Trading Co.

The minerals produced are priced by international buyers/traders and sellers at a South African harbour on a FOB basis, determining their "Spot Export Market Price."

Under the influence of the holding Head Co. the mines entered into a marketing agreement to transfer their product to the foreign-owned Trading Co. at a 7% discount to the "Spot Export Market Price," which the Trading Co. claims is an appropriate margin for the marketing and trading services rendered. In addition, occasionally Holding Co. derives a further margin by selling the commodity to end users at a price higher than the "Spot Market Price." This marketing arrangement, it is claimed, has had the effect on many instances of leaving the mines with minimal profits, which reduced dividends to the BEE Co. and prevented it from repaying the loans it entered into to buy its share of the mines.

The BEE Co. commissioned an audit of the Trading Co. to assess whether the allocation of income to it was at arm's length. The final audit report revealed that a discount of between 2% and 3% should have been sufficient to cover all fixed and variable costs, including a reasonable return associated with the services provided, assets used and the risk borne by Trading Co. Implementation of the recommendations of this audit is currently being considered.

Figure i: Ownership structure of platinum group metals producer

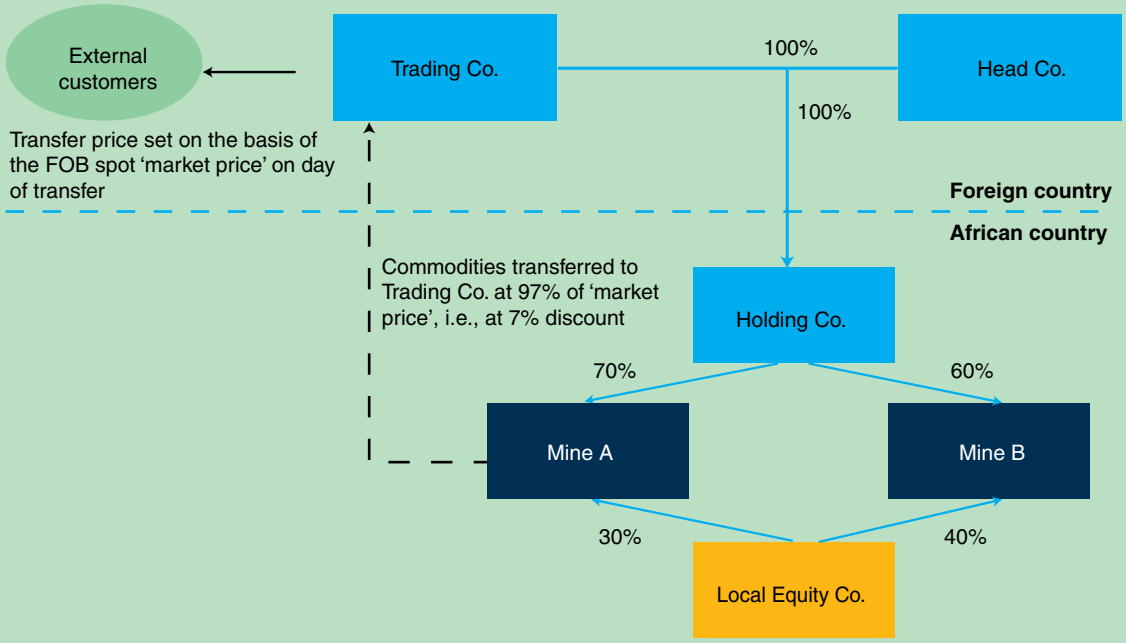


Table B.9: Proportion of newly mined copper products (Modified from de Sousa, 2010)

Copper Product	Percentage of Newly Mined Copper
Custom concentrates	41.4%
Nickel-copper concentrates & others	1.6%
Integrated concentrates	27%
EW copper cathode	30%
Total	100%

Of the total new copper produced by mines, as shown in Table B.9, concentrates represent the vast majority of the products. "Custom" concentrates sold to unrelated smelters/refiners account for 43% of all copper produced, while "integrated" concentrates transferred to related smelters/refiners account for around 36%. The latter will be transformed by downstream processing into various products (e.g., blister copper, cathode, etc.) and sold into contestable markets.

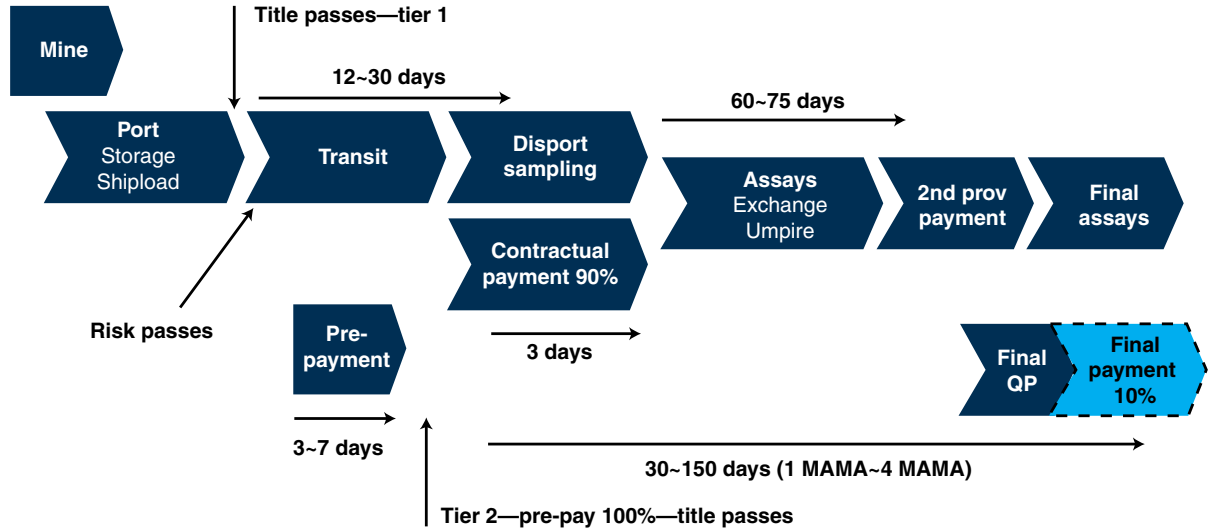
Concentrates are partially processed mineral products, for which no standard market specifications or regular daily prices are available. They are sold primarily on the basis of long-term ('frame') smelting and refining contracts between the mines and smelters/refiners, or merchants, but subordinately through merchants using spot sales. A discussion about the typical terms of an off-take contract for copper concentrate has already been provided in Part A, and an example of an actual contract provided in Appendix A.3.

As already discussed, charges in treatment/smelting and refining (TC/RC) contracts are based on formulas that are broadly accepted and practiced in industry. The terms of treatment and refining (TC/RC) contracts, which are generally fixed over the life of the contract, include a quotation period and a price reference period, which is generally the average of the LME cash settlement price over a single month anchored to the time of shipment or arrival. This is known as the MAMA (month after the month of arrival) system of payment. Sometimes averaging may be carried out over more than one month or options and back pricing may be granted to buyers. Price references are normally the LME and the London Bullion Market as quoted in the reference publications (e.g., Platt's and Metal Bulletin). Contracts also specify the timing of payment and related applicable interest.

An example flow chart of typical copper concentrate sales is provided in Figure B.1, reproduced from de Sousa (2010). Under long-established sales contracts to credit-worthy customers (Tier 1), all sales are provisionally priced and title passes at the time of shipment. A first provisional payment covering the bulk (90%) of the value of the concentrate is effected in transit prior to delivery with a second provisional payment covering the balance (10%) after assaying is carried out at the smelter. For Tier 2 sales, 100% payment is expected soon after the concentrate leaves port. The final price is then adjusted under the MAMA pricing system, based on the London Metal Exchange (LME) quoted prices, leading to a final reconciliation.

Of course, this type of commercial arrangement makes comparability analysis of the transfer of concentrates to related parties, in the absence of direct access to sales invoices, somewhat complex. However, the fact that the price of the metals contained in the concentrates are quoted daily in terminal markets like the LME, enables tax authorities to estimate a robust arm's length price approximation using the Net Smelter Return (NSR) formula traditionally applied by the mining industry to set concentrates prices. The NSR formula can be used to estimate the price paid by an unrelated "customer" smelter/refiner to the miner at various points of delivery, e.g., CIF smelter or, by excluding transport and insurance costs incurred to convey the concentrate from the mine site to the smelter, FOB port of export or at the mine gate. The NSR includes:

Figure B.1: Example flow chart of a typical copper concentrate sale as part of a long-term contract (Reproduced from de Sousa, 2010)



- The value of the key base metal contained in the concentrate net of the smelter's unit deduction, smelting and refining (TC/RC) charges and price participation as set in the smelting and refining agreement. The terms of smelting/refining agreements relating to the main metal components of most common concentrates are pretty much standard throughout the industry. The net smelter payment as a proportion of the value of the contained metal(s) will vary for concentrates of different mineral commodities and within each commodity for different types, grades and metallurgical quality of concentrates. Table B.10 provides some order of magnitude of typical NSRs for various base metals concentrates as a percentage of the value of the main metal contained in the concentrate. These rates of payment do not include the effect due to the possible presence of credits and penalty metals, which is discussed in detail below.
- Credit payments for other payable, often precious metals (e.g., gold, silver, PGMs, etc.), net of their processing charges. As long as the tax authority has been vigilant in terms of validating the chemical assays of concentrate shipments this component should be able to be estimated with a sufficient degree of accuracy. Table B.11 (AusIMM, 2013) provides an indication of the likely payments and processing charges for precious metals commonly found in copper concentrates.

Table B.10: Typical ranges of grades of base metals sulphides concentrates and approximate smelter payments as a percentage of the value of the contained metal(s)

Metal	Typical Grade of Sulphide Concentrate %	Approximate Smelter Payment as % of Value of Contained Metal
Cu	22% to 30%[a]	72% to 80%
Pb	45% to 70%	45% to 60%
Zn	48% to 56%	52% to 56%
Ni	9% to 14%	65% to 75%[b]

[a]Primarily from chalcopyrite. Higher concentrates grades may be obtained from some secondary copper minerals.

[b]Payments in the range of 50% to 65% may apply in the case of significant impurities and some long-term contracts.

Table B.11: Example of precious metals credits and processing charges relating to copper concentrates (Source AusIMM, 2013)

Metal	Refining Charge	Payable Metal
Gold	US$3 to 7 per payable ounce	90% for <3g/dmt 94% for <5g/dmt 95% for <10 g/dmt 96% for <15 g/dmt 96.5% for <20 g/dmt 97% for <30 g/dmt 98% for <50 g/dmt 98.25% for >50 g/dmt, with no minimum deduction
Silver	US$0.3 to 0.4 per payable ounce	90% subject to a 10 to 20 g/dmt deduction

- Discounts for penalty metals and other deleterious elements that may be present in the concentrates. Penalties are applied when the level of individual metals exceed specified acceptable thresholds, thus increasing smelting costs as shown for various nonprecious metals commonly found in copper concentrates in Table B.12 (AusIMM,2013).

Box B.6 provides an example of how the arm's length price for a copper concentrate can be calculated. From this example it is clear that tax authorities should have not only a good understanding of smelting and refining contracts, but should also monitor the detailed chemical composition of various shipments of concentrates.

The calculation in this example includes a price participation component (PP), which at current copper prices would represent a significant proportion of the total smelting and refining charges. With recent increases in the price of copper well beyond the neutral US$0.8 to 0.9/lb, many have complained that these charges have become unreasonably high and in many instances PP conditions have been renegotiated or even removed. In the final analysis, the level of TC/RC and the applicability and extent of PP conditions are determined by the relative bargaining powers of the miners and the smelters/refiners that depend on the availability of good quality concentrates and/or tightening smelting capacity respectively.

Box B.7 discusses the case of a copper-cobalt mine in an African country, where in 2008 the tax authority of the host country commissioned a preliminary audit due to concerns over the continued low profitability of the mining operations. This case study shows how relatively easy it is to raise allegations of transfer pricing abuse, but how difficult it may become to prove them.

Table B.12: Example of penalty metals deductions for various nonprecious metals commonly found in copper concentrates (Source AusIMM, 2013)

Metal	Threshold (ppm/dmt)	Penalty
Arsenic	2,000	US$2 per 1000 ppm
Fluorine	330	US$1 per 100 ppm
Lead	10,000	US$1.50 per 10000 ppm
Zinc	30,000	US$1.50 per 30000 ppm
Mercury	10	US$0.20 per 1 ppm
Bismuth	500	US$2.00 per 100 ppm
Antimony	1,000	US$0.50 per 100 ppm

Box B.6: Example of calculation of Net Smelter Return for a copper concentrate

Table f displays how the Net Smelter Return (NSR) is calculated for a copper concentrate with a grade of 29% Cu carrying gold and silver concentrations of 29 and 60 grams per dry metric tonne (g/dmt) respectively given commodity prices that were current at the time of writing. The concentrate also carries potentially deleterious elements (e.g., arsenic, fluorine, bismuth, lead, zinc and mercury), some of which in concentrations above acceptable thresholds (see Table B.12) trigger the application of penalties.

The calculation is done in stages. First, the Net Smelter Value for the Cu content (NSV(Cu)) is calculated using a broadly accepted industry formula which is displayed at the top of Table f. Then the values of credits (C) and penalties (PN) are calculated using the parameters provided in Tables B.11 and B.12. Finally, the Net Smelter Return at the smelter (NSR(SM)) is obtained by adding these to the net value of copper. The Net Smelter Return at the mine (NSR(MI)) is then calculated making the assumption that the mine is located 300 Km inland from the port of export and that the concentrate must be shipped to an overseas smelter.

Table f: Calculation of Net Smelter Return (NSR) from the sale of copper concentrate

Assumptions **Net Smelter Return (NSR) (at smelter) = [(M − D) ∗ (P − R)/100 − T − PP + C − PN**		
M = Grade of concentrate (Cu %)	29.0%	
D = Unit deduction Cu (%)	1.1%	
P = Metal price (US$/t Cu)	6500	
R = Refined charge (UR$/lb of payable metal)	0.092	
T = Treatment charge (S/t of concentrate)	92	
Pp = Price participation rate e.g., +10% of price above $0.9/lb or −10% of price below $0.80/lb	0.1	
CF = Conversion factor lb to Kg	0.4536	
G = Gross value of Cu in concentrate (US$)	**1885**	= M ∗ P
Less:		
Unit deduction charge	−71.5	= D ∗ P
T = Treatment charge	−92.0	= T
RC = Refining charge	−56.6	= (((M − D) ∗ 1000)/CF) ∗ R
PP = Price participation charge	−181.4	= (−Pp ∗ ((M − D)/CF ∗ 1000) ∗ (P/(CF ∗ 1000))
NSV (Cu) = Net Smelter Value of Cu at smelter (US$)	**1483.6**	= G − (D ∗ P) − T − RC − PP
Credit metals (refer to text)		
Gold (g/dmt)	29.0	
Percentage payable	97%	
Price US$/oz.	1200.0	
Refining charge US$/payable oz.	4.0	
Gold credits US$	**1081.6**	
Silver (g/dmt)	60.0	
Percentage payable	90%	
Price US/oz.	16.0	
Refining charge US/payable oz.	0.4	
Silver credits US$	**27.0**	
C = Total credits US$	**1108.6**	
Penalty metals (refer to text)		
Arsenic (ppm)	3500.0	
Arsenic penalty US$	3.0	
Fluorine (ppm)	600.0	
Fluorine penalty US$	2.7	
Lead (%)	4.0%	
Lead penalty US$	3	
Zinc (%)	5.5%	
Zinc penalty US$	3.75	

Box continues on next page

Box B.6: (continued)

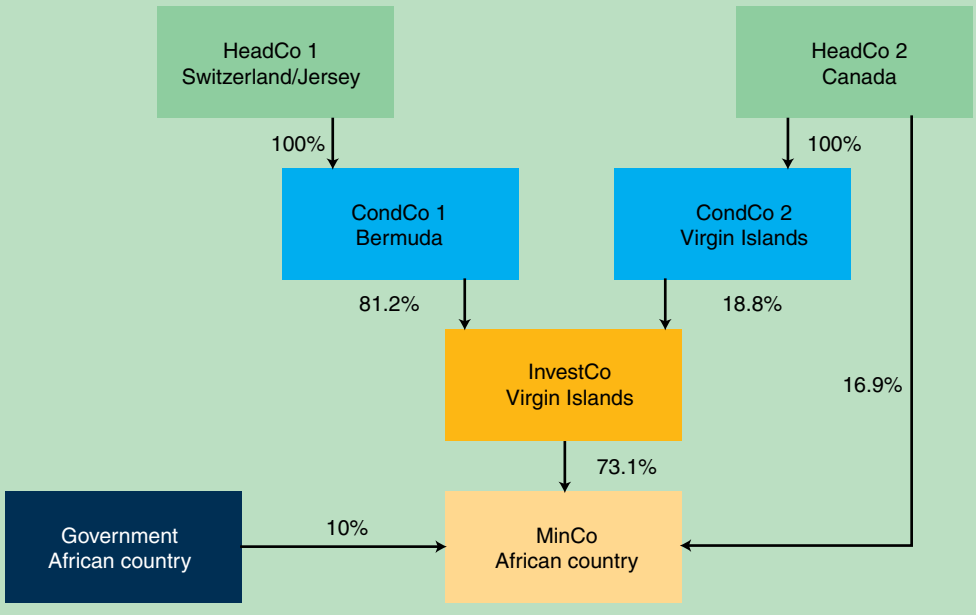
Table f: (continued)

Mercury (ppm)	9.0		
Mercury penalty US$	0.0		
PN = Total Metals Penalty US$	**12.5**		
NSR (SM) = Net Smelter Return at smelter (US$)	**2579.7**	=	NSV(Cu) + C − Pn
K = Distance mine to port (Km)	300		
W = Moisture % by weight	0.08		
TR = Railing/trucking costs (US$/tKm)	0.09		
S = Sea freight including port, loading and insurance (US$/t)	47		
Less:			
TRC = Railing/trucking cost	−27	=	K * TR
S = Sea freight	−47	=	S
NSR (MI) = Net Smelter Return at mine (US$)	**2499.7**	=	NSR(SM) + (TRC + S) * (1 + W)

Box B.7: Large African copper-cobalt mine

MinCo is a large producer of copper and cobalt registered in Africa. Figure j shows how 73.1% of the company is owned by InvestCo registered in the British Virgin Islands, 16.9% by a Canadian company (HeadCo 2) and 10% by the state-owned company GovCo. Furthermore, InvestCo is 81.2% owned by the Bermuda-based conduit company CondCo 1, a wholly owned subsidiary of a major International Trading company (HeadCo 1) registered in Baar, Switzerland, with the remaining 18.8% owned by HeadCo 2 through its 100% subsidiary CondCo 2 registered in the British Virgin Islands.

Figure j: Ownership structure of MinCo



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Box B.7: (continued)

In 2008, concerned at the consistently low levels of profitability and tax paid by copper miners and by MinCo in particular, an African tax authority commissioned a consultant to carry out a pilot audit of its operations. The audit report, completed in 2010, indicated that anomalously high increases in costs had over recent years occurred at MinCo that were hard to justify on the basis of broader industry comparisons. These involved labour, fuel, mining, insurance, security and safety, spares, administration and freight costs. The audit also cast some doubts on the appropriateness of volumes and transfer prices applicable to transfers of copper to related parties, which did not appear to comply with the arm's length principle as well as on some relevant hedging arrangements. All these transactions it was alleged pointed to potentially significant proportions of profits having been shifted from the African country to HeadCo 1's and HeadCo 2's subsidiaries registered in the low-tax jurisdictions of Bermuda and of the Virgin Islands.

The auditors also complained about the reluctance of the company to cooperate in the audit and to produce relevant documentation in a timely manner and its general quality.

The report led to ongoing audit and negotiations between MinCo and the tax authority. Through the intervention of a group of NGOs, the MinCo case was also brought to the attention of the OECD which indicated that the matters raised were relevant to Chapters II and X of the OECD Guidelines and deserved further consideration on a non-prejudicial basis, offering to facilitate a dialogue between the parties with the aim to reach a mutually acceptable outcome. In an ensuing meeting the parties exchanged information and reached some mutual understanding of the issues at hand and an undertaking to engage in further dialogue to resolve them. On this basis and conscious of the nonjudicial parallel proceedings being undertaken by the tax authority, the OECD recommended that the parties continue their constructive exchanges on their own and that the enterprise deepens its future engagement with all stakeholders including NGOs.

The case is interesting in that it emphasises how relatively easy it is to raise allegations of transfer pricing abuse but how difficult it may become to prove them. This is in spite of the fact that the government as a shareholder of the company would have had access to some relevant information. The case also highlights how difficult it is to get relevant reliable information involving transactions with parties in foreign jurisdictions unless there is goodwill on the side of all parties involved. The MinCo experience would suggest that the best approach is prevention rather than cure. This would involve transparent and continuous communication between the mining enterprise and the tax authority, with systematic collection and progressive analysis of relevant information leading to the early detection and potential prevention of inappropriate transfer pricing practices as well as to a solid basis for the possible establishment of safe harbours and/or advance pricing agreements where appropriate. The case also emphasises the importance of strengthening the communication and negotiation skills of senior tax administration officers to enhance prevention and minimise litigation.

Potential credit payments and discounts for penalty elements are a function of their respective contents in individual concentrate shipments, which makes them difficult to verify and audit. This is particularly the case when assessing the NSR of "dirty" concentrates, particularly lead and zinc concentrates, which may represent a very low proportion of the value of the main base metals contained in the concentrates. In some extreme cases, these types of concentrates may not be capable of being sold at all to an unrelated party. As a consequence, dirty concentrates are often sold at very heavy discounts to, often related, buyers that use them for blending with high-quality concentrates, thus realising some of the value of the metals contained in them.

Smelters have traditionally paid 85% of the value of contained zinc based on the average LME cash settlement price using the MAMA system, but individual contracts may include other difficult to audit complex conditions. In the case of lead, payment is typically 95% of the value of the metal contained in the concentrate subject to a minimum deduction of 3 units. Tables B.13 and B.14 (modified from AusIMM, 2013) provide typical penalty payments for zinc and lead sulphide concentrates respectively.

Eighty-nine percent of the value of the contained metal is payable in the case of nickel sulphide concentrates, with penalties applying for elements such as MgO (i.e., US$4/1%) and arsenic (i.e., US$0.72/10 ppm) when in excess of 5% and 200 ppm respectively. Most smelters will not accept concentrates with MgO contents in excess of 7% because of the requirement to use very high

Table B.13: Example of penalty metals deductions for deleterious metals commonly found in zinc concentrates (Modified from AusIMM, 2013)

Metal	Threshold (%)	Penalty
Arsenic	0.2%	Up to US$2/1%
Magnesium	0.3%	US$1.5/0.1%
Mercury	50 ppm	US$2/10 ppm
Iron	8%	US$1.5/1%
Manganese	0.5%	US$1.5/0.1%

Table B.14: Example of penalty metals deductions for deleterious metals commonly found in lead concentrates (Modified from AusIMM, 2013)

Metal	Threshold (% or ppm)	Penalty
Arsenic	0.5%	US$3/0.1%
Mercury	30 ppm	US$1/10 ppm
Antimony	0.1%	US$3/0.1%
Bismuth	0.03%	US$2/0.01%

temperatures in the smelting process to reduce deleterious slag formation and place a premium on the price of low MgO concentrates that are used for blending with high-magnesium ones of other provenance. MgO premiums tend to be negotiated on a case-by-case basis, and as a consequence, may become more difficult to estimate and audit.

6.3.3.3 Iron ore products, pricing and case studies

Iron ore is sold as a number of products ranging from crude crushed and screened hematite-goethite-(limonite) ore, the so-called direct shipping ore (DSO), to beneficiated and blended ore, to (mostly magnetite) concentrates, pellets, sinters and briquettes. DSO is further classified physically into either lump (i.e., with a size greater than 6.3 mm and less than 31.5 mm) or fines (less than 6.3 mm).

In the past, high-grade (>60% Fe) hard lump hematite ore with low levels of impurities was sold at a 20% to 30% premium relative to fines of equivalent chemical composition. However, with changes in the operation of blast furnaces, this premium has now reduced to less than 10%. Channel iron deposits (CIDs) often occurring in the form of small spherical goethite particles called pisolites are generally of lower grade (around 54% Fe) but reasonably sought after because of their sintering qualities.

Aside from the iron content, iron ore prices are influenced by the chemical composition of the ore in terms of impurities, such as phosphorus (P), which should be below 0.12% and ideally lower than 0.08%, aluminium oxide (Al_2O_3), which should be less than 3.5% and ideally less than 2.5% and relatively low contents of silica (SiO_2), sulphur (S) and moisture.

In the past, iron ore has been sold on the basis of yearly supply contracts using benchmark prices set by the first successful annual negotiation between a major producer and steel mill, with the agreed price generally being accepted for that year by all other major iron ore producers. An active

spot market has, however, been developing over the past few years and a forward market is also now progressively developing.

Although annual contracts are still common, prices are generally set on the basis of shorter quotation periods within them (e.g., 3 monthly), and a trend has also been developing to base sales on increasingly shorter-term (quarterly or monthly) contracts covering a number of shipments or spot sales. Contract prices, expressed as US$/dry metric tonne or per unit of iron, are generally set as the mean of the daily spot market prices over the preceding one to three months based on a number of price indices which are quoted daily. Indices for ores of standard specifications (e.g., Platt's IONEX or the Metal Bulletin's MBIOI index) have been developed for a variety of iron ore fines with Fe grades ranging between 58% and 65% Fe and with specified normalised levels of P_2O_5, Al_2O_3, SiO_2, S and other impurities, delivered on a CFR basis to main Chinese destinations (e.g., Tianjin or Qingdao). Increasingly prices are being stabilized by the use of over-the-counter iron ore swaps.

To the extent that the ore sold or transferred may be of a different iron grade from that of the indices used, proportional price adjustments are made on the basis of differences in the contained unit of iron per dry metric tonne. Databases containing most of the necessary information relating to iron ore and other bulk commodities relevant to the African context are readily available (e.g., Platt and Metal Bulletin), albeit at a price.

Determination of an appropriate TP to cover the transfer of iron ore to a related steel mill is relatively simple if the iron ore producer is also selling iron ore directly to other unrelated steel mills, as shown in Box B.8. The price obtained on these open market sales for essentially ore of equal quality provides an excellent and defensible range of internal comparables within which to place the needed TP, after making comparability adjustments for possible differences in sea freight and

Box B.8: Example of use of internal comparables to set the transfer price for iron ore

Mining Company A transfers crushed and screened iron ore to an overseas related Steel Mill Co. B, which is part of the same NME group. It also sells identical iron ore under contract to an unrelated Steel Mill Co. C and spot to an unrelated Steel Mill Co. D in the same or different overseas countries (see Figure k). The prices realized in the arm's length sale of iron ore to the unrelated steel mills represent a very good basis from which to derive a reliable internal CUP, subject to adjustments.

If the terms of the transfer and the sales are essentially the same (say a series of deliveries on a cost and freight (CFR) basis over the same contract time interval), adjustments would primarily relate to differences in the:

- Sea freight related charges,
- Shipping distance, and
- Insurance costs if applicable.

If the contract time interval is different and/or some of the sales are spot then a need will also arise to adjust for price changes over the different times of delivery. This may create a range of possible CUPs, and criteria must be established as to where within this range should an appropriate transfer price be selected. A possible approach is to make use of the median spot price over the period in question or allowing a price to be set within, for instance the inter-quartile range.

If, for example, the reference period were the three months between June and September 2012, during which the iron ore price suffered significant falls (see Figure l), an acceptable transfer price for iron ore conforming to Platt's IODEX specifications could have been US$113/t if using the median or a price between US$102/t and US$124/t if using the inter-quartile safe harbour method.

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Box B.8: (continued)

Figure k: Example sale for the calculation of comparables

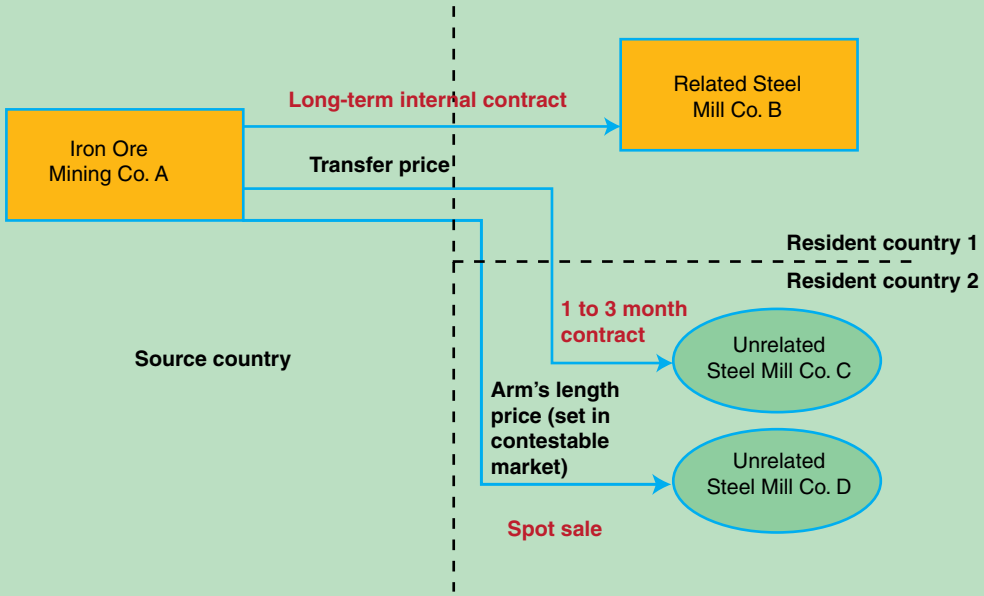
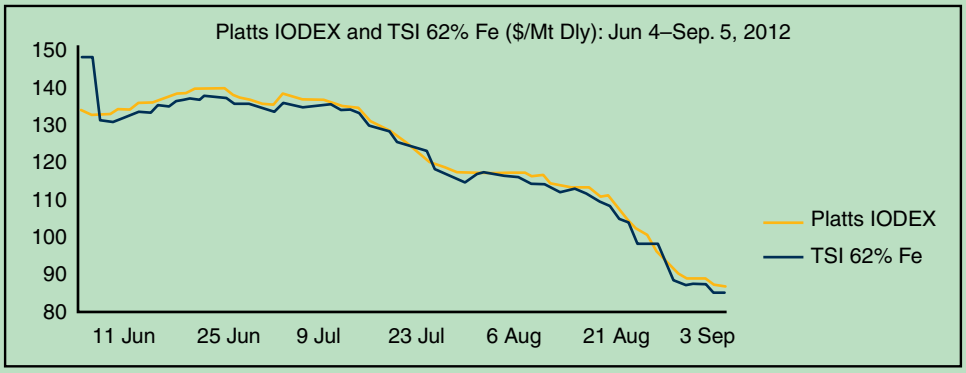


Figure l: Daily spot prices for iron ore 62% Fe fines (CFR Tianjin) as captured by Platts IODEX and TSI 62% indices (Reproduced from Platts.com News & Pricing Feature)



Source: Platts, TSI

insurance costs due to the different location of the related steel mill relative to the unrelated one(s). While sea freight services are invariably offered by unrelated third parties, insurance services, as already discussed, may be captive.

The situation would be more complex if the producer transferred all of its iron ore to a related marketing hub or, less frequently, to a related steel mill. As discussed in Part A, use of marketing hubs to handle iron ore sales has become widespread, as is the case for Australian producers, which have established significant marketing hubs in Singapore to be closer to customers and shipping facilities, and to take advantage of specially negotiated tax incentives.

Box B.9: Example of calculation of CFR and FOB arm's length approximations for 57% Fe iron ore exports from Australia to China

Figure m: Example CFR calculation

Assumptions						
G = Grade of iron ore fines (Fe %)					57.0%	
RG = Reference Fe grade MBIOI-58% index					58.0%	
MBIOI-58% index (landed Quingdao) iron ore price US$/dmt					57.82	
Less:						
L = Proportional low grade adjustment					0.0172	= (RG − G)/RG
D = Impurities discounts	Agreed	Max.	Actual	Adjustment $/unit		
P	0.08%	0.15%	0.12%	$0.10	$0.40	
S	0.06%	0.10%	NA	$0.10		
A_2I_3	3%	5.00%	4.00%	$1.64	$1.64	
SiO_2	6.50%	8.00%	NA	$1.64		
CFR price for 57% Fe ore (landed Quingdao) US$/dmt					**54.78**	= (MBIOI ∗ (1 − L) − D
M = Moisture % by weight					8.0%	
S = Sea freight charges (US$/t) (from Platt's)					9	
FOB (US$) price for 57% Fe ore (on board Port Headland) US$/t				**US$**	**45.06**	= CFR − S ∗ (1 + M)
X = Exchange rate A$ = US$					0.82	
FOB price for 57% Fe ore (on board Port Headland) A$/t*				**A$**	**54.96**	= FOB(US$)/X

*This is the value on which the Western Australian Government applies a 7.5% ad valorem mineral royalty

In the absence of a sale to a third party in a contestable market, a robust arm's length price approximation can be estimated by adjusting an appropriate price index (e.g., the MBIOI—58% CFR Qingdao) applicable over the quotation period proportionally for any difference in iron grade, and by applying penalty discounts if any of the undesirable elements exceeds standard limits. This process is illustrated in Box B.9, which estimates an arm's length price approximation for iron ore fines with a grade of 57% Fe (i.e., 1% below the 58% Fe of the index) and levels of P at 0.12% and Al_2O_3 at 4%, which are on the high side of their respective allowable levels of <= 0.08% and <= 3% respectively. These discounts are consistent with those set in the example of a typical spot sales contract provided in Part A.

Sometimes impurities in iron ore and in base metal concentrates exceed the maximum allowable ranges and may render the concentrate unsellable, or sellable at very high discounts, often only to related users, who can realise the value of their key metal content by blending the 'dirty' concentrate with better quality material of different origin. Determining whether the level of quality discount applied complies with the arm's length principle may then become very challenging if the blending occurs after transfer to an overseas related party. Of course, no such problem arises if the miner carries out blending of substandard ore/concentrates as part of their domestic operations upstream of their being loaded on a ship for export.

As well as showing an arm's length price approximation CFR Qingdao, Box B.9 also displays the equivalent iron ore price FOB the port of export (in this example Port Hedland, Western Australia). This, incidentally, when converted to Australian dollars, is the 'royalty value' base on which a 7.5% *ad valorem* mineral royalty is levied by the Government of Western Australia. Of course, state mineral royalties, which are based on revenue after allowing for a relatively limited number of generally easy to audit deductions, are exposed to a much lower risk than the corresponding corporate income

Box B.10: Extract from the Iron Ore (Hamersley Range) Agreement Act, 1963

It is remarkable that the following definition of the term "f.o.b. value" is a 1990 amendment of this Act that was drafted over 51 years ago, i.e., 46 years before the establishment of marketing hubs in Singapore, at a time when iron ore was marketed on the basis of annual benchmark prices being negotiated with the steel mills by one of the major suppliers and then adopted by all the others and long before transfer pricing started to emerge as a serious global taxation issue.

"f.o.b. value" means—

(i) in the case of iron ore shipped and sold by the Company, the price which is payable for the iron ore by the purchaser thereof to the Company or an associated company or, where the Minister considers, following advice from the appropriate Government department, that the price payable in respect of the iron ore does not represent a fair and reasonable market value for that type of iron ore assessed at an arm's length basis, such amount as is agreed or determined as representing such a fair and reasonable market value, less all export duties and export taxes payable to the Commonwealth on the export of the iron ore and all costs and charges properly incurred and payable by the Company from the time the iron ore shall be placed on ship at the Company's wharf to the time the same is delivered and accepted by the purchaser including:

  (1) ocean freight;

  (2) marine insurance;

  (3) port and handling charges at the port of discharge;

  (4) all costs properly incurred in delivering the iron ore from port of discharge to the smelter and evidenced by relevant invoices;

  (5) all weighing sampling assaying inspection and representation costs;

  (6) all shipping agency charges after loading on and departure of ship from the Company's wharf;

  (7) all import taxes by the country of the port of discharge; and

  (8) such other costs and charges as the Minister may in his discretion consider reasonable in respect of any shipment or sale;

(ii) in all other cases, the deemed f.o.b. value.

By specifically referring to sales conducted by the company or an associated company, and in light of the Minister's powers of determination and of the company's obligation to ". . . to use their best endeavours to obtain therefor the best price possible having regard to market conditions from time to time prevailing . . . ," any opportunity for mispricing of iron ore is severely restricted in the context of mineral royalties.

Furthermore these conditions imply that the royalty-collecting authority should be given ready access to the related sales invoices and that, failing this, the f.o.b. value may be determined by other means.

tax, even though minerals may have been transferred to a related marketing subsidiary of a MNE, and only subsequently sold by it to a third party. Risk to royalty revenue may be lowered by drafting the related development agreements clearly in terms of how the 'FOB value', to which the royalty rate is applied, is defined in terms of the revenue realised through the first arm's length sale to an unrelated third party, either by the mining company or by an associated company, less specified allowable deductions. The contractual obligation placed on the mining company and by reflection on its MNE parent help circumvent the difficulty in obtaining information about sales conducted by related marketing hubs in foreign jurisdictions, which may not be obtainable when enforcing the powers under domestic tax laws in the absence of a relevant exchange of information (EOI) agreement. Box B.10 provides an example of the 'FOB value' definition contained in the State Agreement Act covering the development of one of the first large Western Australian iron ore projects.

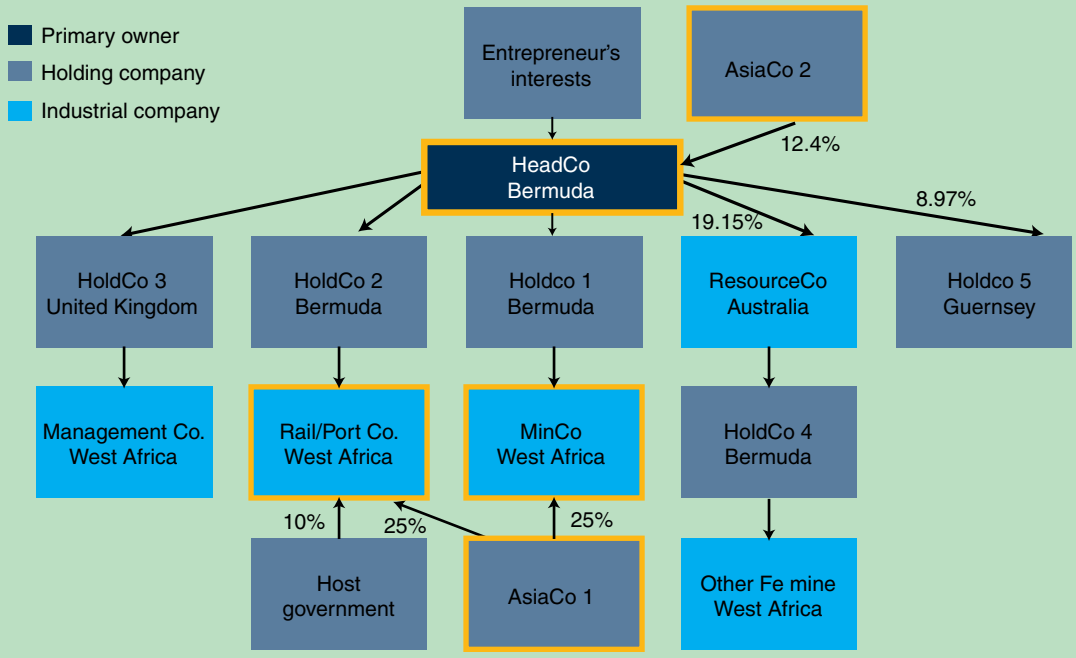
Alternatively, as in the case of a major iron ore mine (see Box B.11) located in West Africa, related parties that buy its iron ore may also have under the terms of their off-take contracts the right to market that iron ore to third parties and to charge a substantial fee for their marketing services.

Box B.11: Large West African iron ore mine

MinCo is a large-scale iron ore open pit mining, railing and port operation located in a West African country. Although production from this world-class resource has been recently suspended because of low iron ore prices, the project has commissioned capacity of around 20 Mt of ore per annum including direct shipping ore with a grade of 57.7% iron, low silica but relatively high Al_2O_3 and moisture.

A study conducted by Dan Watch (Dieckmannn, 2011)[a] has raised doubts about the amount of taxes paid by and the transfer pricing practices of MinCo and related companies. Figure n shows how its operating mining (MinCo) and railing/port (Rail/portCo) companies are held by conduit companies, primarily owned by HeadCo all registered in Bermuda. HeadCo in turn is owned by various companies largely under the control of an individual entrepreneur who is credited with having facilitated the establishment and funding of this mining project. The major Asian steel group (AsiaCo 1) also holds 25% equity in both of the operating companies, with the local government holding 10% equity in the Rail/portCo only. By being a major shareholder in HeadCo, another major related Asian railway and materials company (AsiaCo 2) has also a significant indirect ownership in MinCo's operations and is classified as a related entity.

Figure n: Major ownership and business structure of the West African MinCo's operations (Modified from Dieckmann, 2011)



HeadCo's report for the first half of 2014 shows a significant number of related party transactions having taken place particularly in the area of:

- Iron ore sales prices—AsiaCo 1, AsiaCo 2 and HeadCo and others have off-take agreements for significant annual tonnages of iron ore, which in fact the mine has been unable to fully satisfy resulting in multi-million-dollars liquidated damages for breach of warranties. Of the 8.9 wet Mt of ore sold in the first half of 2014, 48% went to AsiaCo 1 and 24.0% to AsiaCo 2, with the rest sold to other parties. Sales were priced with reference to the Platts' 58% IODEX Index subject to impurities and other customers' discounts. The AsiaCo 1's off-take agreement includes an investors' discounts over the life of the mine ranging between 0% and 15% as a function of iron ore prices, as shown in Table g. As this and some of the other customers' discounts are in addition to the normal industry discounts for low grade and high alumina (about $9/t) and of up to $5/t in de-sliming costs (soon to be carried out at the mine site) and do not include a premium for

Box continues on next page

Box B.11: (continued)

low silica, the relevant sales prices do not strictly comply with the arm's length principle. AsiaCo 1's 'most favoured treatment' reflects the critical foundation contribution they made to the development of the project including the 2012 commitment to purchasing 25% equity in it for $1.5 billion. Over the first 6 months of 2014 customers' discounts other than for impurities and processing charges ($93.7M) were around $17M reducing the company's income taxable and mineral royalties payable to the local government. It is fair to say, however, that HeadCo has been trying to renegotiate to reduce or ideally eliminate these discounts.

Table g: Calculation of investor's discount

Iron Ore Price (US$/t)	Investor's Discount (%)
< 60	0%
60–80	7.5%
80–100	10%
> 100	15%

- Sales agency—Both AsiaCo 2 and HeadCo are also sales agents, with the former under the terms of a 20-year agreement. An annual marketing commission of $39.0M was paid to AsiaCo 2 in 2014 in line with sales expected to take place over the year. From the HeadCo's financial report it would appear that they will remit to MinCo 98% of sales proceeds. This presumably amounts to a marketing fee equivalent to 2% of the value of sales.
- Supply of plant and equipment—AsiaCo 2 is the preferred supplier of plant and equipment and other facilities for the construction and maintenance of the mine and railing/port system amounting to date to in excess of $100M and, as discussed below, has also been the provider of relevant tied debt funding for their acquisition.
- Provision of debt finance—Total debt drawn down as of 30, June 2014 stood at $819.5 million and included:
  - $400M of convertible bonds with a coupon rate of 8.5% and an effective rate of 12.62%. These bonds were issued at the parent company's level with AsiaCo 2 contributing $50M,
  - $208.3M in pre-export finance facilities at an interest of LIBOR plus 5.5% (effective rate 8.35%) with monthly repayments of $10.4M. The report does not specify who the lender of these funds is,
  - $120.3M in equipment finance facilities with an interest of LIBOR plus 5.5% (effective rate 8.35%), 5.59% (7.23%) and 6.0% (7.33%) provided by AsiaCo 2 and secured by HeadCo,
  - $53.3M in a financier shareholders' loan at a rate of 2% (effective 8.35%) provided by AsiaCo 1. A gain of $4.4M was recognised at inception because of the favourable rate.
  - $37.6M as a cost overrun finance at a rate of LIBOR plus 8% to 9% (effective 13.92%) provided by a HeadCo's finance subsidiary and guaranteed by HeadCo.

In all cases it will be difficult for the tax authority to relate the borrowing costs at the level of the operating companies to those incurred at the consolidated level and by the related financing entities and whether deductions in excess of costs actually incurred are claimed. It may also be debatable whether fees incurred for the provision of loan guarantees by HoldCo have in fact displaced financial risk at the consolidated level and represent legitimate deductions.

- Corporate strategic and support services provided by HeadCo on a $2.17 cost per tonne basis.

This case study clearly displays a corporate/business structure which achieves the aim of shifting a potentially substantial proportion of profits from the host country to lower-tax jurisdictions, thus lowering the overall tax bill at the consolidated level and creating an incentive to invest and bear significant risk in the host country. However, corroborating the allegations of transfer mispricing raised by Dan Watch (Dieckmann, 2011) would require an in-depth audit

Box continues on next page

Box B.11: (continued)

supported by detailed cross-border information, much of which may not be available to the tax authorities of the host country. The case raises the interesting issue of whether or to what a degree customers' discounts negotiated in the context of long-term offtake agreements make the applicable prices inconsistent with the arm's length principle. In the context one may argue that these discounts compensate the buyer for other benefits conveyed to the iron ore producer such as availability of significant equity and debt funds and a secure market for its products, particularly in the early sensitive years following commissioning of the mine. The company would probably argue with a degree of legitimacy that the project would unlikely have been developed without attracting foundation shareholders such as AsiaCo 1 and 2. Thus at the macro scale the issue boils down to a strategic decision on the side of the host country government as to what a fair split of profits should be under the circumstances.

The case is also interesting in so far that the main related parties are largely owned by a sovereign state which plays a wide range of functions, e.g., buyer and marketeer for the commodity, shareholder, banker, procurer, supplier and possibly manufacturer of some of the plant and equipment employed.

While the project appears to have an adequate level of equity in its funding structure, the tax authority of the host country should satisfy itself that the risk premia added to LIBOR in its debt facilities are justifiable and that the securitisation charges by the parent HeadCo are warranted.

Questions should also be asked as to the realism of the offtake contract tonnages in the early stages of the project which have been leading to large amounts of liquidated damages and the appropriateness of charging for marketing and corporate support and strategic services as either a significant fixed amount or as a function of tonnages rather than on a cost plus basis.

[a] Dieckmann, S., 2011, Not sharing the loot, Dan Watch.

6.3.3.4 Coal products, pricing and case studies

The classification of various types of coal is primarily a function of their carbon/energy and moisture contents. The International Coal Classification of the Economic Commission for Europe (UN/ECE) recognises two broad categories of coal, which in order of increasing diagenesis are:

- ***Brown coal,*** including ***peat, lignite and sub-bituminous coal*** mainly used domestically in power generation, and
- ***Hard coal,*** including mainly ***bituminous coal*** and subordinately ***anthracite,*** for thermal (steam coal) and metallurgical (coking coal) used in the iron and steel industry.

Details of the characteristics of each type of coal are provided by the International Energy Agency (IEA)[137] as follows:

- ***Peat:*** Combustible soft, porous or compressed, fossil sedimentary deposit of plant origin with high water content (up to 90 per cent in the raw state), easily cut, of light to dark brown colour. Used primarily on a low scale domestically and next to the pits.
- ***Lignite:*** Lignite is brownish-black in colour and has a carbon content of around 25–35%, a high inherent moisture content sometimes as high as 66%, and greater than 31% volatile matter on a dry mineral matter free basis. Its ash content ranges from 6% to 19% compared with 6% to 12% for bituminous coal. This non-agglomerating coal has a Gross Calorific

[137]International Energy Agency: http://wds.iea.org/wds/pdf/documentation%20for%20coal%20information%20(2011%20early%20edition).pdf, Accessed 13/4/2014.

Value (GCV) of less than 17,435 kJ/kg[138] (4,165 kcal/kg) and greater than 31% volatile matter on a dry mineral matter free basis. This category includes oil shale and tar sands produced and combusted directly or used as inputs for other transformation processes.

- ***Sub-bituminous coal:*** Defined as non-agglomerating coals with a GCV between 4,165 kcal/kg (17.4 GJ/t) and 5,700 kcal/kg (23.9 GJ/t 20857) containing more than 31 per cent volatile matter on a dry mineral matter free basis.
- ***Bituminous coal:*** Bituminous coal is used for steam raising and space heating purposes and includes all bituminous coal that is not included under coking coal. It is usually more than 10% volatile matter and relatively high carbon content (less than 90% fixed carbon). Its GCV is greater than 23,865 kJ/kg (5,700 kcal/kg) on an ash-free but moist basis. Mostly used as thermal coal, but when its quality allows the production of a coke suitable to support a blast furnace charge it may be used as coking coal.
- ***Anthracite:*** A high-rank coal used for industrial and residential applications. It is generally less than 10% volatile matter and a high carbon content (about 90% fixed carbon). Its GCV is greater than 23,865 kJ/kg (5,700 kcal/kg) on an ash-free but moist basis.

Beneficiation is essential for export-quality coal, and most coals in Africa require coal washing and processing facilities. Coal preparation for market readiness is essential because of inherent impurities like ash content, as coals for metallurgical or coking use rely on very low ash content. Beneficiation also causes coal to change its form, which is problematic from an accounting and price calculation perspective. Examples are the conversion of coal into heat, electricity, liquid fuel (CTL—a process referred to as coal liquefaction), and gas (e.g., underground coal gasification—UCG). However, most of these applications of low-quality coal tend to be within a single country and as a result tax leakages are minimised, as the relevant tax administration generally has access to detailed financial information about both the producer and the user of the coal, both of which would have had to submit tax returns.

Coal is readily available from a wide variety of sources in a well-supplied worldwide market. Coal is transported to the market in bulk—by trucks and rail (local market) and by ship (international markets). Most coal, and essentially all low quality coal, is used in the country in which it is produced, with the large number of suppliers contributing to an active international coal market, ensuring that the market is competitive and efficient. Because of bulk transport over sometimes very long distances, transportation costs account for a large share of the total delivered price of coal.

The transfer or sale of coal products can take place at various downstream stages of processing, depending upon the commodity and the market. Mines generally produce specific products (in terms of quantity, quality and size) depending on customer requirements. Typically, quantity and fragment size are important for power station coal, while for thermal (and export), quality is more important. Thermal coal therefore requires more processing and fetches higher prices. Depending on the yield factor and the quality of the raw coal, processing of coal may result in significant quantities of low-quality coal—typically between 30% to 50% of ROM coal ends up in waste material dumps. The typical quality parameters include calorific value, ash composition, volatile matter, moisture content, fixed carbon, sulphur and other impurity contents. Revenue and cost calculations for coal transactions can become very complex for specific markets when quality requirements and penalties for impurities are factored in.[139] Because the market for a diverse range of coal

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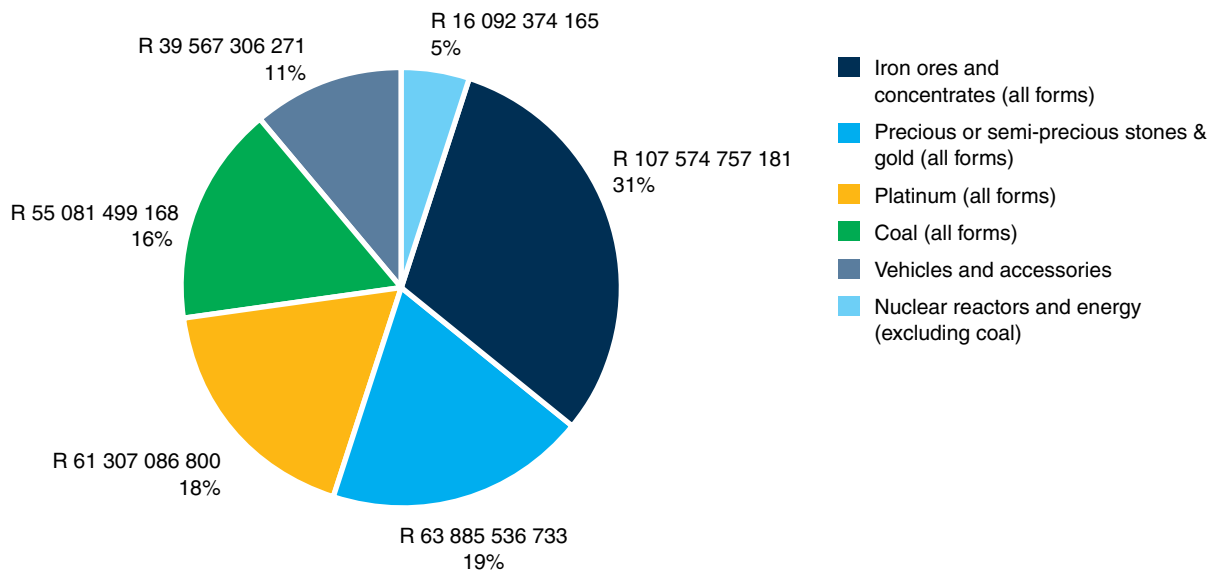
[138]Conversion factors for energy content in coal:
From **kcal/kg** to **MJ/kg** multiply by 0.004187
From **kcal/kg** to **Btu/lb** multiply by 1.800
From **MJ/kg** to **kcal/kg** multiply MJ/kg by 238.8
From **MJ/kg** to **Btu/lb** multiply MJ/kg by 429.9
From **Btu/lb** to **kcal/kg** multiply Btu/lb by 0.5556
From **Btu/lb** to **MJ/kg** multiply Btu/lb by 0.002326

[139]See http://www.coalmarketinginfo.com/coal-calculator/ (accessed 18 May 2015) as an example of a coal price calculator.

Figure B.2: Total South African exports, emphasising the role of coal (Customs Value SA Exports 2013)
Source: SARB Export Statistics



products is remote from the operations (often extending into the international market), there are significant TP considerations for coal transactions along the value chain.

Figure B.2 illustrates the scale of coal and coal product exports in South Africa. Coal exports (including its downstream products) amounted to about US$5.5 billion (16%) of South African export value in 2013, which have several transfer pricing and cost implications because of the geography and range of products. When coal consumed by ESKOM for electricity generation, by SASOL for the manufacturing of synthetic fuels and chemicals for the local market, and coal for domestic consumption in the industrial sector (iron and steel industry) are added to exports, one starts to comprehend the scale of the industry. As a consequence, insignificant mispricing and cost manipulation can lead to significant erosion of the tax base. From this explanation it follows that there is potential for BEPS, and a company-developed TP policy for approval by the revenue authorities is essential for setting and verifying prices for coal and its beneficiated market products.

The case study in Figure B.3 is a relatively simple case illustrating the implications for a large, vertically integrated multi-commodity group based in South Africa. Beneficiation of coal is only to the processing stage, which suggests that coal is sold to both ESKOM and the domestic metallurgical market. The company also 'imports' coal from its international subsidiaries. Ownership of international subsidiaries inevitably results in cross-border activities for all commodity divisions. Figure B.3 further demonstrates the extent to which the company is vertically integrated along its value chain.

In summary, the potential TP issues for this company are:

- Pricing of metallurgical coal to its ferrous smelting subsidiaries;
- Pricing of export coal;
- Pricing of coal imports from its international subsidiaries;
- Establishing component of transport costs to price—for both domestic and export coal;
- Pricing of business development services rendered to international subsidiaries;
- Acquisition cost of, and ownership stakes in, new properties in its international portfolio of assets;

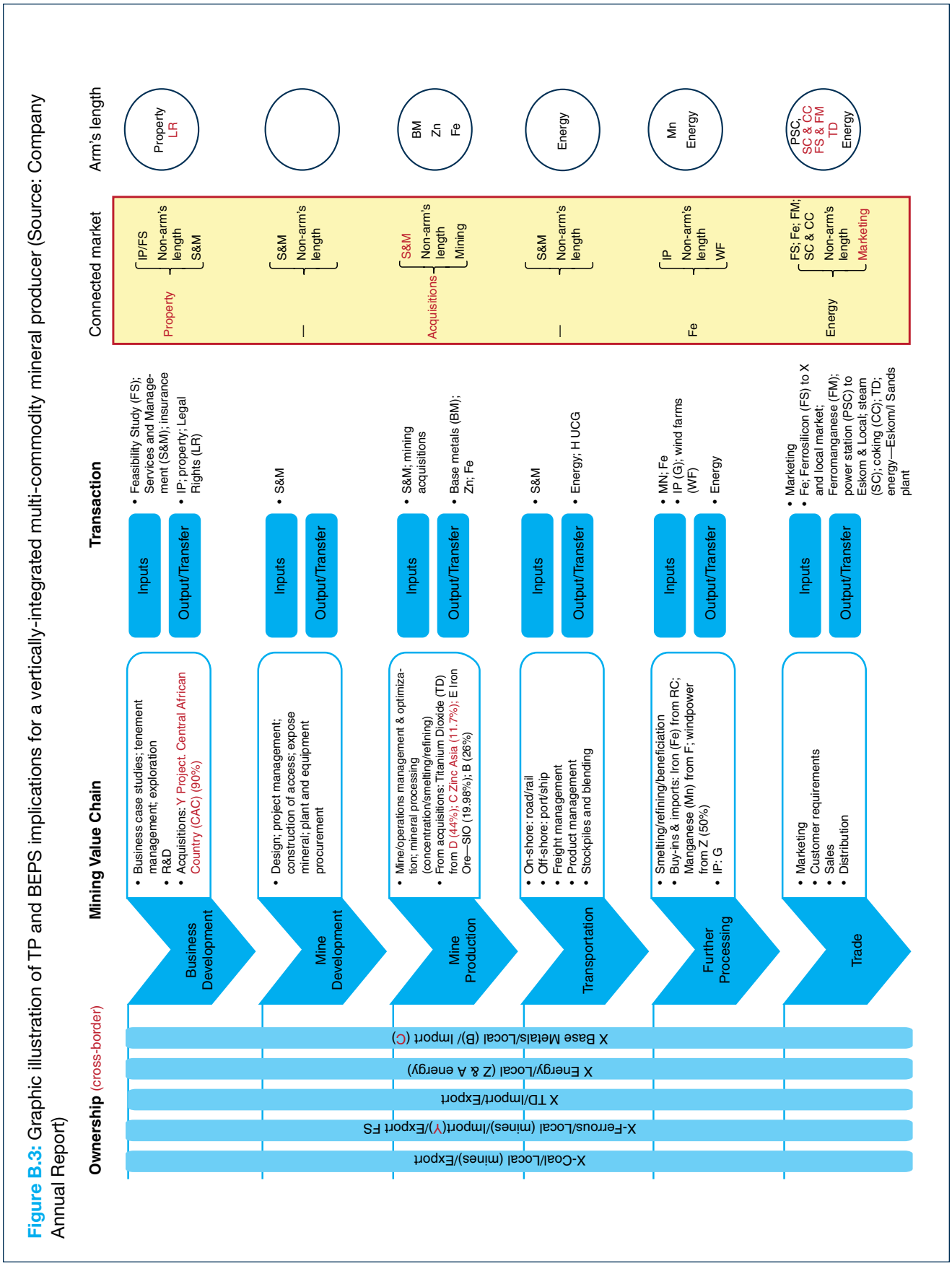


Figure B.3: Graphic illustration of TP and BEPS implications for a vertically-integrated multi-commodity mineral producer (Source: Company Annual Report)

Box B.12: Ore producers: A coal mining example

A MNE operating in the coal industry has implemented a centralized business configuration, whereby the trading company located in a European jurisdiction acts as the principal. In this respect, the trading entity claims have in place the significant people functions as well as the required equity buffer to manage all major risks. Marketing and sales entities represent the MNE's revenues centres while exploration, mining and processing entities act as cost centres.

Under this business configuration, the African operations are integrated only to the mining stage including crushing and screening of the ore and initial beneficiation. Afterwards the ore is transferred to a processing entity located in Eastern Europe, which subsequently transfers it to a centralized trading company.

Under this fully centralized business structure, all important decisions, business plans, policy settings/strategy on exploration, mining, R&D activities and marketing are all defined and controlled by one single entity, i.e., the trading entity. Stripped of their main risks and assets, the exploration and mining entities are being regarded as performing routine services and are compensated with a limited markup on top of their costs. In effect their role has been constrained to that of a mining contractor. The sustainability of such business models has lately received a lot of criticism, through the OECD initiative on BEPS. In essence, the recent action plan on BEPS is waving a red flag for such business structures indicating that there might be concerns regarding substance requirements.

An allocation of the relevant headcounts under each significant function, i.e., exploration, mining, R&D, processing, marketing and sales, may be legitimately requested by local tax authorities to assess whether the substance requirements of the trading company are being met.

The UN position could warrant that the location saving and synergies of having access to the 'source of coal' justify the African group companies involved in the E/M activities to claim a premium on top of what otherwise would be a typical 'cost plus' price generally involving a margin of the order of 5% above fully loaded cost. The magnitude of this additional uplift to take into account relevant location savings and synergies would be determined through a process of negotiation between the parties as if they were independent entrepreneurs dealing at arm's length.

Figure o: Value-chain diagram of a typical, export-oriented coal mining company in a developing country

Blue: Inside Africa
Black: Outside Africa

- Import prices for international inventory to mix and blend with domestic production;
- Connected market activity related to property acquisition, property sales, services, management fees and market prices for a range of minerals with differentiated products.

Box B.12 discusses how a centralized business structure may operate within the coal industry.

6.3.3.5 Diamonds and other gemstones

While diamonds and gemstones in general are mined primarily for their rarity and beauty, lower quality diamonds and some other hard non-gem-quality minerals also have significant industrial applications. There are many (at least a hundred) recognised gemstones, which are cut and polished from naturally occurring crystals because of their hardness, scratch resistance and above all considerable beauty. Value is based on size, rarity and appeal.

Africa is a significant and known source of diamonds, but its coloured gemstones are becoming increasingly important. Gemstones occur in many countries throughout the continent, with significant diamond finds being regularly recorded. This report is primarily concerned with the production of diamonds because of its status as the gemstone of choice and its important industrial

Box B.13: Transfer pricing for rough pink diamonds

The determination of a royalty value for pink diamonds in Western Australia provides an extreme example of the complexity of determining whether the transfer prices proposed by a royalty-payer are realistic in the absence of an arm's length price set in a contestable market. The Argyle mine produces major quantities of white, mainly industrial-quality diamonds, but also a commercially significant quantity of very rare, hence very valuable, gem-quality pink diamonds.

Non-pink diamonds are exported and marketed in sorted batches in a contestable market in Antwerp largely at arm's length.

By contrast, the entire production of pink diamonds is transferred to, and processed domestically and overseas by, related "cut and polish" divisions of the same MNE that owns the mine, then sold as finished gemstones in a variety of specialized international markets. A viable approach for government to reflect market prices for pink diamonds transfers was to appoint a government diamond valuator (GDV) to physically inspect and value the rough pink diamonds produced in each period. Although the company provided their valuations, they were reluctant to disclose the sales value realised in their overseas tender of finished cut and polished stones. The GDV assessed rough values by imputing specific costs and margins obtained through market intelligence to various downstream processes. Valuations involved, besides consideration of expected yields, complex judgment and classification of the rough stones in line with common GSA valuation criteria in terms of size, depth of colour, and crystallographic and other hard-to-assess qualities. Needless to say that initially the company's and GDV's values were at variance often significantly so. Because of the very limited marketing information provided by the company, the responsible minister used his power under the relevant legislation to deem the values obtained by the GDV to be the appropriate base on which to levy royalties, which the company reluctantly adhered to pay. The situation improved significantly after the government and company agreed to construct a reference physical standard of rough pink diamonds of different quality and relative value to assist sorting of future production batches for valuation. The process of cutting and polishing high-quality tender stones now also includes tracing of individual batches of rough pink diamonds.

Prior to the departure of the government diamond valuator, a mutually agreeable valuation matrix was created by the outgoing valuator and the Argyle mine. Pink transfers to Argyle's cutting and polishing facilities have since been valued for royalty purposes using this valuation matrix. The original valuation matrix has subsequently been adjusted as a result of reviews into Argyle's pink business to better define the relationships between pink rough transfer prices and cut and polished sales. Agreements between Argyle and government have also resulted in progressive adjustments to transfer prices within the matrix to reflect movements in cut and polished sales and related margins.

use. Diamond production has traditionally not been vertically integrated and as a consequence most transactions involve the sale of 'rough' diamonds. There are, however, cases where producers transfer rough diamonds to related cut and polish entities and subsequently to their marketing arm. This is particularly the case for unique types of stones, as for instance pink diamonds, which are discussed in Box B.13. Apart from security and insurance, transportation is not an issue with gemstones because of their high-value and low-volume nature.

Natural diamonds are among the world's most precious natural resources, as extremely successful marketing campaigns, such as that based on the De Beers-coined slogan of *A Diamond Is Forever,* have made them by far the favourite gemstone for consumers. In 2013, reported diamond production amounted to 130 million carats of rough diamonds valued at USD 14 billion. Large-scale diamond production is becoming increasingly challenging as mining moves towards deeper, less profitable and more remotely located resources.

Market entry barriers range from very low for the widespread alluvial deposits to very high due to capital and technological barriers to entry for some operations such as off-shore and deep kimberlite deposits. As a consequence, there is a variety of different diamond producers in Africa, including a few dominant producers and a multiple of small firms as well as artisanal producers.

Recent increases in production reflect growing demand from India and in particular China, which is now the world's second largest consumer of diamond jewellery after the US, with demand growing 18% in 2011.[140]

Most mine sales are in the form of rough (unpolished) diamonds. Because of its low-volume high-value status, a diamond is easy to transport, making it susceptible to informal trade (even smuggling connected to a black market) across national boundaries to markets, escaping the tax regime of the host country. Once mined, the rough stones move through the value chain, similar to that of other commodities. There is a very strong link between mining and marketing for diamonds, perhaps more than for most other mineral commodities. Changing preferences in consumer demand cause dealers, cutters, polishers, jewellery manufacturers and retail stores to respond quickly to new trends and fashions. The world value-added on diamonds is significant as diamonds move along the value chain. About 60% of value is added from rough to cut and polished diamonds, with a further 200% (or more) added by jewellery manufacturing and retailing.

Although there has been an improvement in market transparency, the price of the vast majority of gemstones is generally not set in highly transparent terminal markets, but frequently, as in the case of rough diamonds, through tenders by invitation in a limited number of traditional and new marketing centres. The price achieved generally reflects the degree to which the mineral products satisfy their individual users' specifications, thus creating value-in-use. In many cases marketing may add significant, often hard to verify, value. Wholesale diamond sales are conducted in a number of major trading centres (e.g., South Africa, Belgium, Dubai, Israel, etc.) with India currently establishing a special trading zone to accelerate development of its already significant diamond trading sector. Selling is by means of tenders to which, in most cases, buyers (called sight holders in South Africa) attend by invitation and tend to transact at or close to the tender prices recommended by the major producers/sellers that, in some cases, hold oligopolistic power. The assortments offered for sale are generally combined and valued by the producers/sellers, and checked for consistency with standards and certified by the relevant government diamond valuator before they are sealed and exported.

The major diamond mining companies in Africa are vertically integrated to a large degree from exploration through mine development to the market, which poses transfer pricing risks because of first, the specialised valuation skills that are required for rough diamond valuations, and second, the wide range in the pricing structure per carat. Because of often significant differences in specifications and value-in-use, pricing tends to vary widely for essentially similar products. These prices are generally kept confidential in an endeavour to protect proprietary processes and valuable marketing niches. Needless to say, the specialised nature of some of these markets and the absence or paucity of relevant databases creates difficult auditing challenges. Among gemstones, diamonds represent a major challenge for tax authorities, because of their enormous variations in the quality of individual stones that makes them hard to value, and the financial significance and oligopolistic nature of the related market.

To the extent that secondary sales of rough gem-quality diamonds are subordinate and a systematic record of the prices realised is not readily available, it is problematic to determine what an appropriate arm's length price should be for this commodity. It is fair to say that diamond producers have invested heavily and have been very successful in creating a cultural perception that this commodity, with essentially little intrinsic value, denotes high luxury and prestige for the wearer and symbolises love pledges that will last "forever." Appropriately incorporating this ostensibly high intangible value into diamond prices is patently difficult and, in the presence of sustained retail demand for diamond jewellery, this task tends to be dominated by the main producers/sellers.

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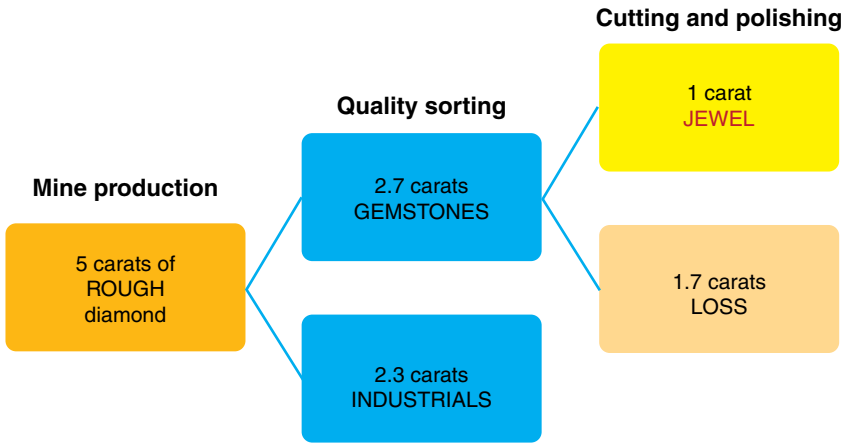
[140]Annual Global Summary: 2013 Production, Exports and KPC counts. Kimberley Process Certification Scheme.

Figure B.4: Diagrammatic breakup of average rough diamond yields



The per-carat value of a diamond could increase as much as eightfold from the mine to the retail sale of diamond jewellery. As illustrated in Figure B.4, on average, from every 5 carats of rough diamonds mined, 2.3 carats are classified as industrial and the remaining 2.7 carats as gem quality. Of the latter, 1.7 carats will be lost in the cutting and polishing process, yielding on average one carat of cut and polished jewellery.

The total value of rough diamonds averages around USD120/crt, with industrial-quality diamonds generally valued in the range of USD10 to 20 per crt, while gem-quality rough averages USD200/crt. In spite of initial modern mechanical sorting, manual sorting/classification involving a significant degree of subjective judgement still represents a major component in the creation of the assortments to be exported and marketed. Individual gem-quality diamonds are classified according to a number of criteria provided, among others, by the Gemmological Institute of America (GIA), including crystalline structure (e.g., stone, shapes, cleavages, macles and flats) that affects the yield (from 50% down to 25%) and rough weight, colour and clarity, which in combination allows the valuator to place them in a price matrix (e.g., the Rapaport diamond price list or, in the case of De Beers' Diamond Trading Company (DTC), its own "Price Book") and derive from this matrix the rough price per carat. Box B.14, modified from the Diamond Buying Guide produced by Info Diamond, provides an example of how to determine the purchase price for a rough diamond once it has been classified according to GIA criteria.

Because of the specialised nature of the classification process, of the large number of valuation criteria, and consequently, of possible quality combinations (thousands), there can be significant differences from valuator to valuator. This makes the job of a government diamond valuator very difficult, in checking whether the assortment of diamonds for export conforms to approved standards and are appropriately valued.

The complexity and opacity of the process, the difficulty of some governments to secure the services of competent specialised valuators, and the general lack of adequately disaggregated volume and value information for diamonds exported and imported by individual companies makes detailed analysis almost impossible. However, following the reporting requirements in relation to the Kimberley Process Certification System (KPCS), designed to stem the trade in conflict diamonds, analysis of aggregated export/import figures and their trends has become possible for individual countries. Not surprisingly, this has led to many allegations raised by civil society organisations of mispricing of rough diamonds exported and/or imported by key African producing countries, such as the Democratic Republic of Congo (DRC) (See the Africa Canada Alliance's 2014 case study

Box B.14: Example of how to calculate the purchase price of a gem-quality rough diamond

For the purpose of this example, it is assumed that the rough diamond to be valued has an octahedral stone structure allowing a 50% yield. The cutting of two stones of equal size is clear with a slight level of inclusions visible only under 10 times magnification (VS2) and is nearly colourless (G). Figure p shows the sample calculations for the valuation of this diamond.

Figure p: Sample calculation for rough diamond valuation

Calculation of purchase price for rough gem-quality diamond
Modified after Info Diamond's "Diamond Buying Guide"

Crystalline structure	Stone (octahedron)
Yield %	50%
Clarity	VS2
Rough weight (crt)	5
Colour classification	G
Expected cut and polished weight (crt)	2.5
Number of stones after cutting	2
Weight of individual stones (crt)	1.25
Rapaport price list value for a 1.25 crt, VS2, G colour rough stone US$/crt	500
Retail value for each stone US$	3125
Retail value of total stones yielded US$	6250
Discount from Rapaport price to wholesale market value %	40%
Wholesale market price US$ per stone	1875
Total wholesale market price US$ (2 stones)	3750
Required profit margin %	50%
Purchase price for rough diamond US$	**1875**
Purchase price for rough diamond US$/crt	**375**

presented in Box B.15) and South Africa (See the Leverhulme Centre for the Study of Value's 2014 case study presented in Box B.16). As usual, it is generally easy for some of the NGOs to raise concerns about possible transfer mispricing but extremely difficult for the relevant tax authorities to follow these up with irrefutable analysis and evidence that would prove them valid.

The South African situation, based on a comprehensive analysis conducted by Braking and Sharife (2014)[141] and described in Box B.16, is somewhat different from the Congolese case study, in that over the timespan since KP statistics have become available in 2007, South Africa has been importing significant amounts, by value, of rough diamonds, as well as exporting large amounts by volume. In some cases these volumes significantly exceed domestic production, but at a much lower unit value.

The valuation of rare and fancy coloured (yellow, pink and blue) rough diamonds is particularly challenging for both industry and tax authorities, as the value of the related jewellery stones can be very volatile because they are the subject of intensive and specific marketing/advertising

[141] Braking, S. and Sharife, K., 2014, Rough and polished: A case study of the diamond pricing and valuation system, Leverhulme Centre for the Study of Value (LCSV), Working Paper Series N.4.

Box B.15: Congolese exports of rough diamonds to Dubai

Questions about mispricing were raised on the basis of the large and increasing margins realised between the prices of rough diamonds imported from the DRC into Dubai, and the corresponding export prices now exceeding 40%. Such a margin appears excessive relative to the value added in Dubai, which is claimed to be mainly derived from re-sorting the bundles, in some cases after "boiling" the diamonds, i.e., deoxidising them in sulphuric acid to significantly improve their appearance, and also mixing them with diamonds of other provenance, thus increasing their gem to industrial ratio and value prior to their export primarily to India with new KP certificates of mixed origin issued in Dubai. Dubai is rapidly developing as a tax-free, diamond trading centre, now ranking third in the world, which in 2013 handled $12.4 billion worth of rough diamonds. Critics argue that this may only happen because diamonds leaving the DRC (currently the second largest world producer by volume but 10th in value terms) are consistently undervalued due to the inability and/or incapacity of the local government valuators at the Centre d'Evaluation, d'Espertise et de Certification (CEEC) to keep up with the large levels of exports contesting their valuations. This, it is claimed, results in significant reductions in the related corporate income tax and 3.75% export duty collected in the DRC. Some of the value-added also stems from the discounted purchase of rough diamonds from legal but objectionable sources where the parcels are re-valued, mixed with other shipments and exported with no tax consequences. Interestingly some Congolese government officers have indicated (Personal communication, 2014) that these high margins are only realised on exports to Dubai and not to assortments shipped to Belgium or Israel where margins are in the 5% to 8% range. It is easy to understand how, aside from possible transfer mispricing, the 50-year tax holiday provided in Dubai's Free Trade Zone may represent a strong incentive for families of related companies to set up their trading hubs in this locality even though their diamonds will ultimately be conveyed from there to Belgium, India and other Asian destinations where they could have been sent in the first instance.

The somewhat relaxed import/export regulatory regime as it concerns gold and diamonds and the capacity to carry out significant and untraceable cash transactions outside the formal banking system make Dubai an attractive destination for some enterprises. Table h, derived from 2013 statistics published by the CEEC, indicates that, on a weighted average, the export value as declared by industry at $10.04 per carat was 41% under-priced relative to estimates of $14.19 per carat carried out by or on behalf of the CEEC. It is also estimated that in 2013 transfer mispricing of rough diamonds cost the Congolese fiscal revenue in the order of $66.1 million. Independent valuations of imported diamond parcels should be conducted on an ad hoc basis by the Dubai Multi Commodities Centre which implements the KP certification process. Although the policy is to reject shipments of gem-quality rough diamonds undervalued by more than 30%, no such rejections have occurred in the past 5 years.

Table h: 2013 Congolese rough diamond exports

Congolese rough diamonds exports statistics 2013
(Modified from the Centre for Evaluation, Expertise and Certification, Kinshasa)

Exporter	Quantity (crt)	Declared Value US$	Average US$/crt	Expertise Valuation US$	Average US$/crt	Destination
Afrogem	1,317,455	31,226,296	23.7	41,848,275	31.76	UAE and Belgium
Kasai wa Belengela	8,284,052	32,520,255	3.93	56,905,220	6.87	UAE and Belgium
Saga	2,839,585	56,781,649	20	77,196,662	27.19	Israel and Belgium
Solidiam	3,125,684	35,829,705	11.46	44,867,025	14.35	UAE and Belgium
Total	**15,566,775**	**156,357,905**	**10.05**	**220,817,182**	**14.19**	

Box B.16: Analysing the relationship between South African export and import volumes and prices

Although De Beers has recently been divesting of many of its traditional diamond mines, De Beers and Petra Diamonds now collectively account for 97% of production by value, with De Beers still producing 77% of South African diamonds by volume.

Since KP statistics have become available in 2007, South Africa has been importing significant amounts of rough diamonds by value but not by volume much of which has been subsequently re-exported. At times, as in 2007 the estimated difference in value between imports and exports appears to be significant, with imports valued at $1,705 per carat and exports at $134. This can be in part explained by the fact that, while South Africa exports and markets both industrial and gem-quality diamonds, it may be importing mostly gem-quality diamonds, in the case of De Beers, often from associated companies and mainly from Namibia and Botswana. However statistics tend to indicate that only a minority of imported diamonds (LCSV estimates less than 10% by volume) are cut and polished in South Africa, largely by De Beers, in spite of significant reductions in export tax (i.e., down to 5%) on diamond jewellery with the bulk of rough diamonds presumably re-exported after re-valuing and re-sorting them.

LCSV alleges that as Petra sells the bulk of its production domestically, but none to De Beers, this means that as a consequence the latter must account for around 97% of South African export/imports. However the related values are not disclosed by the company on the grounds of confidentiality with only the value of production being provided. Nonetheless past De Beers' "Report to Society" indicate that about 50% of production by value is sold to the domestic cutting industry by its Diamond Trading Centre (DTC) and the State Diamond Trader. On this basis and keeping in mind the low rate of cutting and polishing of imported diamonds, the LCSV concludes that the difference between exported rough diamonds and domestic production must be made up by a significant proportion of re-exported gem-quality rough diamonds of foreign origin previously imported and declared as high value.

Table i, compiled by the LCSV using KP statistics under the assumption that import values are in fact at arm's length, and that the majority of rough imports are in fact re-exported in rough form and inventory movements are moderate, provides a measure of how much less diamonds that are re-exported are apparently worth compared to when they were imported or mined. Moving progressively from left to right in the table, LCSV estimates that underpricing of South African exports amounted to $3.3 billion over the period 2005 till 2012, of which $2.8 billion was attributable to De Beers. These figures are of course only indicative of a hard-to-reconcile discrepancy but, given the lack of a detailed company by company breakdown of the KP data, may potentially contain significant error. It will, nonetheless, be interesting to see whether and how De Beers will respond to these allegations and in particular that, being the dominant player in South Africa, they ". . . are able to influence the behaviour of the buyers, sellers and critically of the regulator." This influence is attributed to De Beers' unique and undisputed industry position and power in determining diamond values including control of the reference "Price Book." Under the Mineral and Petroleum Resources Development Act (N. 22 of 2002) detailed statistics for individual mines or companies submitted to the Department of Mineral Resources (DMR) are to remain confidential where one company has more than 75% market share, or where there are less than three producers unless they grant permission to the DMR to publish the data. Even though De Beers' production value has fallen below the 75% threshold, it remains to be seen whether detailed figures will be produced to clarify the situation and dispel these allegations.

Box continues on next page

campaigns making them fashionable, and the value is set by very specialised tenders/auctions that are generally conducted, usually by invitation, in New York and/or other key European fashion centres. More often than not, cutting and polishing is conducted by a related entity, hence, CUPs for rough coloured diamonds are hard to obtain and largely unreliable. Transfer is generally cross-border, but sometimes domestic, involving issues at both the level of mineral royalties and corporate income tax. The former is exemplified for the case of mineral royalties on pink diamonds from Western Australia in Box B.13. Inevitably, if the value of production is significant, the governments of producing countries will need to rely on specialised diamond valuation skills that may not be readily available and, at any rate, extremely expensive.

Box B.16: (continued)

Table i: Variance in recorded diamond values: point of mine, imports and exports (Reproduced from: LCSV, 2014, Rough and Polished, Working Paper N.4)

	Domestic Production					Imports			Exports									
	KP: Volume cts (mill)	KP: Value USD (mill)	KP USD per carat [A]	Local beneficiation volume cts (mill)	Local beneficiation as % imports (by vol)	Volume cts (mill) [G]	Value USD (mill) [C]	USD per carat	Volume, cts (mill) [D]	Value USD (mill) [E]	USE/cts	E–C value of dom. Prod. USD (mill) [M]	D-G Vol of dom. exports	Prod (adjusted for import) [M/I], [H]	Difference actual export price and KP listed price USD (mill) [H-A], [I]	Value of mispricing USD (mill) [I × J], [K]	Estimated De Beers % of exports by value [F]	Value of mispricing attributable to De Beers USD (mill) [FK]
2004	14.09	1,075.76	76.34			0.93	608.64	655.59	14.82	1,835.69	123.84	1227.05	13.89	88.34	12.00	166.68	95	158,346
2005	15.56	1,319.09	84.78			1.10	728.56	664.75	20.39	2,148.29	105,37	1419.73	19.29	73.60	−11.18	−215.66	96	207.03
2006	14.93	1,361.82	91.18			0.74	672.18	905.99	15.78	1,930.28	122.32	1258.1	15.04	83.65	−7.53	−113.25	95	108.72
2007	15.21	1,417.33	93.18			1.24	2,113.89	1,705.67	13.89	1,867.33	134.44	−246.56	12.65	−19.49	−112.67	−1425.28	97	1,382.52
2008	12.90	1,236.24	95.82			0.68	582.25	850.09	10.14	1,484.83	146.39	902.58	9.46	95.41	−0.41	−3.88	93	3.61
2009	6.14	885.54	144.23			0.66	357.20	544.73	9.55	1,018.67	106.67	661.47	8.89	74.41	−69.82	−620.70	85	527.60
2010	8.86	1,194.28	134.75	0.129	32.25	0.40	307.96	773.16	3.76	709.22	188.76	401.26	3.36	119.42	−15.33	−51.51	70	36.06
2011	**7.04	1,388.68	197.13	0.167	12.41	1.35	460.17	339.79	6.65	1,370.45	205.94	910.28	5.3	171.75	−25.38	−134.51	*99	133.16
2012	7.08	1,027.13	145.13	0.150	1.31	11.47	1,082.13	94.31	8.01	1,355.53	169.13	273.4	−3.46	−79.02	−224.15	−775.56	55	426.56
Total																3,340.34		2,825.26

Note: This table combines data from Kimberley Process records submitted by De Beers and Department of Minerals Annual report data on average value per carat and volume of domestic production.

The bracketed letters in the headings give a label for the column and are used to track the calculations being made.

*Value of USD 1,799 in SAMI, gives USD per carat of USD202.97 (2010: 29). SAMI state average rough diamond price USD202.13 (2010: 31). But from SAMI (2011: 6).

"Diamonds produced in South Africa were valued at an average of $247.14/ct in 2011, an increase of 22.3 percent over the 2010 figure." Gives figure of 192.03 for 2010.

**This is calculated by volume.

Chapter 6 Key Take-Away Points

- The African continent has continued to increase in importance as a producer of mineral commodities. Based on its uncontested exploration potential, this trend is set to continue into the future.
- Gold is the dominant commodity on the African continent in terms of production and exploration.
- While South Africa has historically been the dominant producer for all commodities, it now receives much less exploration attention relative to other African countries, and with the exception of coal, her dominant position may shift in the future.
- Although most African jurisdictions by now feature in some cases reasonably detailed transfer pricing legislative provisions, with a few exceptions, relatively little action is currently taking place in terms of transfer pricing auditing in general, and of mining related transfer prices in particular.
- Targeting for the purpose of performing transfer price audits should be done on a systematic basis that identifies the greatest risks to government revenue.
- Of the high ticket items, it appears that the following may involve transactions with high intangible components in their cost structure, thus deserving priority attention:
    - Revenue related transactions (e.g., distribution and marketing services);
    - Management and administrative services provided as an annual operating cost that may include accounting and finance functions;
    - Transportation services that may involve the provision of insurance; and
    - Engineering services provided as a capital expenditure.
- Diamond mining poses a high level of transfer pricing risk in Africa due to the complexity in valuing the vast array of diamond qualities, and the consequent wide range in the pricing structure per carat.
- Guidelines such as the BEPS Action Plan and related final recommendations and the UN Manual on Transfer Pricing in Developing Countries can provide valuable guidance on how inter-company charges can be set at fair levels.
- Tax authorities must understand the components included within the calculation of revenue for different types of mining projects and mineral products. As illustrated in the case examples throughout this chapter, some minerals have specialised formulas that are used to calculate revenue (i.e., NSR, CFR, etc.).
- The best approach for ensuring accurate transfer prices are used is prevention rather than cure. As a result, it is important for tax authorities to maintain ongoing, open and transparent lines of communication with taxpayers and to create incentives for their cooperation and compliance.
- Where a range of comparable prices may apply to the exchange of a product or service, clearly defined criteria should be established early to determine where within that range the appropriate transfer price should be placed on the basis of the functions performed, assets used and risk borne by the supplier.
- Transfer pricing is only one factor in a multifaceted complex of issues resulting in base erosion and profit shifting, and it cannot be dealt with in isolation, that is to say, without full cognisance of its interplay with MNEs' restructuring and the exploitation of DTA networks, i.e., 'treaty shopping'.

Part C

Institutional and Administrative Capacity

As transfer pricing in the mining sector cannot be understood or addressed in any meaningful practical way without placing it into a broader contextual setting, this Part will look at how tax administrations can select cases, identify their risk issues, audit the evidence and resolve disputes for transfer pricing in general and their application in the mining sector. It will look at the skills and resources required, as well as what can be done to overcome any shortcomings, including the need for transfer pricing capacity strengthening. It will also look at the identification of comparables databases relevant to mining and their use in an African context. It will discuss various interim options to lift capacities, including making use of short- to medium-term consultants and cooperation with other tax administrations within Africa and abroad.

7

Transfer Pricing Administration, Compliance and Audits

In opening this chapter, it must be pointed out that the authors deliberately refrained from dealing with some important higher level contextual issues such as:

- The institutional prerequisites for a country to be perceived as attractive to FDI, promoting business development and better compliance resulting in economic growth. These include, besides a stable and competitive fiscal regime, political stability, rule of law through an independent judiciary, low levels of corruption and black economy and a competent bureaucracy with administrative capability in terms of formulating policy and enforcing rules that are economically efficient and fair. There is a large body of literature that deals with these issues in general, but recent works of note dealing specifically with natural resources includes that by Prof. Lou Anne Barclay (University of West Indies) on 'embedded autonomy' in the context of the bauxite industry in the Caribbean[142] and that by Lorenzo Cotula (2016)[143] on the interplay between FDI, taxes and sustainability of the resources sector.
- The fact that gaps in transfer pricing auditing capacity in Africa are just one of many facets of the current generally weak fiscal administration capacity in the continent and in developing countries in general. The general issue of how to improve mining taxation administration and collection frameworks in Africa, including better co-ordination and collaboration among the various ministries and government departments involved in the process, has been dealt with in a previous World Bank CET publication (Guj et al, 2013 op. cit.) to which the reader is referred.
- Many of the issues discussed in this chapter including the development of risk assessment criteria, the institutional setup of transfer pricing units and strengthening of administrative capacity, as well as tailored reporting requirements are relevant from a non-sector specific transfer pricing perspective. All these issues are thus also discussed from an economy-wide perspective in the concurrently published general World Bank handbook on "Transfer Pricing and Developing Economies" (please refer to chapters 6, 7 and 8).

7.1 Compliance Process Overview

As already discussed (in section 4.1), tax administrations need to gain access to relevant business information, undertake analysis and use risk-based criteria to determine which miners warrant their attention. Under resources constraints, the best return on the public funds invested is to direct the key transfer pricing expertise available to auditing a limited number of high-flow/high-risk

[142]Barclay L.A. (2015), Managing FDI for Development in Resource-Rich States (Palgrave Macmillan 2015, http://www.palgrave.com/us/book/9781137516084).

[143]Cotula, L. (2016), Foreign Investment, Law and Sustainable Development: A Handbook on Agriculture and Extractive Industries, IIED Natural Resources Issues, Mayers, J. Editor.

transactions, while promoting general compliance through improved taxpayers communication and development of simplified procedures in the handling of routine transactions.

The following four phases outline the practical mechanisms to enable this process of prioritization and decisions that reflect the interdependent levels of potential revenue value and related risk:

- Phase 1—Case Selection: selecting who should be looked at—what are the significant risks to address and their relative priority. What industry or business groups and what taxpayers may present those risks.
- Phase 2—Risk Assessment: selecting what issues to look at within identified MNEs.
- Phase 3—Audit: identifying and undertaking action needed to manage the specific taxpayer risks through to adjustment (if required). This may often involve gathering evidence through audit or other risk mitigation processes.
- Phase 4—Resolution: resolving the risks both relating to the past and into the future. Negotiation is a key activity at this phase and it may involve arbitration, litigation, mechanisms to relieve double taxation and possibly advance pricing arrangements (APAs).

The main characteristics of these processes are summarized in Tables C.1 and C.2.

It is important for tax administrations to review their risk management and resource allocation decisions in the mining sector at regular intervals (for example, annually) so that they are dynamic to changes in circumstances and context. Static (set and forget) risk management decisions may fail to identify and respond in a timely way to significant changes in tax compliance risks as it is not uncommon for mining companies to modify their related party arrangements, especially when they are aware that tax administrations are looking at particular issues. For example, tax administrations started to look at commodity marketing arrangements many years ago, and some of those audits may still be in progress, however, the marketing arrangements that miners are engaged in today are very different from those reviewed in the audits, which were started many years ago. It is important that risk management decisions reflect both past potential noncompliance as well as current risks.

This temporal or time aspect of risk management ensures an appropriate balance between 'fixing the future' and 'punishing the past'. If a tax administration gets mired or bogged down in dealing with past noncompliance, it may not be able to address current noncompliance. This is particularly important for the mining sector as compliance activities are commonly complex and frequently take many years to resolve. Significantly, an overextended administration may also miss the opportunity for policy, legislative or administrative changes to prevent or lessen the risk of future noncompliance.

In addition to determining the likelihood of a risk occurring and the consequences should it occur, tax administrations need to consider how amenable each risk may be to treatment. That is, can the tax administration do something to remedy the problem or is a legislative or a broader international change needed.

To do this in the mining sector for profit shifting and transfer pricing risks in particular, it is essential that the tax administration understands the particular mining operations that take place in its country. An initial understanding of the following is essential to inform tax administrations of the strategic risks that may exist in their country:

- The global industry characteristics and value chain for particular mineral commodities, and
- The role and contribution that African countries, and in particular, the role their specific country plays in that global industry and the mining value chain.

An effective active compliance program requires the creation and maintenance of adequate data collection systems to provide the platform for a systematic examination of the population and then

Table C.1: Phases and steps in TP verification and audit

Phase	Broad Industry Analysis	Market Analysis	Business Analysis	Profitability Analysis	Functional Analysis
Phase 1 Who Is of Concern	Analyse the industry to identify products mined and exported and **who** is involved. Understand expected tax behaviours and outcomes. Identify features that may indicate a tax concern.	Analyse the market (e.g., Porters Five Forces approach) to gain insights about prices and costs that might reasonably be expected for the products mined and exported. Identify those **who** appear to deviate significantly.	Analyse the business against its peers and against its past performance. Understand **who** has significant amounts of related party transactions.	Analyse profitability **between** MNEs. Identify those **which** appear to have low profitability relative to industry peers.	Analyse functions performed in the jurisdiction at a high level. Identify those **who** have significant operations in the country.
Phase 2 What Issues Do They Have	Understand broad industry value chain and the associated tax issues and what indicators reveal their possible existence.	Understand the market and how that may impact upon the likelihood and consequences of a tax issue being present.	Understand the business's economic and tax performance. Understand the reasons for any divergence in key ratios and balances.	Examine financial accounts over time. Understand the reasons for tax performance that is below reasonable projections.	Perform an initial functional review to identify those functions that appear to be significant and of concern.
Phase 3 Audit the Evidence	A process similar to the following four steps should be used when undertaking an audit of transfer prices: **Step 1**: **Identify** the actual conditions. Gather and review the facts/evidence. **Step 2**: **Analyze**—Identify and adjust for comparable circumstances relevant to arm's length condition. Select best arm's length method **Step 3**: **Apply** the transfer pricing rules to achieve consistency with the relevant guidance material. (e.g., OECD, UN, country specific) **Step 4**: **Update**/amend transfer prices if necessary. Decide on roll back/roll forward aspects. Monitor ongoing compliance.				
Phase 4 Resolve Issues	Resolve the adjustment with the taxpayer and other relevant tax administrations (MAP). Identify who else in the industry/market may have similar issues and consider whether to provide additional guidance or if compliance action is warranted.				
Links	https://www.ato.gov.au/Business/Large-business/In-detail/Large-business-bulletin/Current-edition/Large-business-bulletin-September-2014/?page=5 (for an example of a broad market analysis and strategy including for the energy and resources sector). https://www.ato.gov.au/WorkArea/DownloadAsset.aspx?id=37943				

Table C.2: Key sources of guidance in phases of TP verification and audit

Phase	OECD Guidance	Un 'Practical Manual on Transfer Pricing for Developing Countries'	IRS 'Transfer Pricing Audit Roadmap' Example	ATO 'Large Business and Tax Compliance' Example	International Auditing Standard
Phase 1 Who Is of Concern	**'Dealing Effectively with the Challenges of Transfer Pricing'** Chapter 2: "Selecting the right cases" '**Draft Handbook'** Chapter 5	8.3. "Selection of Taxpayers for Transfer Pricing Examination: Risk Assessment"	"Pre-Examination Analysis"	"Case Selection"/Risk Profiling	N/A
Phase 2 What Issues Do They Have	**'Dealing Effectively . . .'** Chapter 3 "Getting off to a good start" '**Handbook**' Chapter 3	8.5 "Preliminary Examination"	"Initial Risk Analysis"	"Risk Review" (Transfer Pricing Risk Review)	ISA 200 ISA 315
Phase 3 Audit the Evidence Adjust Issues If Needed Advise on Future Treatment	**'TP Guidelines for MNE and Tax Administrations'** Chapter I: ALP D.1.2 Factors determining comparability: > Characteristics > Functional Analysis > Contractual Terms > Economic Circumstances > Business Strategies Chapter III: Comparability Analysis	8.6 Audit Procedure 8.7 Narrowing of Issues: Development of Tax Authorities' Position	"Execution" Gather facts Perform comparability and functional analysis Perform economic analysis Perform legal analysis re proposed adjustment	"Audit" Gather facts and identify the actual conditions present Select the most appropriate and reliable method Application of the transfer pricing rules Adjust if needed and monitor	ISA 500 ISA 520 ISA 530 ISA 550 ISA 700
Phase 4 Resolve Issues	**'Dealing Effectively . . .'** Chapter 6 'Reaching a decision point' **TP Guidelines:** Chapter IV	9 Dispute Avoidance and Resolution	Resolution	Dispute Resolution/Settlement	
Links	http://www.oecd.org/site/ctpfta/49428070.pdf and see http://www.oecd.org/tax/transfer-pricing/Draft-Handbook-TP-Risk-Assessment-ENG.pdf	http://www.un.org/esa/ffd/documents/UN_Manual_TransferPricing.pdf	http://www.irs.gov/pub/irs-utl/FinalTrfPrcRoadMap.pdf	https://www.ato.gov.au/uploadedFiles/Content/LB_I/downloads/BUS16985lrgbustaxcomp.pdf	http://en.wikipedia.org/wiki/International_Standards_on_Auditing

ultimately the basis for measuring improvements in system-wide profit and tax outcomes and trends in taxpayer behavior. While this aspect may be seen by some as lower priority for administrations focused in the first instance on the establishment of a viable compliance framework, it is something that becomes important as the system matures and should be built in from early stages. These processes will be facilitated by the implementation of the three-tiered approach to transfer pricing documentation as outlined in BEPS Final Report Action 13, in particular, the country-by-country (CbC) reporting framework as discussed in section 7.6 below.

7.1.1 Phase 1—Who is of concern?—Case selection

This section will provide an outline for how the tax administration can identify whom it should look at because of relative tax risk.

To get a sense of the more specific risks and who presents those risks, tax administrations must develop an understanding of:

- Which MNEs conduct mining operations in their country;
- The business structure (both legal and operational) used by each MNE to undertake mining operations in the country and how that structure fits within the MNE's global legal and operating structure;
- The high-level financial performance of those MNEs globally and of their mining subsidiaries and other entities in the host country; and
- The relative performance of the various MNEs and mining companies that operate in the host country. It can be difficult to separate poor financial performance due to profit shifting through transfer pricing and poor financial performance caused by other reasons, such as inadequate administrative capacity, macroeconomic factors and business conditions including cost and capital expenditure constraints. Insights to filter out those miners more likely to be undertaking profit shifting or transfer pricing can be obtained by comparing line item costs and profitability against:
  - Peers—similar but unrelated mining operations. This may include comparing prices achieved for sale of the same or similar commodities by other miners or published market prices and general industry trends (e.g., if the industry reflects increasing demand and higher prices it would be unusual for a mining company to be reflecting losses or decreasing profitability),
  - Parts—other parts of the MNE's business involved in the mining chain, especially those in other countries, and/or
  - Past—historical results.

It is this understanding that will lead to selection of the best cases for audit or other action. This case selection should be based on a ranking of the risk and the order in which a tax administration might want to be able to review them. This will mean that scarce tax administration resources can be deployed for the best long-term return on their investment. Resource allocation may not necessarily be based on the highest short-term audit results, even if they may appear potentially attractive and a balance between a long and short time horizon is sometimes needed.

A much greater understanding of the specific mining company is also needed by tax administrations to identify and undertake the action required to address the issues. This is where formal information and evidence gathering are crucial, and more in-depth analyses will be done in an audit or other process.

Where a MNE undertakes mining activities in an African country, it is usually required to do so through a subsidiary resident in that country, established specifically to own and operate the project. This mining company should have clearly articulated accounting policies relating to transfer pricing, and maintain documentation (including contemporaneous documentation) that demonstrates these prices have been set in line with the arm's length principle as expressed in the tax

legislation of most African countries, which generally reflects the principle set out in the OECD Transfer Pricing Guidelines. There will ultimately be four layers of transfer pricing documentation:

- Global/master file;
- Local transfer price documentation;
- Country-by-country reports under BEPS; and
- Local transfer pricing forms.

In determining whether the transfer prices used by a mining company are consistent with the arm's length principle, tax administrations in the country where the mine is located (host country) may need to audit some of the 'higher-risk' local mining companies. How the tax administration decides whom to audit is the result of a process of case selection and risk assessment.

The ***Case Selection*** phase can be conducted using information that is publicly available, or acquired from analytical firms or industry bodies, as well as basic tax file data. It is recommended that the tax administration evaluate and fully understand the extent of the public data sources available in the country. Preferably, the basic tax file data would be supplemented by a questionnaire about international arrangements and related party transactions. Many developed countries have such schedules as part of their tax file, e.g., Australian International dealings schedule,[144] and it has been found to be critical in enabling risk based case selection as well as facilitating subsequent audit activities. In addition, some companies may publish a summary of related party transactions in their quarterly and annual financial reports. Communication with taxpayers may not be necessary at this stage, unless there is a clear need for supplementary information discussing related party transactions, or to acquire some additional basic information.

It is suggested that analysis for the case selection phase starts with:[145]

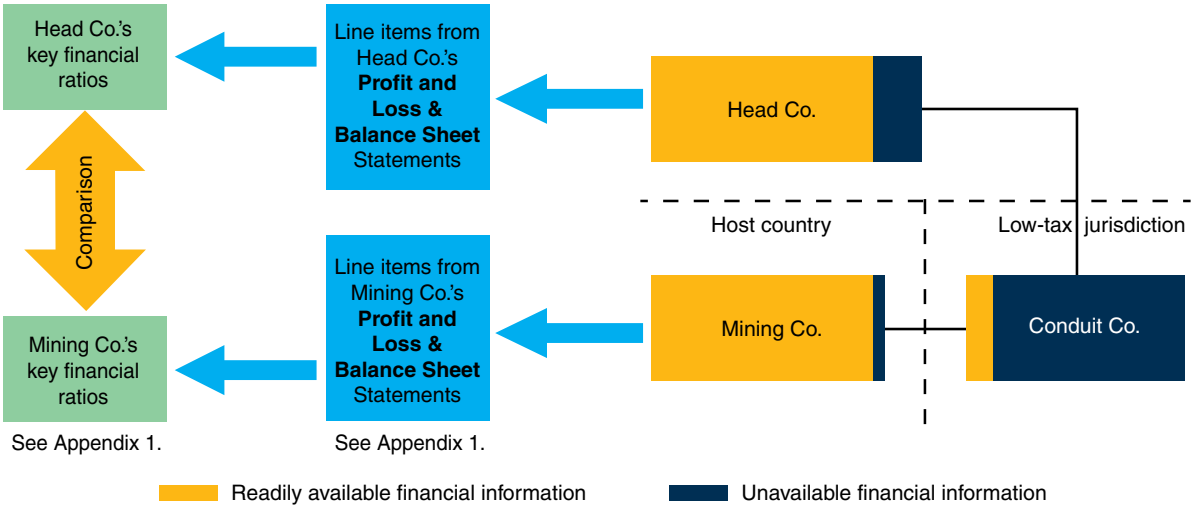
- **High-level profitability analysis**—Comparisons of the aggregated financial performance of the mining company relative to that of the parent MNE, and preferably over several time periods to identify and understand underlying trends. Consideration should be given to the presence and impact of economic cycles over time. For this comparison, data from the tax file of the mining company and subsequent questionnaires and the financial accounts of both the mining company and the consolidated MNE are used. As diagrammatically shown in Figure C.1, while information is readily available for the mining company in the host country, and generally for the MNE at the consolidated level, depending on where it is registered, financial information about any of the possible conduit companies registered in other, often low-tax, jurisdictions is generally largely unobtainable. An exhaustive list of possible line items of financial information, ordered in the standard format of the Profit and Loss account and of the Statement of Financial Position (Balance Sheet) as modified from the ATO/OECD analytical training spreadsheet (OECD, 2013), which should be sought is provided in Appendix C.1. This appendix also shows the range of ratios that could ideally be generated if exhaustive financial information were readily available to carry out comparisons between these two entities preferably over a reasonably long interval of time. It is important for the tax authority to clearly determine whether a transaction is correctly identified as recurrent, thus impacting on the Profit and Loss Statement, that is to say affecting the entity's profit and level of taxation, or classified as a capital expense and recorded on its Balance Sheet.

  The tax authority may be alerted by circumstances where the mining subsidiary is displaying an inexplicable lack of profitability and consistently lower financial ratios relative to the MNE's corresponding ones over a protracted period of time. This type of analysis

[144]Taxpayers with certain international arrangements are required to complete an international dealings schedule (NAT 73345) which is to be filed with their Australian income tax return.

[145]Chapter 2. OECD (2012), Dealing Effectively with the Challenges of Transfer Pricing, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/9789264169463-en

Figure C.1: Diagrammatic indication of the amount of financial information readily available to a tax administration, which is generally large for the mining company in the host country and for the MNE at the consolidated level and scanty for most of the conduit companies registered in low-tax jurisdictions. The figure also shows how this information can be utilized to calculate a range of key financial ratios allowing comparison between these two entities.



and resultant ratios also allows comparison to peers within the sector in terms of effective tax rates, tax to sales, tax to earnings before interest and tax, and tax to accounting profit. This type of ratio analysis is helpful in case selection, but has limited economic relevance.

Although the courts have shown a marked preference for the use of CUP whenever possible, both industry and tax administrations (e.g., the IRS) have been making increasing use of the TNMM and related key financial ratios. In this context, the OECD (2011)[146] suggests the seven key Profit Level Indicators (PLIs) listed in Appendix C.1.

The profitability analysis needs to be informed by other sources of data, which will better enable the tax administration to decide who should be looked at as a matter of priority. This includes:

- **Broad/global industry analysis**—Identification of mining activities undertaken in the country, what minerals are mined, what mineral products are exported and in what form and volume, and identification of the MNEs that have operations in the host country. The goal is to identify which mining operations have the largest turnover or cash flows.
- **Market analysis—**High-level overview of the prevailing global, regional and local market conditions for the major mineral products produced and exported by MNEs from the country. Gaining insights into the level of prices that could reasonably have been expected to be achieved on the basis that the commodity could have been sold to an independent third party at the point of export from the resource country.
- **Business analysis**—This includes an overview of the global business of the MNEs with operations in the host country and an understanding of the global business in relation to the activities that are undertaken in that host country. It is important at this stage to understand which MNEs have the most significant level of related party transactions. Ideally, this analysis should also reveal the nature of those related party transactions and whether they involve hard-to-quantify intangibles. This analysis also requires a high-level understanding of the corporate/legal structure of the global business and in particular the parts of the MNE that interact with the host country.

[146]OECD, 2011, Working draft on Chapter 5 of the Practical Manual on Transfer Pricing for Developing Countries.

At the end of this phase, the tax authority should have an adequate understanding of the MNEs and a sense of which of those MNEs' local operations may need to be further reviewed and why. This will be largely informed by market conditions, and based on a ranking of turnover, profitability and the level of related party transactions.

7.1.2 Phase 2—What issues do they present?—Risk assessment

This section will provide an outline for how the tax administration can identify priority issues for the taxpayers who have been identified to be looked at in Phase 1, case selection.

Risk Assessment involves looking at the specific mining MNEs that have been identified in Phase 1, but more importantly, drilling down deeper into the activities of each MNE and its operations within the host country. At this stage it is likely that the tax administration will need access to information from other government agencies, the MNE itself and publicly available information from analytical firms, as for example, credit rating firms and industry bodies.

- **Functional analysis**—Understanding of the goods and services that are produced or received by the mining company, especially when involving transactions with other parties within the MNE group. This analytical stage satisfies the need to identify who does what and in what legal capacity, as well as to identify the major contracts, especially those with other parts of the MNE group and any other significant issues. A questionnaire for guiding this functional analysis is provided in Appendix A.4 and discussed in further detail in section 4.2. Using the mining value chain, identify the different entities and the functions they perform (i.e., processing is done in the host country, marketing by an entity resident in a foreign country), classifying them as main (primary) and support (secondary) functions and where the functions are performed. One must also determine how individual functions are split among the various entities within the MNE group and evaluate their relative contribution to consolidated profits. The nature of the related transactions, including mapping of the functions performed, risks borne and assets (including intangibles) employed or transferred by related companies, are the essential factors that should be taken into consideration in determining the appropriateness and compliance of the transfer prices adopted by the MNE with the arm's length principle. This analysis should extend to cover both where the functions are performed and who undertakes them, as well as what occurs in practice, i.e., where value is actually added, that is to say comparing form and substance, thus identifying potential mismatches.
- **Detailed profitability analysis**—Understanding of the disaggregated business arrangements and transactions affecting the profitability of an individual mining company. This includes arrangements that give rise to revenue and expenses and the resultant accounting profit. Initial benchmarking of the profit against that of the industry sector at large and, in particular, the profitability of the sector from the perspective of the host country and the countries where the minerals are ultimately used. For example, for iron ore, this would involve looking at market prices and industry benchmarking, including sales to China (a major buyer of iron ore) from Australia and Brazil, and then pay particular attention to sales originating from African countries, as discussed in more detail in Part B. Potential reasons to explain competitiveness need to be identified. For gold it would, for example, include looking at published market prices as well as benchmarking in the industry, although valid CUPs are hard to find.
- **Tax analysis**—Understanding of tax-effective accounting undertaken by the mining subsidiary and the MNE. It is important to understand any variances between the tax and accounting computation of profits and losses, as well as the structures and financial arrangements that are used for global tax planning by the MNE and, in particular, the role of the local mining company in those arrangements and how they affect the tax paid by that company in the host country.
- **Mining value chain analysis**—Identification and mapping of the value chain for the particular mining activities from the exploration discovery of the resource through to the

ultimate sale to the final customer. The analysis will reveal the degree of vertical integration relative to the point in the chain at which the mineral product is sold to an unrelated party or transferred to a related one.

At the end of the risk assessment (Phase 2) the tax administration should have an informed/refined ranking of which MNEs and their subsidiaries need to be further investigated, as well as the identification of potential transfer pricing issues and the controlled transactions involved. The ranking of these MNEs, along with the risk of transfer mispricing estimated in terms of likelihood of occurrence and value of its consequence results, form the pool of potential audit cases.

7.1.3—Phase 3—Audit

This section will provide an outline of how the tax administration can audit the evidence to support an adjustment to tax payable if needed (or other action to mitigate the identified risk) in response to noncompliance with the arm's length test by a miner.

This phase can be thought of as having **four steps**, though in practice there can be a degree of iteration between each step as the audit moves to completion.

Step 1. Identify the actual conditions—The **first step** in the audit phase is the identification of actual conditions of the controlled transactions between related parties, including the contractual arrangements setting out terms and conditions, so that for transactions of concern can be accurately delineated for subsequent comparability considerations. This includes identifying the relevant economic characteristics of the accurately delineated transaction.

The extent of information and evidence gathering builds upon the analysis done in previous phases particularly the Risk Assessment phase. Importantly, this more detailed functional analysis of specific controlled transactions or arrangements will focus on the material **functions** performed (in the host country and elsewhere), the **assets used** in performing those functions and the **risks associated** with their performance. This step is crucial to understanding how transactions, as outlined in contractual arrangements, are implemented in practice and if they are indeed carried out as prescribed in the relevant contracts.

This step needs to be done with the level of rigor that would, if required, enable a successful adjustment to tax payable negotiations leading to settlement, or failing that litigation.

The gathering of information and evidence will require communicating with senior officers of the mining company, including the tax manager (and possibly other related entities), obtaining original source documents, requests for the mining subsidiary to provide answers to written questions, or interviews with key personnel in the supply chain. Information from other third party sources may also be needed, for example, from banks, other government agencies (e.g., mines department and customs) and from tax administrations of other countries (especially where there is an exchange of information agreement in place).

The evidence gathering should include a thorough review of any contemporaneous transfer pricing documentation that is maintained.

The tax administration should seek the following information during step 1 of the Audit phase to establish the facts about the transfer or sale of products by the mining company:

- Location of the mine/s;
- Copies of contracts of sale between the mining company and purchasers (related and third parties);
- Copies of contracts between any related party intermediary and third party purchasers. The mining company may claim that it does not have this information and is unable to

provide it, even though it can be assumed that it would be within the MNE's ability to provide access to these relevant contracts;
- Explanation of the mining value chain as it relates to their operations, from extraction, processing, haulage, loading for export from the host country;
- Volumes, quality specifications and dates of export from the country;
- Any export control approvals for the commodity;
- Who chooses, authorizes and controls sales to third parties;
- Who chooses, authorizes and controls sales to related parties;
- Who negotiates sales contracts and whether they operate autonomously;
- Who determines product pricing and how these determinations are made;
- What is the currency of product sales and transfers; and
- Who bears any currency exchange risk between the currency of product sale/transfer and the domestic currency, and how is the exchange rate calculated.

Where a related entity, such as a marketing hub, is located in a foreign country and interposed in the sale between miner and an unrelated third party, the tax administration may be denied information about the terms, conditions and price of the sale to the third party. This may be the case even though it should be expected that it is within the ability of the MNE to provide that information, and the resulting lack of transparency may be deliberate to frustrate the tax administration's ability to properly determine the arm's length price. The protracted and frustrating communication period of soliciting the release of this information can take many months and even years, yet ultimately may be unsuccessful. Second best evidence, such as computed reference prices, may need to be used to progress the case in a timely manner if access to relevant information is frustrated.

Step 2. Comparability analysis and adjustments—Having gathered relevant evidence, **step 2** of the audit phase involves a **comparability analysis and selection of the most appropriate transfer pricing method**. This step establishes and determines the degree of comparability between controlled (related party) and uncontrolled (independent) transactions. The OECD identifies five comparability factors:

I. **Characteristics of the property or services**—For example, it must be ascertained whether the controlled and uncontrolled transactions are the same or different, and in the latter case to what extent, and what adjustments may be necessary. This must reflect
   - what is being mined (type, quality, quantity, etc.);
   - when and where it is mined;
   - whether significant technical and unique design features are involved, or well-known relatively simple mining and processing methods;
   - whether significant haulage is undertaken and mechanisms by which this is done;
   - what further refining, smelting, blending and other forms of processing take place and where; and
   - ultimately, what is the mineral product that is sold or transferred.

II. **Functional analysis**—Looking at the functions undertaken for both the controlled and uncontrolled transactions/arrangements, to ascertain whether there are any material differences (taking into account assets used and risks assumed) and if so, what are they and what are the possible alternative comparability adjustments that could be made. For example, if the controlled arrangement involved a significant long rail haulage function, whereas the uncontrolled arrangement was located close to port, an adjustment reflecting the difference in value of that haulage might be necessary to make them comparable.

III. **Contractual terms**—Terms and conditions need to be analyzed for controlled and uncontrolled arrangements, looking at how the responsibilities, risks and benefits are divided between the parties. For example, determining what comparability adjustment would be needed if a controlled arrangement included a significant price discount benefit for shareholders in its contract for sale, whereas an uncontrolled transaction did not include such a benefit, as described previously in Box B.11 relating to a major iron ore mine in West Africa.

IV. **Economic circumstances**—The arrangements undertaken by the parties being used for comparison, both the controlled and uncontrolled, are looked at to determine what their respective circumstances are. For example, are they in the same geographic market or are they at the same or different stages in the product cycle (is one starting up a new mining venture that still has high levels of financing for its capital investment or is it a long-established miner where its capital investment has long since been recouped).
V. **Business strategies**—Looking at the strategies of the parties involved in both the controlled and uncontrolled arrangements may reveal if they are undertaking the same or different business strategies. For example, one might be engaging in a market penetration strategy by pricing their product to increase their global market share, while the other may be reacting to a market penetration strategy.

The information requirements differ somewhat between the five transfer pricing methods presented by the OECD (2010). For example, some methods place a high degree of comparability on products while others on functions, and some are one-sided while others are two-sided analyses. Comparability analysis both assists, and in return is informed by, the selection of the most appropriate or best method for identifying arm's length conditions.

Step 3. Apply the most appropriate transfer pricing method—The next step (**step 3**) of the audit phase is the application of the transfer pricing rules to determine an arm's length price or price range (or if the most appropriate method was either the transactional net margin or profit split, the arm's length net margin or profit range). OECD guidance material is used by its members and is normally adopted by nonmembers at this step for consistency in the application of arm's length principles. It is important to 'check' the economic rationality of the prices or profits derived. If the result appears unusual it may indicate that some economically relevant factor has been missed or not properly considered.

Step 4. Amend the transfer price if needed—The final step (**step 4**) of the audit phase is to see if the price (or net margin/profit) determined in step 3 is materially different from that used by the taxpayer for the relevant period, and, if so, the difference should be identified and calculated. If the arm's length price (or net margin/profit) is materially different than that used by the taxpayer then the taxpayer should be made aware of this in writing. Many tax administrations do this in a 'position paper' that outlines the initial findings. It is usual for the taxpayer to be given time to consider the potential adjustment and to respond with corrections to any incorrect facts, or clarifications to the functional profile of the business.

It is important that the tax administration carry out the calculations to enable issuing of a tax amendment quickly, as it is common for taxpayers in the mining sector to seek to negotiate the quantum of a proposed adjustment at this stage before any formal additional tax payable is assessed. While it is important for auditors to be open to taking into account any new facts or evidence if they are material and relevant, undue delay in issuing assessment of additional tax has shown to significantly delay collection, and possibly the quantum of additional tax. Prompt finalization of the audit stage by the issue of amended tax assessments can be useful to crystallize the quantum of any potential dispute and move the parties to an appropriate resolution in a more timely way.

7.1.4 Phase 4—Resolve issues

This section will provide an outline for how tax administrations can resolve disputes arising from the audit phase.

As soon as a mining MNE indicates that it wishes to dispute an audit resulting in a transfer pricing amendment, the tax administration should put in place a specialist negotiating team. The vast majority of transfer pricing matters/disputes are settled by negotiation in a way that is permissible under the host country's domestic legislative framework. The settlement should include certainty about prior years to be adjusted, the so called 'roll back' period. In addition, it may also include

a 'roll forward' position in an attempt to reduce the incidence and ideally avoid future disputes on the matter. The audit outcomes may also serve as a basis for the negotiation of a possible APA, where permissible.

Where the tax administration adjustment is disputed, or where relief of double taxation is sought, the process usually involves further negotiations with the taxpayer, and may also involve the use of arbitration, obtaining expert evidence, dealing with objections, appeals and potential litigation. Discussions with relevant overseas tax authorities regarding the Mutual Agreement Procedure (MAP) to reduce double taxation that might otherwise have occurred as a result of the adjustment may also be undertaken at this phase.

While it is tactically important that this phase be dealt with objectively and separately from the earlier phases, it nevertheless needs to be properly informed by the significant investment made in gathering and analyzing information and evidence during the audit phase.

7.1.5—Process summary

The entire transfer pricing compliance process, from ***Case Selection*** to ***Risk Assessment*** to ***Audit*** and to ***Resolution,*** is technically complex and can take a number of years to complete. Each case is a considerable resource investment by the tax administration, including opportunity cost, and hence it is important that the right taxpayers are selected and reviewed in the right manner (Figure C.2).

The excessively long timelines, as displayed in Figure C.2, may be counterproductive to reaching satisfactory resolution as participants (in both the tax administration and the mining MNE) may change resulting in a reduced understanding of the circumstances that surround the case in question. Therefore, as a matter of good practice, it is suggested that tax administrations ensure each phase is commenced promptly and conducted according to timely compliance plans to achieve shorter overall timeframes. It may also be possible to impose shorter timeframes on some of the taxpayers' procedural obligations.

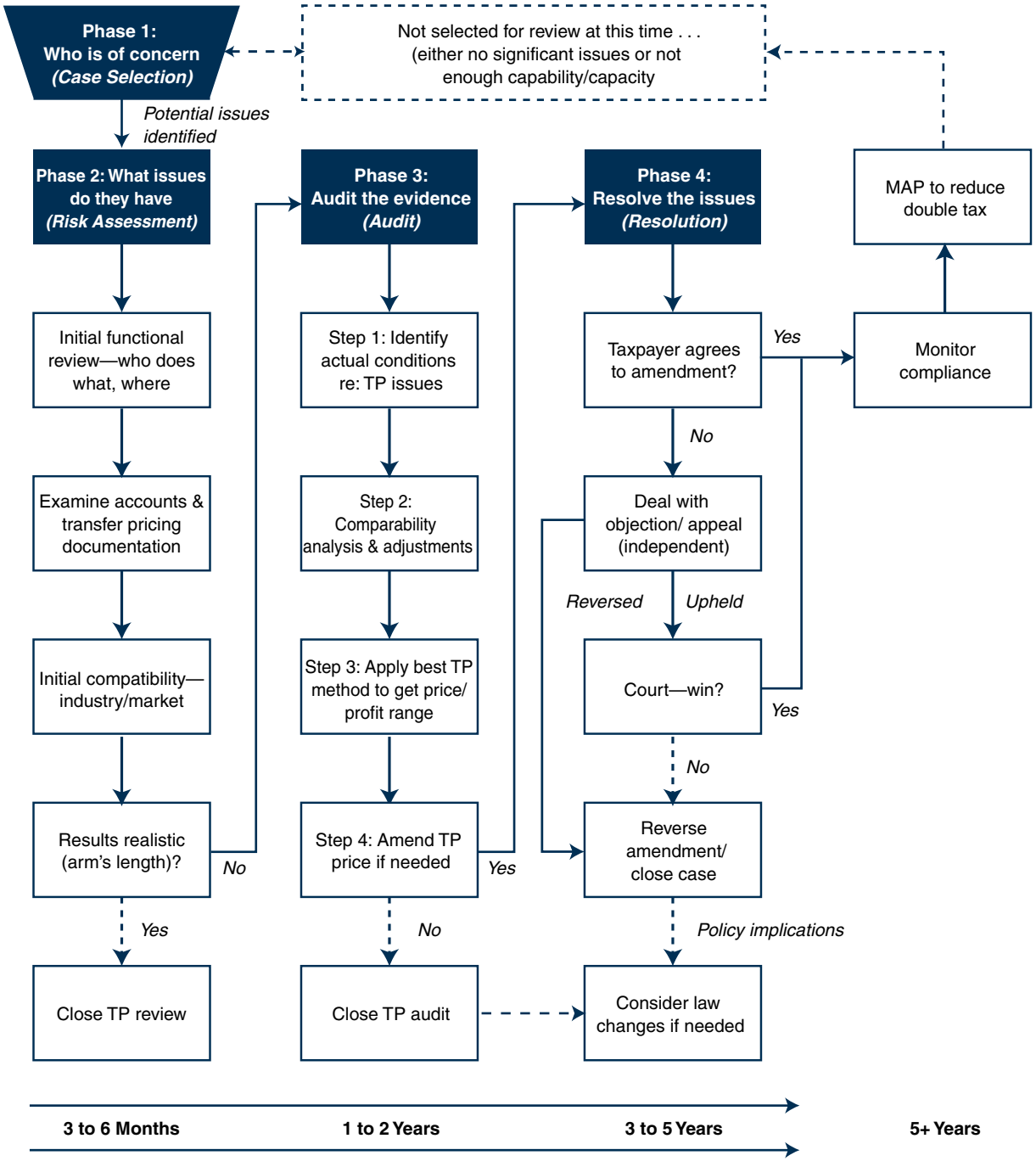
7.2 Availability of Transfer Pricing Analytical, Compliance and Auditing Skills and Resources

Different knowledge and skills are required during the four phases in the transfer pricing compliance process (see section 7.1 and Table C.1), from case selection to resolution.

To effectively deal with transfer pricing, tax authorities need to have access to expertise in a variety of areas, including:

- Legal and tax technical—knowledge of international law (including international commercial law and international transport law), domestic law and the specific tax laws.
- Economic—knowledge of economic theory and analysis at the global, country and sector level. In addition, there is a need for specific knowledge of economic analysis methods that have been developed to deal with issues of transfer pricing (especially those consistent with the OECD Transfer Pricing Guidelines). These skills are most often held by industry economists with a microeconomic specialization and an understanding of how the economic value chain works in a specific sector.
- Accounting—knowledge of international accounting standards, country standards, and practical experience with the preparation of accounting and financial reports, including those in an international context. In addition, forensic accounting expertise may be needed.
- Finance—expertise in financial analysis, project modeling and evaluation, risk and decision analysis in the context of mining projects.
- External auditing—knowledge of audit processes and experience in applying them to the review of the financial accounts of large corporates and/or MNEs.

Figure C.2: Transfer pricing active compliance phases



- Tax auditing—experience in undertaking tax audits and obtaining requisite information for validation, adjustment, negotiation and/or litigation.
- Tax advice—experience in the provision of tax advice to MNEs including advice on transfer pricing issues and corporates structures.
- Database experts—to effectively conduct comparable searches.
- Industry—knowledge of the mining industry, of how MNEs structure themselves and operate in the global context and of the specific commodity of interest in the context of global and local issues.

- Risk and intelligence—ability to obtain and make sense of sources of information about the taxpayer in question and relative risks.
- IT skills—to access and analyze electronic information, including data and text mining expertise.
- Interviewing skills—to effectively extract relevant information required to determine the substance and/or classification of the transaction under review.
- Negotiation—experience in high-level corporate negotiations, including at the international level.

While many tax administrations have a strong preference to build and grow their internal capability in all these areas, it can be very difficult, costly and take many years (often decades) to achieve at the depth required to maintain a continuing functioning unit. Even developed countries that have been building capability and undertaking transfer pricing work for decades have very mixed outcomes. A comprehensive paper by the Boston University School of Law indicates that judicial decisions in many disputes in Australia, US, UK, Norway and Canada tended to favor the taxpayers, and these experiences have reinforced the trend and desirability to facilitate compliance and cooperation rather than litigation.[147]

Current capability in the skills outlined above in African countries is relatively limited, and it is critical, if transfer pricing issues are to be addressed in the next few years, to evaluate all skills mobilization options, including those for the use of external experts to enable sought after results in the short- to medium-term as local tax administration skills are being strengthened. It would also be necessary to design and implement a robust training program. If tax authority staff are trained in transfer pricing, consideration should be given to a 'return of service' clause to ensure an adequate recompense for the investment in their training.

As there is also significant demand by professional firms and MNEs for people with transfer pricing skills, opportunities to build capability in partnership with the private sector and having the potential to benefits all parties involved, should be sought and pursued. This type of collaborative approach can serve to reduce the turnover of key staff within government agencies, as well as defuse external competition for scarce skills.

In addition, to enhance dissemination and sharing of this specialized knowledge, future programs should make increasing use of complementary web-based training packages and e-learning platforms. As discussed in more detail in Chapter 8 below, some e-learning packages with a general transfer pricing focus already exist. However, these packages are not developed from the perspective of tax administrations. They are generally developed for small to medium size corporates to facilitate transfer pricing in a manner that would likely be acceptable to many tax administrations, with the focus primarily on pricing transactions rather than questioning whether arm's length parties would have entered into the transaction under the same terms and conditions. Therefore, it is suggested that they be complemented by developing government-orientated and sector-specific modules, one of which should focus on mining.

7.3 Is There a Role for TP-Specific Administrative Units?

One of the administrative issues that tax administrations will need to decide upon is an internal structure or design to effectively deal with transfer pricing issues, and more specifically transfer pricing issues in the mining sector in Africa. Transfer pricing in the mining sector clearly cannot be dealt with in a vacuum. In countries where the mining sector accounts for a significant proportion of the economy (and consequently tax revenue) and where the sector is dominated by foreign

[147]Ainsworth, R.T. and Shact, A.B. (2012). Transfer Pricing: The CUP—Case Studies: Australia, US, UK, Norway and Canada. Boston University School of Law, Working Paper No. 12-12.

MNEs, it will be appropriate for the tax administration to factor this into the design of its structure. Trade-offs will inevitably need to be made against other factors such as high volume low value (but nevertheless still important) work. Structural and design decisions for the tax administration will be influenced by a range of factors including:

- **Existing internal structure** and design of the relevant tax administration. Commonly used organizational structures may be based on the:
  - Type of tax (e.g., transactional (VAT, excise) or aggregated (e.g., CIT)), or
  - Specific functions undertaken (e.g., advice, risk and intelligence, audit, litigations, and perhaps policy), or
  - Market size (e.g., large, medium, small and micro business). Large business units may be further specialized into market sectors such as mining and energy, financial, etc.
- **Existing or preferred organizational culture** of the tax administration.
- **Business and economic characteristics** of the population of taxpayers and their interactions with the tax administration.

The trend in mineral-rich African countries in recent years has been, with a very few exceptions, for the establishment of a centralized large business unit, not specialized to any individual sector of the economy. The definition of what constitutes a large business is based primarily on exceeding a turnover threshold. An interesting variation is the establishment in 2009 of the Tanzania Minerals Audit Agency (TMAA) that acts independently of the Tanzanian Revenue Services. The TMAA "is mandated to monitor and audit mining operations, financial and tax records of mining entities, and ensure sound environmental management in all mining areas for large, medium and small scale miners." In addition centralized or regionally based medium-size units have also been established in many jurisdictions. Further discussion of these factors are set out in Appendix C.2.

Whatever structure is used for the overall tax administration, there is basically three broad ways of approaching the design of work units dealing with transfer pricing issues. These approaches need to cover all four phases of transfer pricing work, i.e., case selection, risk assessment, audit, and resolution. These broad approaches are:

1. **General**—Where the area dealing generally with a particular function (e.g., case selection or audit or resolution) also deals with transfer pricing issues when they arise.

   This approach has the benefit of using tax officers skilled in the particular work function (for example, skilled officers with quantitative measurement skills for case selection, or officers with general audit skills for the audit function) and having a broader cross-section view of tax compliance issues, of which transfer pricing is just one. However, it can lead to a situation where the officers skilled in a function become 'a jack of all trades and master of none' in relation to the issues.
2. **General with expert support**—Similar to (1) but where the functionally skilled tax officers in the general area are supported on transfer pricing cases by specialized advisors from a centralized pool of transfer pricing experts.

   This approach also has the benefit of having functionally skilled tax officers with broad tax issue skills, but with the addition of expert advice when and as needed. The pool of transfer pricing experts would include those with relevant specialist economic, legal, accounting and auditing qualifications.
3. **Stand-alone specialist**—Specialist units dedicated to dealing with transfer pricing issues across all industries, or possibly with subunits dedicated to specific industries such as mining. An example of a specialized large business unit in the South African Revenue Service (SARS) is described in Box C.1. Smaller TP units have also been established in other jurisdictions such as Kenya and Malawi.

   This approach has the benefit of highly specialized transfer pricing skills, but may not be able to maintain high-level functional skills (e.g., quantitative analytical skills) and may lead to 'tunnel vision'. This may also suboptimize the outcomes as other tax compliance issues, which may be of possibly greater economic significance for the country, may not

Box C.1: South African Revenue Services (SARS) Large Business Centre (LBC)

Transfer pricing is mentioned as a strategic focus area in the SARS five year strategic plan from 2012–2017. SARS have a dedicated unit of 20 professional staff dealing with and enforcing TP rules. Considering the scale of mining-related international transactions in South Africa, it is prudent to have a special unit within SARS to manage the relationship with large (often multinational) companies. For this reason SARS established a Large Business Centre (LBC). The criteria for taxpayers to be administered by the LBC are:

- All taxpayers which form part of a group of companies with a consolidated group turnover of greater than R1billion,
- All mining and multinational groups with a consolidated turnover greater than R250million, and
- All financial services groups.

The purpose is to promote an optimal and voluntary compliance at lowest cost to both SARS and the corporate taxpayer. The LBC contributes to the four SARS strategic outcomes:

- Improved customs compliance;
- Improved tax compliance to maximize revenue collections;
- Increased ease and fairness of doing business with SARS; and
- Increased cost effectiveness and internal efficiencies by improving governance and maximizing return on investment.

Enforcement is done by first, the administrative unit, second, self-regulation through the MNE developing a TP policy and third, since 2001, through an annual declaration questionnaire. The intention is to collect detailed information on:

- MNE transactions, starting at the mine through to marketing agencies across international borders, along with entity ownership structures;
- Understanding hedging and treasury arrangements;
- Tracking IP transfers as part of international transactions;
- Understanding services transactions; and
- Thin capitalization/ funding arrangements.

be adequately identified or dealt with (e.g., thin capitalization, capital allowances). Staff specialized with a relatively narrow compliance focus may also find it difficult to compete for broader promotional opportunities and may, as a result, have relatively limited career pathways.

An observation about highly specialized units with narrow industry-sector focus is that they tend to introduce a degree of inflexibility into the organizational structure that can, if circumstances change, make required adaptation to those new circumstances more difficult, protracted and costly. For example, setting up a transfer pricing unit with deep understanding and skill in diamond mining may, given the degree of difference in the functions and processes involved, lead to some difficulty in adapting such a unit to gold mining or another sector should the diamond mines shut down. Transitions, however, would be easier among commodities with similar mining and processing technologies as the required skills are often transferable, e.g., different base metals. The trade-off between the effectiveness that increased specialization may provide, and the resultant reduction in adaptability to change, must be kept in mind when setting up a highly specialized unit.

This structural question is an open one and, based on observations, there does not appear to be a uniform view internationally as to whether TP-specific units are preferable to alternative models whereby TP specialists provide advice to 'generalist' audit/compliance teams. A general overview

on the benefits and shortcomings of different organizational structures is presented in the general handbook on "Transfer Pricing and Developing Economies." Country experience suggests that for a transfer pricing team in its startup phase, with the transfer pricing regime still under development, a centralized approach will often provide for the most effective allocation of resources.[148] Regardless, the overarching point is a general one in relation to capability, and recognition that the 'skill set' for transfer pricing specialists is (on one view) different than other tax disciplines to the extent the arm's length principle is predicated on economic concepts, usually reliant on accounting information to inform the economic questions, with a statutory test that is designed to codify an economic concept into a 'bright line' legal test. Therefore, taken together it is a tax discipline that requires knowledge of economics, business/commercial dealings, accounting, and tax law.

Whichever model is chosen will involve a matrix management approach, but there will need to be a dominant organizing feature. Experience has shown that in the capacity building phase, an approach that emphasizes functional coherence builds technical knowledge faster and more coherently, albeit at the cost of specific industry or taxpayer knowledge. For example, within a large business unit or a general audit unit, there may be a smaller group that specializes in transfer pricing issues. The skills in dealing with large corporations or general audit skills should enable members of the units to deal with other compliance issues with support from the transfer pricing experts to identify, analyze and deal with any transfer pricing issues.

7.4 Comparables Databases

Critical to Step 2 of the audit phase of a transfer pricing examination is access to key information and databases to undertake searches for comparable transactions to support potential comparability adjustments for calculation of an appropriate arm's length price, leading to possible adjustments to the taxable income and resulting tax payable. This entails a clear understanding of the functions performed, assets employed and risks assumed by the parties to the transaction under review. The next step is to determine the appropriate method to apply to the tested party to determine to what degree the transfer prices adopted are compliant with the arm's length principle and to look for relevant comparables. If there are no internal comparables available, regard must be had to external comparables obtained from a variety of sources and/or from specialized databases.

There are a variety of databases that contain information about different types of entities (e.g., distributors, manufacturers, service providers, etc.) and of transactions. A few these include: the big Bureau van Dijk's family of databases collectively known as Orbis and including Amedeus covering European firms; Osiris; OneSource; Oriana; TP Catalyst; RoyaltyStat, a database of royalty and licensing agreements; Global Symposium; and Fame. A more exhaustive list of commonly used databases and a brief description of their individual use/content is provided in Appendix C.3, while Appendix C.4 contains a list of currently available software packages designed to facilitate the determination of arm's length prices using some of the above databases.

Subscriptions to some databases can be very expensive and may not be affordable to some tax administrations in developing countries. There have been suggestions that one way to overcome this difficulty would be for a number of jurisdictions to pool their resources to gain and share access to relevant databases. However, to date this has not occurred in practice, but negotiations are in course for some developing countries.

Databases can be global (e.g., Orbis and Osiris) or regional in their composition. For instance, Amadeus focuses on Europe, Fame on the UK, and others on the Asia Pacific, the Americas or other regions. In the case of Africa, however, there are no specific databases. Furthermore, it is debatable

[148] Please refer to Chapter 8, "Developing a Transfer Pricing Audit Program" of the general World Bank handbook on "Transfer Pricing in Developing Economies" for further information.

if data actually exists to even compile one. Aside from the general lack of independent entities, there are, in the majority of jurisdictions, limited statutory requirements for independent companies to file and make publicly available relevant information, which is therefore extremely limited.

As a consequence, many countries in Africa are reliant upon foreign databases in transfer pricing examinations. At this stage it is estimated that about 50% of comparables used in the African context are derived from European information in Amedeus, and the remainder mostly from Asian databases. The choice of the database to be used is dependent on the country of origination and of destination of the goods and services supplied.

The pitfall of using foreign databases is accounting for regional differences and the ensuing need for comparability adjustments, as for instance relating to geographic location, size of market, risks such as political and country risk, differences in regulated versus unregulated markets, etc. In practice, comparability adjustments of this nature are difficult to institute, and hence, are not often performed, with the foreign database used as a starting point for negotiation where regional differences are highlighted and the impact of these differences on the interquartile range are debated. Furthermore, the financial reporting standards applied by foreign companies may differ from some African practices, adding to the complexity of using foreign-based databases, even though there has recently been a trend towards greater harmonization in financial reporting standards (IFR, IAS, etc.).

A lot of very useful information relevant to mining companies active in Africa can be derived from their reports to various stock exchanges. Of particular use are the Australian Stock Exchange (ASX), the Toronto Stock Exchange (TSX) and the London Stock Exchange's international market for smaller growing companies (AIM), as most mining companies with interests in Africa are listed on them. In addition, valuable company information, with emphasis on Africa, can also be obtained from the African Johannesburg Stock Exchange (JSE), and on commodity trading in an African context from the JSE-affiliated South African Future Exchange (SAFEX), the Mercantile Exchange of Madagascar and from the Mauritius based Bourse Africa.

Some databases, such as those from Bloomberg, Platt's and Metals Bulletin, focus specifically on commodities, and are therefore very relevant in the context of mining. Given the size of the cash flows relating to the transfer of mineral products, these databases are extremely useful in addressing issues relating to pricing. The paucity of comparables in the area of pricing of mineral commodities has recently been recognized as a major issue by the OECD, which has embarked in the compilation of a toolkit to assist in the assessment of transfer prices for some of the major mineral commodities, e.g., initially gold, copper and iron. The toolkit will contain detailed information about the downstream processing of the relevant ores, identifying the range of mineral products that may be marketed at various stages of their transformation from crushed and screened ore to refined metals. It will also contain valuable, and generally hard to obtain, information about the markets and pricing mechanisms for the various products.

Given these challenges to practically resolve a transfer pricing case, access to information becomes critical. In some African tax administrations, the process of gathering robust and detailed information on related parties transactions from other sources (such as other government institutions, and exchange of information requests with a tax treaty partner) have proven useful in reaching audit findings and resolution without resorting to arguing as to what point in a comparable range would be appropriate to the transaction under consideration.

7.5 Transfer Pricing Documentation

Documentation for transfer pricing is an ongoing issue for both tax administrations and MNEs. Useful material can be found in the UN Practical Manual on Transfer Pricing (Chapter 7), the OECD Transfer Pricing Guidelines (Chapter V) and in the OECD discussion draft seeking comments on the revised text for Chapter V issued in January 2014.

Figure C.3: The four phases of the transfer pricing process (for details see Table C.1)

The newly amended Chapter V sets out three objectives for transfer pricing documentation (Para 5, page 2):

1. To provide tax administrations with the information necessary to conduct an informed transfer pricing risk assessment;
2. To ensure that taxpayers give appropriate consideration to transfer pricing requirements in establishing prices and other conditions for transactions between associated enterprises and report the income derived from such transactions in their returns; and
3. To provide tax administrations with the information that they require in order to conduct an appropriately thorough audit of the transfer pricing practices of entities subject to tax in their jurisdiction.

The OECD discussion draft also sets out a two-tiered approach to standardizing transfer pricing documentation, comprising a master file (at the global or business line level) and a local file, but which ultimately will also include two further tiers, i.e., country-by-country reports and local transfer pricing forms. Significant improvements are expected in the coming years when both tax administrations and MNEs adopt and implement this approach.

Documentation requirements of tax administrations will vary according to the phase of work that is being undertaken as displayed in Figure C.3 and already detailed in Tables C.1 and C.2 in section 7.1, including,

Case selection (phase 1)
Access to information for case selection is necessary to enable tax administrations to make an informed decision about whom to audit. Obviously, additional information will be needed for the risk assessment (2) and audit (3) phases.

Information from a range of sources can be used in the selection of a mining company for a transfer pricing case, and documentation from the taxpayer is only one of those sources. Information from the taxpayer at this stage is likely to be found in their tax file and, if required, additional transfer pricing schedule of information.[149] Descriptions of the type of information useful for risk indicators can be found in the OECD Draft Handbook on Transfer Pricing Risk Assessment.[150]

The information from tax filings would be used in conjunction with other information, including:

- Financial accounts. Certain financial accounts are public and may be obtained for entities within the host country. In addition, it is important to seek publicly available financial accounts for other MNEs' entities, particularly, if available, those with which related party

[149]For example, Australian International Dealings Schedule, https://www.ato.gov.au/uploadedFiles/Content/MEI/downloads/TP39975NAT733452014.pdf.

[150]Public Consultation: Draft Handbook on Transfer Pricing Risk Assessment, 30 April 2013, OECD.

transactions have been carried out, and the consolidated MNE accounts. Even in low tax jurisdictions financial accounts are often available and they can be very useful in helping to understand who does what within the MNE and where the profits are booked.[151] That information is generally not visible by just looking at the consolidated accounts because intra-group transactions are eliminated during the consolidation process.

- Critical information about the taxpayer and the transaction under audit can be gleaned from its annual reports. Information such as strategic direction of the taxpayer entering markets; key value drivers of the business; specific industry information regarding the commodity; related and third-party transaction information; financial information regarding the profitability of the taxpayer against the group as a whole; and employee information, including salaries, can be derived from the annual reports.
- Information from other government agencies, as for instance, customs for export tonnages and quality details of the commodity sold.
- Analyst information, much of which is available over the Internet or may be purchased from a specialist analyst firm. Valuable information and insights so obtained will be useful for case selection, but will need validation at the risk assessment or audit phases.

At this relatively early phase, taxpayers will be very sensitive to the perception of unnecessary compliance burden if they are required to provide excessive information. Therefore, the overriding principle should be to use information that would be readily available to the taxpayer. This is the type of information they need to run their mining activities and business, to prepare financial accounts and satisfy regulatory filing obligations. The OECD refers to documentation requirements in terms of reasonableness and materiality.

Risk review and audit (phases 2 and 3)

It is at the risk review and audit stages that taxpayers are normally asked to provide more specific information and documentation to assess a particular transfer pricing matter or recalculate an arm's length price. Some mining subsidiary companies respond to information requests from tax administrations in a timely and reasonable manner, even where some of the information may need to come from other companies within the MNE. This enables audits to be undertaken efficiently and any necessary adjustments to the tax payable to be finalized appropriately.

However, in practice, it is not uncommon for some taxpayers to play the 'deny-delay-defeat' game response, whereby the tax administration is told that the information they require to do a proper transfer pricing risk review or audit of the company is not held in that jurisdiction, but held in a foreign country, and that approval of another company up the chain is required for its release to the tax administration. It is also not uncommon for tax administrations to be told that some of the information requested is of a confidential nature and cannot be disclosed.

Acquiring this information can take some time, create delays or even be met with legal challenges (so-called collateral litigation) on the basis that the company is not required to keep that type of information or that the tax administration has no right to enforce that the information be provided. Unfortunately, this approach may make it difficult to complete a timely and effective audit.

Alternatively, the 'distract-deflect' game response may be used, whereby requests for information during audits may be met by some MNEs providing massive quantities of data and information, only some of which is relevant to the audit. The administration is forced to look for the evidence 'needle' in the 'haystack' of irrelevant data. As the tax administration is not familiar with the data and information provided, nor the systems used, it may take significant resources to work through this mass of data to find the necessary and relevant information, and even then, the critical parts may sometimes prove to be missing.

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[151] http://www.smh.com.au/cqstatic/12z7v7/BHP%20Billiton%20Marketing%20AG%20AR$2014.pdf

On the other hand, tax administrations are frequently criticized, often with good reason but sometimes to create delays, for making imprecise and excessive information requests. Irrespective, information requests for documentation need to be both reasonable from a taxpayer's perspective, sufficiently precise to be complied with and adequate for tax risk assessment, audit purposes and possible litigation. The use of experts, including, if required, external audit firms, tax advisors and tax lawyers/advocates can assist tax administrations to prepare requests that could not reasonably be criticized as unnecessary. This is a good strategy to use when undertaking important audits where a lack of cooperation, tactical game playing or collateral litigation is anticipated.

Good case management practice suggests that discussions be held at a relatively early stage between the tax administration, the company (and other relevant MNE entities if they wish) and their external advisors to determine what and how the needed information can be provided in a timely and reasonably cost effective manner. This may lead to a schedule for the provision of information over a set period of time.

In practice, even with the best intentions of all parties, it is not unusual to find that some of the documents sought by the administration do not in fact exist, or that they will not be obtained by the tax administration within a reasonable time, if at all.

Therefore, tax administrations need to consider alternative sources for obtaining the information they require. One of these sources is through an exchange of information request with a tax treaty partner. However, as there are few bilateral treaties in place with African countries, becoming a signatory to the OECD multilateral treaty, as suggested in BEPS Action 15, would be a more effective information exchange vehicle.

Requests for information from other countries should be considered and made as early as possible in the risk assessment or audit process to enable sufficient time for the treaty partner to obtain and forward the required information. Exchange of information requests can take some time to be satisfied and the country may not have, and may not be able to obtain, the requested information, and in such circumstances a request might be of limited use.

Information access difficulties for a tax administration can be minimized where there is a legal framework that requires taxpayers to keep and/or provide the necessary information. The granting of power to the tax administration (or a law enforcement body) to enforce those requirements and access information, documents and premises for this purpose is crucial. Where information is not kept or cannot be provided, appropriate penalties need to be considered. The penalties are usually civil in nature and may include a monetary penalty and possible court orders for specific performance. In cases of fraud or misconduct criminal penalties may apply, but in practice this rarely arises in a transfer-pricing context.

In addition to penalties, it is suggested that consideration be given to legislation that provides an incentive to keep and make available the required information, and to not obstruct the tax administration in its proper auditing role. This incentive could be in the form of a rebuttable presumption to be granted to the tax administration enabling it to calculate tax on their views of the arm's length principle, if information is not provided by the taxpayer within a reasonable time period. For example:

- **Rebuttable presumption of price**—Assume the tax administration of Country X requests contracts, invoices, and bank records for the sale price of ore exported. If that information is not provided within say 90 days, then the tax administration of Country X may assume for tax purposes that the transaction price is the weighted average quoted price for each quarter during which sales occurred based on their estimation of the tonnages and relevant exchange rates. The tax administration's assessment will stand unless the company can rebut it in court, demonstrating that the tax administration's position is excessive using evidence, as for example, including source documents such as contracts, pricing

comparables, etc. If such an approach were to be adopted, it would be important that it also include a requirement that the company pays any legal and court costs incurred by the tax administration to ensure that it does not create an incentive to disregard the tax administration's requests and impose additional compliance costs on tax administrations.

- **Contractual alternative**—The royalty contractual conditions embodied in some mining agreements between governments and the entities with mining rights include terms that require the price for royalty purposes to be that paid by a purchaser to the entity or any associated entity, i.e., if a commodity was transferred from a mining company in Africa, to an offshore related party marketing hub, then onsold to an independent third party purchaser in China, the price is to be that paid by the latter party. Where such royalty agreements exist, information about the purchase price should be provided to the tax administration and legislation could require this price (less adjustment for appropriate costs) to be the arm's length price. Examples of provisions from royalty contractual agreements relating to iron ore mining in Western Australia are provided in Appendix C.5.

Advance pricing arrangements (APAs), although currently uncommon in Africa, depending upon what is included, may also be considered in the future as a cooperative and effective means of managing appropriate transfer pricing outcomes with taxpayers agreeing to provide necessary information and documents in a timely way. APAs will be discussed in greater detail in Chapter 8.

Contemporaneous documentation

There is another perspective on transfer pricing documentation that relates to ensuring compliance. Taxpayers need to evaluate, prior to the filing of their tax return, their own compliance with the transfer pricing rules. Requiring them to document their transfer pricing position helps ensure the creation of a culture of compliance (para 10 OECD Ch V update).

Creation of this documentation contemporaneously, that is to say at the time of the transaction or by the time they complete the preparation of their file, can restrain taxpayers from developing justifications after the fact (paras 10 and 11 OECD Ch V update). It can also create incentives for timely, careful consideration of their transfer pricing positions if backed by the transfer pricing penalty regime. Some countries require contemporaneous documentation to be kept and some take it into account as a specific factor in their transfer pricing risk assessment.

Hence, it is suggested that mining companies should be required to document their transfer pricing position at the time arrangements are entered into and whenever circumstances change. This would include when contracts are entered into with related parties. For example, if a 5-year contract were entered into with a related party, the documentation would articulate how the terms and conditions of the contract satisfy the arm's length principle. In addition, documentation of any changes to the contract, as well as practical application of the contractual arrangements, should be made contemporaneously or at least prior to tax filing each year. This would include, for example, the actual practical nature of the dealings, timing and pricing. Tax administrations should watch to ensure that definitions relating to what is expected as 'contemporaneous documentation' are as clear and unambiguous as possible.

There is a further question of whether, and at what stage, the contemporaneous documentation should be provided to the tax administration. One option is for the information to be provided in all cases with their tax filing. This is likely to create an unnecessary cost of compliance, and once provided, puts an obligation on the tax administration to review the material, potentially resulting in an inefficient use of resources. A more reasonable option is to require the contemporaneous documentation to be kept and provided within say 28 days of a request from the tax administration. Any such request is likely to be made during the risk assessment (2) or audit (3) phases, where particular issues have been identified.

It is important that key information in any documentation supplied be cross-checked against other disclosures made by the taxpayer in its financial reports, income tax returns, the MNE's annual

report and website, agreements entered into with related parties and third parties, exchange control submissions (in African countries enforcing it) as well as responses to the tax administration during the audit and other forms of audits, as for instance conducted in the context of VAT or customs.

Appendix C.6 provides a suggested list of documents that would be required by tax administrations during the risk assessment and audit phases for transfer pricing issues in the mining sector.

- Detailed examples of country experience in the design and implementation of reporting obligations are provided in Chapter 6 on "Promoting Taxpayer Compliance through Communication, Disclosure Requirements, Transfer Pricing Documentation, and Penalties" of the general WBG handbook on "Transfer Pricing and Developing Economies."

7.6 Country-by-Country (CbC) Reporting

BEPS Final Report for Action 13 contains revised standards for transfer pricing documentation and a template for CbC reporting. Chapter V of the OECD TP guidelines have been revised and three objectives for transfer pricing documentation have been outlined which, in summary, aim to:

- Ensure taxpayers give appropriate consideration to transfer pricing;
- Ensure tax administrations have sufficient information for transfer pricing risk assessment; and
- Provide tax administrations with information to assist in transfer pricing audits, recognizing that supplementary information may also be needed.

A three-tiered approach to transfer pricing documentation is proposed to achieve the objectives above. This approach comprises:

- Master file providing an overview of the MNE group business including an organizational chart, description of the MNEs business, intangibles (including R&D), financial activities and its financial and tax position.
- Local file providing more detailed information about specific related party transactions, including a description of the local entity and its transactions with related parties (including value, identification of parties, copies of agreements, comparability and functional analysis and method chosen and basis).
- CbC report which provides aggregate jurisdiction-wide information relating to the MNEs global allocation of income, taxes paid, and certain indicators of the location of economic activity based income. Reporting of the MNEs main business activities includes research and development, holding or managing intellectual property, purchasing or procurement, manufacturing or production, sales, marketing or distribution, administrative, management or support services, provision of services to unrelated parties, internal group finance, regulated financial services, insurance, holding shares or other equity instruments and dormant activities.

The CbC standards are intended to provide sufficient information for tax administrations to undertake transfer pricing risk assessment and as such they do not provide all the information needed to conduct an in-depth audit. The CbC information would nevertheless be very useful in an audit as a basis to identify further information requests and enquiries. The CbC standards set out an exemption for MNEs with annual consolidated revenue in the immediate preceding fiscal year of less than €750 million. This exemption strikes a balance between costs of compliance and the need for tax administrations to get necessary information as it excludes 85–90% of MNEs (many of which would be small to medium MNEs) while still capturing 90% of corporate revenues. When considering the size of the mining MNEs investing in Africa, it is not expected that the exemption will apply to many.

Implementation of the new standards will have far reaching potential benefits for developing countries, allowing them the ability to more easily access information on the global operations of MNEs that operate in their territories.

The concept extends the information provided by the Extractive Industries Transparency Initiative that has been progressively implemented, although on a largely voluntary basis, for some time, and is much more useful for transfer pricing analysis. Similar legislation is also currently being introduced across the European Union requiring companies operating in the extractives sector to publish country-by-country data. The disclosure required by the European Commission is on a project-by-project, government-by-government and country-by-country basis and includes data on the following:

- Income taxes paid;
- Bonus entitlements;
- Royalties;
- Dividends;
- License fees;
- Payments for infrastructure improvements; and
- Signature, discovery and production bonuses.

Similarly, rules have recently been finalized under the US Dodd Frank Act (section 1504) requiring certain information to be provided by extractives companies listed on the US Security and Exchange Commission (SEC), and while revisions to the requirements of the Act are expected, this legislation is expected to remain in force in spite of significant opposition from some quarters.

These initiatives present a big step forward adding to the pressure for greater transparency and disclosure by MNEs into the future as well as setting uniform standards and facilitating more sharing of information between tax administrations. However, the information produced by these initiatives, albeit comprehensive, will still need to be supplemented by additional specific information during in-depth transfer pricing audits.

Implementation of CbC reporting is being facilitated by the BEPS work on Action 13, including:

- Model domestic legislation for CbC;
- CbC to apply to MNEs for first financial year commencing after 1 January 2016;
- CbC reports to be filed with the country of residence of the ultimate parent company within a year of the end of their financial year;
- Automatic exchange of information arrangements are being developed for exchanges under the Multilateral Convention on Mutual Administrative Assistance in Tax Matters, bilateral DTAs and Tax Information Exchange Agreements.

It is eagerly anticipated by the tax administrations of many countries, albeit with a degree of trepidation by some in the industry.

7.7 Penalties and Statutes of Limitation

Penalty provisions in tax regimes act as an incentive for taxpayers to pay the correct amount of tax, and to penalize those who do not. There are three types of penalty related provisions that frequently arise in transfer pricing cases. While they are separate, they do operate in an interrelated way:

- Penalty for underpayment of tax—usually based on the amount of tax underpaid;
- Penalty for not keeping the required transfer pricing documentation;
- Interest on tax paid to reflect time value of money during the period while the tax remained underpaid.

It is common for MNEs to regard any penalty as a serious matter that needs to be reported to the Board, so it is important that imposition of penalties be appropriate and reasonable. A fundamental tenet for penalties is that they be proportionate to the wrongdoing, and it is important in the transfer pricing context, given the complexity and legitimate difference of views between a tax administration and a MNE's subsidiary taxpayer as to the application of the arm's length principle in determining the correct transfer price, that the imposition of penalties do not become counterproductive.

The level of culpability and the quantum of underpayment of tax are two factors that are relevant to determine a proportionate penalty. Where a taxpayer (including the broader MNE) has genuinely sought to do the right thing by both keeping good transfer pricing documentation and providing it in a timely way, but it nevertheless ends up paying a relatively low level of extra tax because of a difference in view on transfer pricing, the taxpayer should be regarded as having taken reasonable care, and any penalty should be reduced or eliminated accordingly. However, if the quantum of tax underpaid is significant, say, outside the inter-quartile price range for the relevant commodity, or if reasonable care has not been taken, then a percentage of tax underpaid would be an appropriate penalty.

Where the taxpayer or the MNE has been negligent, reckless or deliberate in not seeking to properly apply the arm's length principle or keeping and making adequate documentation available, then a higher percentage of the underpaid tax would be an appropriate penalty.

In addition to legislative requirements, the OECD[152] has as an objective that taxpayers appropriately consider transfer pricing requirements in establishing prices and other conditions in their dealings between associated enterprises and reporting for tax purposes.

Many African jurisdictions also have specific transfer pricing documentation requirements and related penalties, but some, as for instance South Africa, do not. It is not uncommon for African tax administrations to face difficulties in obtaining the necessary documentation to determine the true substance/classification of transfer pricing transactions under review. This may be due to a lack of statutory power to request such information from the foreign MNE, or a lack of access to DTA exchanges of information. Where the taxpayer and/or foreign MNE does not cooperate in clarifying the necessary information, then consideration could be given to a transfer pricing penalty that entitles the tax administration based on the most unfavorable point of the arm's length range identified (either by the taxpayer or the tax administration). This approach could be modeled, for example, on that used by the German tax administration.[153]

In addition to any penalty for a tax underpayment, the taxpayer should be required to compensate the revenue for the 'time value of money' lost as a result of the often protracted process of making transfer pricing adjustments. The 'time value of money' is an appropriate rate of interest that could have been earned by the government of the host country on the additional tax payable if it had been paid when the original tax was due. This approach could be modeled, for example, on the approach taken in the UK Regulatory Enforcement and Sanctions Act [http://www.legislation.gov.uk/ukpga/2008/13/contents].

Tax regimes provide varying **statutory limitations** on the period permitted for tax administrations to make adjustments. For transfer pricing adjustments, this period can vary considerably. Some countries have had unlimited periods, while others may have either just their standard period for all other taxes or a prescribed longer period. Good practice, including for transfer pricing issues, requires tax administrations to ensure filing is done on time and to undertake its risk assessment

[152]OECD TP guidelines—updated Chapter V.

[153]Section 162, paragraph 3, General Fiscal Code.

and commence audits in a timely manner. It is not good public administration and it is not good for investment or business for final tax liabilities to remain uncertain for long periods of time.

Nevertheless, given the complexity of transfer pricing audits and the problems often associated with obtaining documentation and data from taxpayers and third parties to establish arm's length pricing, it would appear that a period of 3 to 5 years from the time of tax filing should be sufficient. This is generally the length allowed by most African jurisdictions with a longer time (e.g., 6 or 7 years) allowed in a few instances.

However, arguably there should be no statutory period of limitation where the taxpayer has not maintained and made available to the tax administration adequate transfer pricing documentation. This means that taxpayers who take their transfer pricing documentation obligations seriously will obtain the benefit of a statutory period of limitation, while those taxpayers who do not keep and provide transfer pricing documentation should not be able to 'game play' such limitation periods.

It is also in the interest of good administration for statutory limits to act as an incentive for tax administrations to do their risk assessment and audit work competently and in a timely manner. Good practice for transfer pricing audits would suggest that analysis of the tax file data and requests for any additional information necessary for case selection should be made, preferably, within a year of the initial filing date. Risk assessment cases and audits should then follow where warranted, commencing within a few months (preferably within 18 months from the tax filing). Providing the information requests have been effectively complied with in a satisfactory manner, good audit practice would suggest that the audit should be completed and any necessary adjustments be made within a further period of about 24 months—longer if there are delays in getting necessary information. There is a direct relationship between information availability and audit duration in transfer pricing cases in the mining sector, and it is for this reason that information requests (from taxpayers, treaty partner countries, and other sources) need to be made early in the audit phase.

Following is a good practice example timeline from case selection through to audit (on the basis that taxpayers provide requested information in a timely manner):

- Tax file lodged 30 June 2016 (for year ended 31 December 2015)
  - Within a year (30 June 2017) undertake phase 1 case selection, and make any initial information requests.
  - Within a further six months (31 December 2017) commence risk assessment review (phase 2) on the candidate cases identified.
  - Within a further six months (30 June 2018) decide whether to carry out an audit on the issues identified, with a view to making an adjustment.
  - Within a further 24 months (30 June 2020) complete the audit and issue amended assessments. (A resolution phase may then commence if the taxpayer disputes the amended assessment of tax).

These good practice timeframes for actions of the tax administration may initially seem counter-intuitive, however, experience has shown that it is not unusual for audit staff, particularly those relatively new to the subject area, to wait until the last minute before requesting required information, or to overinvest or overengineer the evidence gathering and analysis stage (so called 'analysis paralysis', in other words display an inability to reach a conclusion from the evidence available). While not wanting audit processes to become deadline driven, there is a real need to improve case management, which is to say for them to be purposely progressed in a determined but always appropriate manner.

Having very experienced staff review the progress of review and audit cases at particular stage gates (e.g., guiding the information request) or periodically (every three to six months) assisting in keeping cases progressing in a timely fashion, can be a very effective approach. This approach would also help inexperienced staff gain expertise and build confidence.

7.8 Audit and Compliance Measurement

It is important that the tax administration has clear measures of success for compliance, especially audit functions. The traditional measures have largely focused on:

- Strike rates—proportion of cases looked at and adjusted, and
- Monetary size of adjustments—on a per-case basis as well as an aggregate measure over a period of time, usually annually.

These measures are somewhat outmoded and can in fact be misleading because they do not reflect the value of voluntary compliance, nor do they value preventive activities. They can also engender dysfunctional behavior:

- Strike rates can lead to auditors making unjustifiable small adjustments to achieve a high strike rate. Equally, taxpayers who are aware of this behavior on the side of the tax administration may even facilitate such immaterial adjustments that are counted as a successful strike, in an attempt to distract auditors from more material but possibly more difficult issues. Auditors themselves may demonstrate a bias towards easy cases (including some of dubious provenance) rather than the more difficult cases requiring more in-depth and professional auditing techniques. It may also lead to auditors spending additional unnecessary time on a case looking for something to adjust rather than accepting that the taxpayer may have been compliant.
- As for the monetary size of adjustments, experience has shown that auditors may spend many years on a case that covers returns over several successive years as this approach is more likely to lead to a larger monetary adjustment than "doing a year's work in a year." This extended audit period can, however, be inefficient in terms of the resources used as well as loss of alternative opportunities. Opportunity for a more strategic and timely response may be delayed or lost, for example, the early closing of a loophole in the legislation. Monetary size adjustments can also encourage particularly large and possibly spurious adjustments to be made, only for the adjustments to be subsequently (maybe some years later) overturned on appeal or lost in the courts.

In summary, it is important for any administrative function to 'measure what it values' (e.g., the overall outcome sought, such as increased voluntary compliance), otherwise, the tendency is for it to 'value what it measures' (e.g., strike rates).

Without overinvesting in performance measurement, it is important to have a suite of indicators of the effectiveness and efficiency of compliance activities. This should include a balanced set of measures such as:

- Conversion rate indicators (e.g., audit strike rate, adjustment rates, etc.);
- Time indicators (e.g., average time to complete an audit, effort time);
- Coverage indicators (e.g., percentage of the target population audited);
- Cost indicators (e.g., cost to perform an audit, cost of compliance);
- Revenue indicators (e.g., voluntary compliance revenue, revenue from audits);
- Stocks and flows indicators (e.g., number of audits on hand/completed); and
- Quality indicators (e.g., average audit quality, taxpayers' satisfaction).

Trends (not just lines of best fit) over time in these indicators (e.g., using control chart approaches) can provide a richer and more accurate picture of whether the system is improving or going backwards.

7.9 Taxpayer Relations: Information Material, Rulings and Communication/Consultation

7.9.1 Communication designed to engage taxpayers and to enable compliance

To enable taxpayers to comply with the tax administration's view of compliance regarding relevant transfer pricing policy, legislation and administrative guidelines, it is critical that taxpayers (and foreign MNEs), particularly large ones and key industry groups, are aware of, understand and accept those views or, if disagreeing, dispute them in a transparent manner. This requires tax administrations to make their views on key matters known to taxpayers in an understandable way through active industry and taxpayer engagement and consultation. It can be beneficial to engage industry in the codesign of practical strategies to achieve clear and easily accessible administrative guidance as to how to comply with relevant government requirements.

To **enable current compliance** a number of tax administrations have put in place what is in effect 'real time' consultation and compliance approaches. For example, the US IRS's Compliance Assurance Program, the Netherlands' Horizontal Monitoring Program and Australia's Annual Compliance Arrangement/Pre-lodgment Compliance Review are all compliance approaches designed to enable and ensure compliance with the tax administrations view at the time the taxpayer (and/or its MNE) is contemplating material transactions, rather than months or years after the event. This is a relatively resource-intensive approach that can only be truly justified where the size of a taxpayer and its importance in the tax system are of such a magnitude that warrants the effort.

Appropriate controls are crucial to ensure that tax administrations maintain their objectivity (avoiding client capture of the regulator) and that anticorruption mechanisms are followed (e.g., see http://www.transparency.org/files/content/corruptionqas/Approaches_to_curbing_corruption_in_tax_administration_in_Africa_2014.pdf). The following controls should be considered a minimum standard:

- Documentation: registers of audit and settlement positions, their rationale, whether accepted/rejected, decision rationale; dual sign-off including by an independent staff member, internal audit and review of register at regular intervals.
- Supervision: adequate supervisor workload/spans of control, supervisors located with and able to access audit staff, good supervisor skills and sound tax knowledge.
- Movement: rotating staff to ensure that supervisory relationships do not become too close or interdependent, rotating staff to ensure that client contact does not become too close or interdependent.
- Integrity: additional checks for employees in roles that are exposed to greater risk of corruption, such as family/associate asset holding reviews.

To **enable future compliance** many tax administrations negotiate Advance Pricing Agreements (APAs). APAs are primarily designed for large taxpayers because they are resource intensive, though generally less so than a comparable audit. Larger numbers of smaller taxpayers are more effectively dealt with by general rulings that effectively provide safe harbor outcomes for relatively simple matters (see section 8.1 for more details on safe harbors). Negotiating APAs requires the same degree of rigor as an audit to establish an agreed evidence based arm's length price. Importantly, APAs differ from an audit because:

- They are voluntarily entered into by taxpayers (and their MNEs),
- Engagement is undertaken in a more cooperative way—that includes timely disclosure of relevant information, evidence and documentation, and
- Many matters can be easily dealt with by stated 'critical assumptions'.

Most APAs provide an agreed price and run for a set period of time (typically 3 to 5 years) before renewal and re-verification. Where a price range is used, the tax administration should be careful

to ensure that over the longer term the bottom of the range does not become the price point. Use of a price range allows for price variation as conditions change, and it is expected that the price point should, over time, be around the median of the range. Experience has shown that the price point used by many taxpayers with APAs has often been selected at the bottom of the agreed range. It is important that as a part of the annual communication process, a confirmation that the circumstances surrounding the critical assumptions have not significantly changed be provided. APAs are discussed in more detail in section 8.2.

7.9.2 Communication related to enforcing compliance

Experience over many years across countries indicates that communication and relationships between tax administrations and mining MNEs regarding transfer pricing issues can be problematic from the perspective of each party. While a degree of professional tension inevitably arises where the relationship of trust and transparency between a taxpayer and the tax administration occasionally breaks down, this would be unfortunate and undesirable and every effort should be made to avoid this set of circumstances from developing.

As a form of best practice, some tax administrations have published codes of conduct as to what taxpayers can expect during engagement with tax administrations (see Appendix C.7). Ensuring that best professional practice is adhered to by tax administrations when undertaking transfer pricing audits in the mining sector can significantly improve communications and lead to better and more timely outcomes.

The body of guidance materials should evolve and develop in response to priorities identified by both taxpayers and administrators. So should the treatment of various taxpayers differentiated according to perceptions of 'risk and consequence' that may change in the face of an improving or deteriorating compliance behavior.

The audit stage for transfer pricing cases is especially difficult, and it is important that auditors are well versed in soft skills and the ability to bring an audit to a successful conclusion regarding tax law and its enforcement where required. Tax administrations and the MNEs can have opposite positions during audits and a range of tactics, which may be deliberate or instinctive, that may come into play by either or both parties.

Approaches that may be helpful when dealing with some of the common issues that may arise during transfer pricing audits in the mining sector include:

- ***Be clear about the role of a tax administrator:*** Auditors should be confident, when challenged, about validating their role in assuring the community and government that the transfer pricing provisions of the tax legislation are being verified and enforced in a professional, impartial and transparent way.
- ***Understand the MNE and their transfer pricing strategy:*** Auditors may better prepare and find it easier to deal with MNE officers when they know the roles and background of those officers. For example, if MNE officers were the initiators of the transactions being reviewed they can sometimes be defensive. Alternatively, passive responses may be received where the transactions were put in place upon instruction from the head office. Internet searches can be useful for this preparation.
- ***Have a clear agenda and objective:*** Officers should be very clear about why they are communicating with the MNE officer. This includes clarity about the output (e.g., obtaining particular information or documents) or outcome (e.g., an agreed way forward) that the administration is seeking to achieve. What would 'success'[154] look like? Careful

[154]For a transfer pricing audit in the mining sector it might be either assurance that prices for commodities and other major components of the mining value chain satisfy the arm's length test or, if they do not, that an adjustment is made to the tax payable by the mining company.

consideration should be given to ensure the mode of communication chosen is efficient for both the tax administration and the MNE, and that it will be appropriate to achieve the desired outcome. Communication modes include telephone, letter, email or in-person meetings. They also need to reflect the degree of formality and evidencing that is needed.

- ***Anticipate the MNEs strategy:*** Unfortunately, it is not uncommon for some mining MNEs when subject to transfer pricing audits to complain to more senior tax officials and government officers (including Ministers) about the audit and the auditors' dealings with them. Therefore, it is good practice to brief such stakeholders prior to engaging with mining MNEs on major transfer pricing cases. This is best done as part of a regular briefing process. Sufficient factual detail[155] (subject to any tax secrecy limitations) should be included in the briefing to enable the stakeholder to understand and support the activities and to avoid, because of lack of information, any inadvertent move or statement that may undermine the validity of the transfer pricing audit.
- ***Be adaptive and flexible:*** Information and documentation are perennial issues that arise in transfer pricing audits in the mining sector due to the extent to which necessary information may be held outside the host country. Transfer pricing audits can get bogged down in trying to get information or even collateral litigation on claims for legal professional privilege. Creativity is needed to look for other ways to proceed in a timely way, for example, suggesting independent arbitration, using other sources/alternative documentation or proceeding to adjust tax payable on the best available evidence.
- ***Be willing to compromise:*** It is important to identify and be ready to propose or accept compromises within the limits of justifiable reason recognizing that mining transfer pricing issues are inherently complex and many aspects can be argued. Compromises can present opportunities to reflect cooperative solutions. It is essential that they be made in good faith, and for good governance, and that the underlying reasons and justifications for such compromises are documented.

While many mining MNEs do the right thing, experience has shown that there are some instances where tactics are used to disrupt transfer pricing audits from being undertaken in an effective and timely manner. Auditors need to be able to identify and have the skills to deal with these tactics should they occur (see Appendix C.8).

There is evidence that due to the greater ease of communication in influencing public opinion, MNEs have become very sensitive to the potential for reputational risk both in the source country and in their country of residence. This may represent a powerful incentive to increase transparency and demonstrate compliance. Pressures to bring about this behavior have also been applied by some tax jurisdictions that have published lists of the amount of taxes, sometimes surprisingly low, paid by major companies, the so-called 'name and shame' strategy.

7.9.3 Communication and co-ordination between different ministries and departments involved in mining tax administration

Irrespective of the mining taxation policy in force and of how tax administration functions and revenue collection are structured, there must be a clear allocation of the functions to be performed by and of the accountabilities of the various ministries and their departments involved. This is fundamental to ensure effectiveness and to reduce potentially wasteful instances of inefficient overlaps and duplication of effort. These matters are discussed at length in a World Bank—CET 2013 publication entitled 'How to improve mining taxation administration and collection frameworks: A sourcebook' to which the reader is referred. Although discussion in this sourcebook is written in the context of mining taxation administration in general, the issues are equally relevant to transfer pricing. Recommended initiatives for enhancing effectiveness and efficiency in tax administration include, among others:

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[155]For example, MNE identity, general description of transfer pricing audit scope (such as whether sale of gold sold and exported to related foreign party was arm's length), and period audit is expected to cover.

- Establishment of practical inter-agency protocols, promoting greater cooperation, thus simplifying and expediting processes,
- The harmonization and sharing of relevant databases, through data warehousing with clear responsibility for the collection and integrity of various datasets, and
- Sharing of specialized skills, which would see greater integration of technical mining engineering skills normally resident in the Department of Mines and physical quantity and value verification skills resident with Custom and Excises within the compliance and risk management processes, including audits, normally carried out by the tax office.

In spite of general agreement in principle about the desirability of more effective inter-agency communication and cooperation, implementation of these types of improvements is generally progressing slowly, as it affects the boundaries of ministries and departments and therefore their political influence and share of limited budget resources.

Chapter 7 Key Take-Away Points

- Tax authorities must establish systematic and well-articulated compliance processes including risk-based case selection, risk analysis, audit and resolution phases to replace any ad hoc approach that may have prevailed in the past.
- An assessment must then be made of the current inventory of auditing skills and to what degree the available skill base is adequate to address the desired auditing plan, determining priorities for future skill development and/or procurement from external sources.
- An assessment of the information needs and requirements for each phase of the compliance cycle must also be carried out determining which are the best sources and/or strategies to satisfy them in a timely manner that does not introduce excessive delays and frustrates the successful conclusion of audits.
- The lack of comparables databases with specific relevance to mining in Africa is a major drawback, as is the cost of and difficulty to make adjustments based on existing databases with primary focus on European and/or other developed economies.
- ATAF's strategies to secure multiuser licenses for its members for some of the commercially available databases should be supported.
- Transfer pricing documentation is an on-going issue for both tax administrations and MNEs, which may be ameliorated by clearer definition of what contemporary documentation the taxpayers should develop and maintain and of the timing and modality for its submission.
- Tax administrations should not impose unreasonable demands for information but be vigilant about the strategy adopted by some taxpayers to avoid disclosure of some element of information critical to a satisfactory audit. Process frustrating strategy can be recognized and grouped under the headings of deny, delay, and defeat. The impending introduction of country-by-country reporting and the increasing use of international exchange of information agreements may improve this situation in the medium term.
- While statutes of limitations should be waived where there is prima facies evidence of tax avoidance, tax administrations should impose shorter and more rigid timelines for their officers to complete the four phases of the process, and in some cases it may be expedient to abandon a stale case rather than having it drag on for many years at high cost and with declining chances of a favorable resolution.
- Policy makers must be conscious that some of the current performance indicators based on strike rate and monetary value of cases resolved may prove to be counterproductive in the influence they may have at the case selection stage.
- Taxpayer relations and cooperation is a critical area deserving urgent attention. Training will be required in the area of communication and negotiation to promote voluntary compliance, reduce the incidence of litigation and improve acceptance of adjustments by taxpayers.

8

Opportunities and Potential Strategies for Process Simplification and Legal and Administrative Capacity Building

8.1 Administrative Guidance and Safe Harbors

In 2013 the OECD[156] redefined safe harbor as ". . . a provision that applies to a defined category of taxpayers or transactions and that relieves eligible taxpayers from certain obligations otherwise imposed by a country's general transfer pricing rules."

As noted, these simplification measures can take several forms, from legislative safe harbors where the statutory test is waived; 'practical' safe harbors where the statutory test still applies but there is acknowledgement that provided certain criteria are met (and these can include quantitative criteria such as profit outcomes), the taxpayer can be assured they will be treated as 'low risk'; and de minimis thresholds in the case of low levels of related party dealings and/or small size of the overall business.

The advantages of using a safe harbor for pricing of routine low-risk functions are that it provides certainty for a taxpayer, potentially reduces the costs of complying with transfer pricing administration, reduces the need to perform comparable studies, and frees up resources so that tax authorities and taxpayers can concentrate on more important transfer pricing matters, such as restructuring, intangible transactions and high-risk transactions where reliable comparables are not available.

The downsides of a safe harbor are that it does not necessarily comply with the arm's length principle (however, it may result in a reasonable approximation of the principle), that double taxation may result if the safe harbor is not bilateral or multilateral, and that safe harbors can be open to abuse. Taxpayers will try to fit their transactions into safe harbours and because disclosure requirements are often not very stringent, doubtful transactions could escape undetected. For example, a safe harbor may be established for low-value support services to allow a profit margin on total costs of 5% or less, but this would not be helpful if applied to an overinflated cost base.

Safe harbours should, therefore, be accompanied by stringent disclosure and review requirements so as to prevent possible abuse. In this respect, the OECD has recently broadened its approach to safe harbours as part of the BEPS 2015 Final Report for Actions 8–10 resulting in a revision of Chapter VII of the OECD transfer pricing guidelines. An elective simplified approach for a broad range

[156]Revised Section E on Safe Harbours in Chapter IV of the Transfer Pricing Guidelines released by the OECD on 16 May 2013.

of low-value-adding intra-group services has been introduced that seeks to achieve the necessary balance between appropriate charges and the need to protect the tax base of the payer countries. It provides for a limited (5%) markup on costs and provides a consistent allocation key for these services. It also provides greater transparency through specific reporting requirements and includes clear guidance on documentation that taxpayers should prepare and submit upon request from the tax administration in order to qualify for the simplified approach.[157]

Follow-up work on the design and implementation of the simplified approach is being undertaken.[158]

Tax administrations can develop and provide their own simplified approaches or safe harbours tailored to their needs and those of industry. For example, late in 2014 the ATO released its online guidance on 'Simplifying transfer pricing record keeping' providing options to be made available for the following categories of transactions, excluding transactions of a capital nature:

- Small (nondistribution) business taxpayers with aggregated turnover of less than Australian $25M;
- Small- to medium-size distributors with aggregated turnover of less than Australian $50M;
- Low-risk intra-group services amounting to less than Australian $1M or less than 15% of aggregated expenses/revenue; and
- Low-level intra-group loans with a combined cross-border loan balance of Australian $50 million or less.

To avail themselves of these simplified transfer pricing options taxpayers and transactions must satisfy certain general conditions, e.g., they must not have:

- Derived sustained losses over three or more consecutive years, or
- Related-party dealings with specified countries, or
- Undergone a restructure in the relevant income year.

In addition to these general hurdles, the four categories of taxpayers listed above will also need to satisfy further hurdles relating to each specific option.

As noted above, there are a number of examples of where safe harbors have been developed and implemented after extensive consideration of the issues. These probably provide good guidance as to where other countries could consider something similar if it was warranted.

Before establishing a safe harbor, African countries need to first assess what risks are involved and what limitations should be applied to it, and determine to what extent the benefits from administrative simplification would outweigh any potential revenue foregone. There are no precise mechanisms for determining what might be sacrificed through a safe harbor. One mechanism that South Africa is using to determine levels of risk and noncompliance is by reference to audit results and by engaging industry experts. Useful intelligence has been gathered to ascertain industry norms and thresholds, which have assisted in reviewing previous safe harbors, as well as areas for consideration on potential future safe harbors.

Setting of safe harbors must be based on initial comparable analysis. In this respect the introduction of equitable safe harbors at a policy level in Africa could be constrained by the paucity of local comparables databases.

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[157]Para 7.64 of revised Chapter VII, OECD Transfer Pricing Guidelines.

[158]See page 142, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation*, Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

8.2 Advance Pricing Agreements (APAs)

The OECD Guidelines define an Advance Pricing Agreement (APA) as: "An arrangement that determines, in advance of controlled transactions, an appropriate set of criteria (e.g., method, comparables and appropriate adjustments thereto, critical assumptions as to future events) for the determination of the transfer pricing for those transactions over a fixed period of time. An advance pricing arrangement may be unilateral involving one tax administration and a taxpayer or multilateral involving the agreement of two or more tax administrations."

Markham (2005)[159] discusses in detail the advantages and disadvantages of entering into an APA mainly from the point of view of taxpayers in the UK, US and Australia. Advantages include certainty, pursuing a cooperative approach with the tax authority, the possibility of including past filing (the so-called rollbacks) and options for possible extensions. Disadvantages include problems with unilateral APAs (which, however, can be overcome through use of MAP if a DTA is in place), the cost of filing an APA, the possibility that the process may alert the tax authority to conduct a transfer pricing investigation that may otherwise not have occurred, and that the APA may be refused. In addition, the danger exists that APAs may become irrelevant in an environment of continuous and fast paced business evolution.

In African countries where the largest taxpayers are in the mining sector, and therefore, likely to be selected for audit in any event, an APA may be suitable and indeed a better way to review the evidence and achieve agreement on arm's length transfer pricing to drive compliance in a cooperative way.

In addition to including the transfer pricing of mining commodities, cases should include the following types of transactions, which are included in the majority of APAs:

- Intangible property transactions;
- High-risk transactions where reliable comparables are not available;
- Financing transactions;
- Restructuring; and
- High-value service transactions.

It is important to cover all the high-risk transactions, as an APA covering only limited issues is unlikely to result in reliable tax outcomes. What may be agreed for one issue (for example, commodity pricing) may not lead to a better tax revenue outcome if it is accompanied by a change in another issue (for example, an increase in debt levels and associated deductions for interest). The broad range of issues that need to be covered can be addressed efficiently through their inclusion in the 'critical assumptions'.

Information asymmetry is often a problem when auditing mining companies, and APAs may prove very useful to assist in addressing the issue as it is based on cooperation and the provision by the MNE of all necessary information. This information is not only useful for the APA concerned, but may also be useful for gaining insights which assists in building expertise and knowledge to better undertake transfer pricing compliance activities for other mining MNEs.

Nevertheless, a review of the status and use of TP legislation in Africa (Table B.3) indicates that even though some mineral-rich jurisdictions in the Sub-Saharan region may have developed legal provisions for the use of APAs, very few, if any have been implemented to date. This may be due to the perceived time, cost and skill intensity (both in terms of industry and transfer pricing expertise)

[159]Markham, M.M., 2005, The advantages and disadvantages of using an Advance Pricing Agreement: Lessons from the UK, from the US and Australian experience, INTERTAX, Vol. 33, Issue 5.

of the process of conducting the necessary negotiations, as well as the demand on resources for carrying out an annual compliance tracking mechanism.

The costs of entering into and the supervisory requirements involved in an APA program can be similar to those required for an audit, but usually are more timely given that the required information is often provided upfront. This suggests that this type of arrangement should be made available by governments but only when justified by substantial expected benefits relative to its cost. Hence, an approval process for APA candidates, similar to that of case selection for audits, is needed so that scarce transfer pricing resources are not invested in matters of relatively low significance for the tax system.

In practice, APAs are often entered into as administrative arrangements where no special legislation is necessary. While they may focus on specific issues and controlled transactions, their usefulness in assuring overall revenue (especially important for developing countries) may not be achieved unless all significant tax issues, especially financing issues, are covered by the APA or other equivalent compliance product (for example, a ruling product).

Process-wise, APAs are similar to an audit but usually quicker to administer because of their cooperative nature and they provide easier access to relevant information. This can be seen in the process map shown in Figure C.4.

Given the paucity of general audits of mining companies currently carried out in most African jurisdictions, it comes as no surprise that resources are preferentially directed at carrying out risk-based audits, drilling down to specifically identifying TP related risks before contemplating the possibility of negotiating possible APAs. Given the administrative costs of APAs, the decision on their introduction should be based on a careful review of costs and benefits.

- Detailed guidance on the role and design considerations for APA programs is provided in Chapter 7 on "Avoiding and Resolving Transfer Pricing Disputes" of the general WBG handbook on "Transfer Pricing and Developing Economies."

8.3 Application of the "Sixth" Method

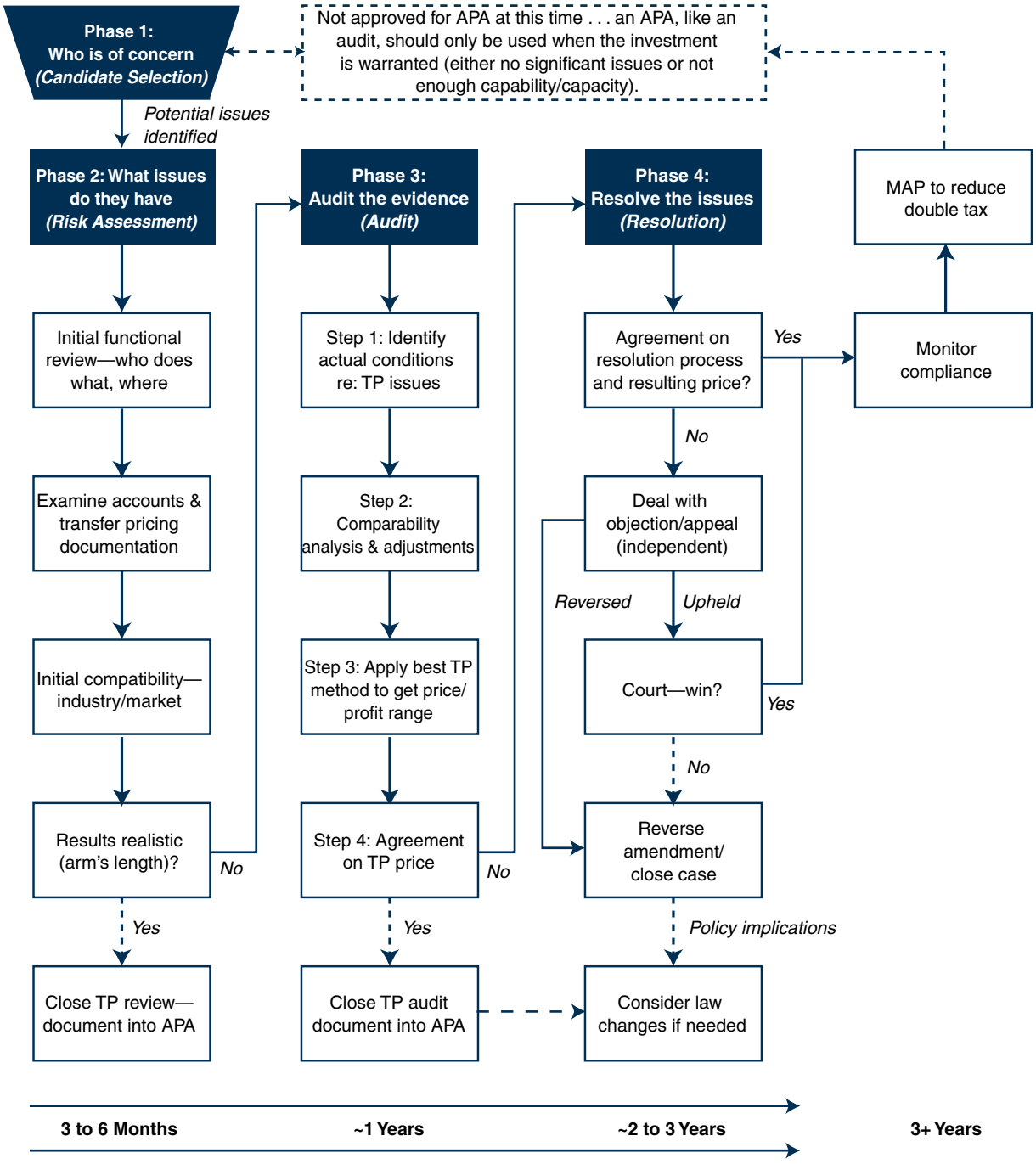
In addition to the five recommended methods, the OECD has also been considering, but does not endorse, the use of the so-called **"sixth method."** The method was developed to deal with transfer pricing of commodities (including agricultural as well as mining) traded by agents in terminal markets that regularly quote their prices. This method, employed initially in Argentina in 2003 was soon followed by Ecuador, Uruguay, and has now been adopted by most mineral-rich South American countries. Many Latin American jurisdictions have recently introduced transfer pricing legislation (e.g., Dominican Republic, El Salvador, Guatemala, Bolivia and Chile) and all but Chile have adopted the sixth method. In addition, others have recently amended their existing transfer pricing regulations (e.g., Brazil, Panama, Peru and Columbia) and Brazil and Peru adopted the sixth method. India has also recently introduced the sixth method.[160, 161]

The sixth method focuses on exports of commodities and mandates publicly quoted commodity prices be set in a contestable market on the day of loading of the mineral commodity for export, regardless of volume, geography, and other factors that influence the market price. It applies to specified commodities sold to a final external consumer through a related intermediary located in a foreign (generally low-tax) jurisdiction ("triangular transaction") and where the foreign intermediary lacks sufficient substance to create value in the mining value chain. In effect, when

[160]PriceWaterhouseCoopers 2014 Policy brief on the sixth method.

[161]PriceWaterhouseCoopers, PKN Alert, January 29, 2013.

Figure C.4: Transfer pricing co-operative compliance phases



commodities are sold under these circumstances, the sixth method ignores the intermediary distributor and prices the transaction according to publically quoted prices established for the commodities in uncontrolled markets. Uruguay and Peru refer to the "sixth method" as a variant of the CUP method.

Advantages of the sixth method are its ability to alleviate the audit burden in applying an arm's length approach, address the access to information challenge and the lack of comparables. It may

also be an effective way for African countries to increase the tax assessed on companies exporting commodities.

The sixth method, however, is also subject to criticisms as it is arbitrary and does not permit adjustments for factors relevant to the arm's length price. These factors include those with impact on costs (i.e., geography which involves transportation, logistics and insurance costs) or volumes and agreement terms. There is also a lack of clarity about the definition of 'commodity' for the method and which commodities would satisfy the test of public or known prices.

Importantly, the sixth method is not consistent with the ALP, and to that extent it may create a risk of economic double taxation, which may have implications for potential investors' perceptions of sovereign risk in jurisdictions adopting it. These issues are discussed in '*Sixth method raises transfer pricing concerns in developing countries*'.[162] This risk may be mitigated where the 'sixth method' is not mandated, but only available where an arm's length method cannot reliably be applied.

An African country that considers introducing the "sixth method" for pricing mineral commodities in its TP legislation needs to first determine whether this is a viable option for the country, and detailed research needs to be undertaken to:

- Determine what the potential impact would be on foreign direct investment, economic growth and job creation in the mining industry;
- Critically evaluate the effectiveness of using the "sixth method" to curb transfer pricing abuses. MNEs may react by introducing higher marketing/sales commission/services fees to counter the application of the 'simplified CUP method for commodity transactions'. Brazil restricts MNEs from introducing exorbitant fees by having limitations on deductions;
- Consider the alternative option of introducing this approach in an anti-avoidance provision as opposed to a transfer pricing provision to address the arm's length principle concerns that taxpayers may raise.

The process of researching and developing options for the sixth method should involve good communication, negotiation and ideally agreement between industry and the relevant tax authority.

In contrast to the 'sixth method', the BEPS Final Reports for Actions 8–10 include a clarification about the use of the arm's length CUP method specifically for commodities.[163] It provides that quoted prices can be used under the CUP method, subject to a number of considerations. This new guidance is to be supplemented by further work to provide knowledge, best practices and tools for commodity-rich countries to use for determining the transfer price in commodity transactions.[164]

8.4 Training Specifically Targeted to Key Risk Areas and Risk-Based Auditing Principles/Strategies in Mining

The knowledge, skills and experience needed for each of the four compliance phases (case selection, risk assessment review, audit, and resolution) differ somewhat, particularly between prioritizing candidate cases and doing those cases, and between doing the cases and resolving those cases if litigation is involved (Table C.3).

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[162]PricewaterhouseCooper, January 29, 2013, PNK Alert.

[163]See revised Chapter II, paras 2.16A–2.16E of the OECD Transfer Pricing Guidelines.

[164]Page 51, OECD (2015), *Aligning Transfer Pricing Outcomes with Value Creation,* Actions 8–10—2015 Final Reports, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris.

Table C.3: Skill bases relevant to the various phases of the transfer pricing process

	Key Skills
Case selection	Quantitative analysis, ability to blend quantitative and qualitative intelligence, industry economics, IT skills
Risk review & audit	Legal, accounting, auditing, industry economics, industry specific knowledge (especially relating to key risk areas identified in Part B).
Resolution	Legal, communication, negotiation

Risk-based case selection,[165] particularly where relatively large numbers of taxpayers exist compared to tax administration compliance staff (e.g., having 300,000 public groups to monitor with about 1,000 compliance staff is not uncommon), and where each taxpayer potentially has multiple tax risks, largely requires very strong quantitative analytical skills,[166] such as those commonly found in data miners (e.g., those familiar with predictive and descriptive analytical approaches). To effectively utilize resources and select cases for audit, a robust and efficient risk-based process must be developed and carried out by suitably competent resources.

Case selection is generally differentiated by tax type (e.g., income tax versus VAT) as the data sets, risks and taxpayer behaviors often differ in this manner. While case selection in tax administrations is less often differentiated by industry (e.g., mining versus manufacturing), it should be recognized that different industries possess different and individual dynamics, regulations, modus operandi, etc.

That said, many tax risks are common across industries. For example, restructuring is not unique to the mining sector—it is also a common risk in other sectors including manufacturing, information technology, etc., and may be a precursor event to enable profit shifting via transfer pricing. However, the supply chain restructuring risk takes a particular form in the mining sector—it typically involves the (re)allocation of key activities from extraction, blending, processing and refining, marketing and distribution, treasury, financing and hedging, logistics and shipping, or mobile assets such as intellectual property, to hubs in lower taxed jurisdictions. Similarly, the risks around avoidance of capital gains taxes are not unique to a particular industry, but in the mining sector they are likely to relate to the sale and acquisition of entities that are either land rich or hold rights to explore or mine.

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[165]Alternative selection approaches such as census (where every taxpayer gets reviewed), random case selection (picking taxpayers for review out of a hat), interval sampling (picking say every tenth taxpayer) or judgment based case selection (picking taxpayers for review based on an 'I reckon' approach—auditors often want to do this) are unlikely to be as effective as risk based approaches where taxpayer data is essentially regressed to improve the correlation between the risk being present and the data indicating the risk might have been present. A feedback and learning loop should be inherent in robust risk-based approaches. Without feedback and learning selection effectively becomes judgment rather than risk based. For appropriate risk differentiation it is important that the view of risk consider risk likelihood factors and risk consequence factors separately rather than producing a single output. It should be obvious that a risk with a high likelihood but low consequence warrants a different tax administration approach to a risk that is low likelihood but high consequence. Assessing the performance of case selection approaches just on the strike rate produced has a real danger of an outcome that chases matters of relatively little consequence, but high likelihood. (e.g., a $1,000 adjustment on a $100M turnover taxpayer is immaterial.) It should be noted that selection systems that use binary thresholds or relatively crude risk scoring approaches do not make the best use of the information value available and will generally be significantly outperformed by systems that rank candidate cases by approximate measures of likelihood and consequence to give a view of potential risk adjusted value. This is something that is, unfortunately, often poorly done by many tax administrations.

[166]Quantitative skills should not preclude the appropriate blending of any qualitative intelligence (e.g., text) that may be present. The trick is to capture that qualitative intelligence in a robust manner that allows for its meaningful analysis and use across potentially large numbers of taxpayers. (e.g., Whistle blower or Dob-in systems.)

Table C.4: Examples of skills that need to be provided by training for various mining risk areas

Risk Area	Example of Training Requirements for Necessary Skills and Expertise
Marketing hub (Chapter 4.2.2)	Need to understand legal contract arrangements including terms and conditions that may reflect non-arm's length arrangements. This requires knowledge of the laws in the host country as well as those of other jurisdictions, operation of international commercial and transport law, etc., as they apply in practice to the mineral commodities being reviewed. Need to understand, in economic terms, where value is truly being added in relation to the marketing function, and specifically the hub. Accounting skills are required to ascertain if revenue is being accrued appropriately in accordance with relevant accounting standards. Training of auditing skills should focus on how and where to obtain financial information contained in the MNEs' accounts in various jurisdictions and whether they fairly reflect the activities being undertaken.
Corporate services hub (4.2.3)	Need an understanding similar to that required for a marketing hub with emphasis on sound corporate services models that provide support functions. Knowledge of international industry practices is needed as well as sound accounting skills to determine the appropriateness of the allocation keys used. Auditing skills are also important to verify transactions.
Engineering, science and technical hub (4.2.4)	Need an understanding similar to that required for a marketing hub with key focus on how to value and set an appropriate compensation for use of intangibles and of high-value, specialized technical/scientific equipment.
Insurance hub (4.2.5)	Need an understanding similar to that required for a marketing hub with emphasis on understanding the special nature of insurance and how risks are priced and managed (transferred, treated or mitigated), as well as the allocation key used between MNE entities.
Finance hub (4.2.6)	Need an understanding similar to that required for a marketing hub with emphasis on how mining is financed in terms of its initial and on-going capital investment and operational needs internationally. In particular, an ability to analyze the financial structures pertaining to the mineral commodity(ies) concerned, and more specifically those of common application across resources projects in African countries is required.

The skills and expertise needed to deal effectively with transfer pricing are set out in section 7.2. More specifically, to deal with transfer pricing risks in the context of mining in Africa, tax administration may wish to focus their training on those areas identified in Table C.4.

In summary, there is a strong case for broadly based transfer pricing training to be provided that may benefit from the establishment of a strong knowledge-sharing base and generic training material, which may be utilized across different African jurisdictions. This may ideally be complemented by well-designed e-learning platforms, which would lessen the travel cost and time imposition that would be required as a high component of face-to-face tuition. A number of e-learning products are already commercially available in the market. While some are quite useful and very well presented, allowing self-paced study and self-assessment, their focus is so far exclusively on the point of view of the taxpayer. It could be argued that a need may exist for similar digital training products to be developed with the specific perspective and purpose of training tax administration officers.

Detailed industry specific knowledge is, however, important during the risk assessment and audit phases. In this phase one has to understand the taxpayers business to understand the tax outcomes, and then establish whether a contestable issue exists. Building such industry knowledge to aid in effective transfer pricing risk assessment and audits of the mining industry may not be an easy process. External industry experts are not always readily accessible to tax administrations, and if they are, there can be an underlying hesitation for such experts to reveal the inner workings

of the industry due to concerns about professional conflicts (they often have consulted for most of the large miners) and future engagements (they probably want to consult for the large miners again). This reticence appears to be less of a concern for academic mining experts. Intensive courses designed to raise the level of understanding of the workings of the mineral exploration and mining industry for non technical professionals are already delivered as part of a number of Masters programs, as for instance in Mineral Economics. Wider development of similar courses could be promoted for consideration by some of the universities in mineral-rich African countries. Ideally, such courses should include field visits to mining and mineral processing operations in the country and/or abroad.

If the tax administration is going to be dealing with the particular industry or taxpayer on a regular basis, as will be the case for a unit set up to audit large mining operations, it is largely incumbent upon the tax administration to build its own intelligence by undertaking its own research; gathering intelligence through the audit process; liaison with industry and regulatory bodies, particularly with their Department of Mines and/or State Development; other tax administrations, as for instance VAT and Customs; global forums; etc., so that the auditors are not starting from scratch each time. This can be a significant investment of resources, and care should be taken that staff do not end up doing research that is largely unusable or unused. Tax administration research units can become enamored with pontificating about some obscure but interesting aspect (e.g., the taxation of virtual currencies) rather than sticking to what is needed to identify and complete compliance cases in an effective and efficient manner.

A useful guide to transfer pricing risk assessment is the OECD's Draft Handbook on Transfer Pricing Risk Assessment ("the Handbook") published by the Steering Committee of the Global Forum on Transfer Pricing. The Handbook details country procedures, methods and practices in order to provide a useful guide to tax administrations designing their own risk assessment approaches.

Many in Sub-Saharan African countries, as for instance South Africa, Ghana, Tanzania, Zambia, Kenya, Guinea, and Sierra Leone, have identified basic risk indicators to guide case selection and put in place and/or are continuing to develop risk-based audit strategies. Their effectiveness, however, is in many cases constrained by weak intelligence gathering processes, limited access to information from other tax jurisdictions and to relevant comparables databases, and inadequate transfer pricing documentation and human resources with appropriate skills.

The knowledge, skills and experience needed to resolve a case also differs somewhat from that needed to make robust evidence based adjustments of the arm's length price on some matters. Negotiation skills and knowledge of litigation are particularly needed, as well as a sound appreciation of the strengths and weaknesses of each party's position in the dispute. It is not uncommon at this phase to find that some aspects of the case (often a counterfactual aspect) is less well evidenced or documented than would be required before a judge, and sound understanding of risk enters into the negotiation picture.

The negotiation and settlement of cases is another point where key controls are needed to ensure the objectiveness of outcomes reached. It is important for knowledge, skill and experience building of auditors that they are appraised of the reasons for particular settlements so that they can improve their litigation brief building in the future. It should be noted here that it is not uncommon for auditors to overestimate the strength of their case, equally, it can occur that the negotiation team has overlooked some aspect or key feature that could have been put more forcefully or argued differently.

Often not done under time pressures, a full post-case debriefing and analysis should be conducted to extract learnings for the future. Such a debriefing can be important in ensuring that all members of the compliance team are aware of how they can improve in the future, as those that do not learn from past mistakes are condemned to repeat them.

8.5 Secondment as a Training Strategy or with the Objective to Aid and Expedite Enforcement of Transfer Pricing Rules

8.5.1 Secondment of tax officers to more experienced administrations

As a general statement, targeted training programs are essential to transfer pricing capacity and capability building. Whilst on-the-job performance of actual audits is often the primary skills development technique, skills can be further enhanced, and greater consistency obtained, if on-the-job training is supplemented by a structured formal training program that combines theory with practice, allowing for trainees to see how the theory manifests itself in reality.

It may be argued that, given the long duration of TP audits, a single short- or medium-term secondment by tax officers of a developing African tax administration to an experienced administration may not expose the visiting tax officers to the full spectrum of TP auditing phases/activities. Similarly, the issue also arises in the reverse scenario where experienced tax officers are seconded for short/medium terms to other developing countries. Ideally secondments should be complemented by repeated interactions to enable the more experienced officers to mentor staff over a timeframe of several years, to ensure appropriate skills transfer as well as securing outcomes from the audit work itself.

The development of a training program should be structured against an assessment of existing levels of competencies. As a result, training programs may range from basic to intermediate to advanced. If no specific transfer pricing competencies exist, a tax administration can nevertheless attempt to build capability and capacity from the ground up. Individuals with existing and proven tax and audit experience, and possessing strong self-starter attributes, must be identified as ideal candidates for a pilot transfer pricing team.

This pilot team can then start to conduct its own needs analysis with possible recommendations to address and close identified skills gaps. This may include identification of individuals for:

- Short- (say less than a month) and medium-term (say up to six months) secondment to more experienced tax administrations in the general region or elsewhere, and/or
- Attendance at internationally recognized training courses and programs, for example the OECD-run transfer pricing outreach and training programs, and/or
- Study tours and fact-finding visits to other tax administrations, particularly in mineral-rich countries with advanced transfer pricing rules and implementation structures in place.

8.5.2 Secondment of transfer pricing experts and/or tax officers from more competent regional and international jurisdictions to assist with audits, process improvement and training

An alternative is to second transfer pricing specialists from the private sector or from more advanced tax administrations over short- to medium-length periods of time. Ideally, these experts should be embedded in tax administrations at the critical time of development and initial enforcement of their transfer pricing legislation. This approach has already been successfully applied in other, more general, areas of tax policy reform and restructuring of tax administration and collection frameworks, where tax experts are typically provided under contract to international organizations such as the UN, World Bank, etc. In these cases, resourcing seems to be evenly split between actual employees of these organizations and individual consultants contracted to them, many of whom are often recently retired tax officers from the tax administrations of developed countries with a significant level of practical experience. Sometimes, active officers of tax administrations in developed countries are released for relatively short periods by their organizations to provide assistance or to conduct special investigations in the context of support provided through bilateral arrangements with donor countries such as Norway, Germany, etc. Alternatively, international organizations have been known to source specialized expertise from major international

tax accounting firms, but this has been primarily in the context of fact-finding projects generally relating to comparative policy studies or other relatively short investigations normally involving a number of developing countries.

As already discussed, an effective way to expand capability is to foster regional collaboration. Regional secondment of experts, that is to say from other African administrations, while of significant relevance may not be feasible over long periods because of the consequential depletion of generally scarce expertise in their country of origin. This is an issue that should also be considered in the context of the possible establishment of the proposed Multinational Transfer Pricing Units and to some extent of the 'Tax inspectors without borders' initiatives discussed in section 8.6 below. The African Tax Administration Forum (ATAF) has been effective in facilitating training and development amongst tax administrations. Individual members of ATAF also have their own assistance programs designed to contribute to regional assistance initiatives.

While short-term secondments with regional and international jurisdictions can be very helpful, serious consideration must be given to the availability of funds for such secondments. Furthermore, agreements with regional and international jurisdictions must be in place to facilitate such secondments.

Whatever the type of secondment that is finally arranged, the most important aspect should be to ensure that it does not merely provide a stop-gap service, but that it leads to an effective transfer of knowledge, enhancing the capability of local officers. Secondments should therefore include, besides helping to do the job, a component of training and follow-up knowledge sharing.

8.6 Pooling of Expertise and Cooperative Models of Capacity and Knowledge Sharing

Establishing and maintaining the expertise required to deal with transfer pricing issues from case selection, to risk assessment, to audit, to resolution often requires a big and ongoing commitment over many years. This may not be possible for many developing countries at this stage, particularly less wealthy ones. For such developing countries, the effectiveness and cost of establishing and operating transfer pricing capability might be optimized by using some innovative and shared administrative arrangements as discussed below.

8.6.1 OECD's 'Tax Inspectors Without Borders' initiative

Tax Inspectors Without Borders (TIWB), which is an initiative introduced by the Centre for Tax and Development of the OECD, with strong support from G20 and G8 leaders,[167] has the objective to provide a pool of transfer pricing experts to developing countries to assist with audit work, and to enable the transfer of tax audit knowledge and skills to tax administrations in developing countries through a real-time "learning by doing" approach. It does this through the use of experts (currently serving or recently retired tax officials) from different jurisdictions working directly with local tax officials on current audits and audit-related issues concerning international tax matters, sharing general audit practices. Anticipated benefits include:

- Improvements in the quality and consistency of audits;
- Transfer of knowledge;
- Potential for more revenue;
- Greater certainty for taxpayers; and
- Encouraging a culture of compliance through more effective enforcement.

Tools have been developed to address issues of confidentiality and conflict of interest that enable TIWB to work on real, live cases alongside the local audit team.

[167]http://www.oecd.org/tax/taxinspectors.htm

8.6.2 Establishment of Multinational Transfer Pricing Units (MNTPUs)

Multinational Transfer Pricing Units (MNTPUs) could be created as a shared resource between groups of participating African countries to undertake a range of transfer pricing work with the necessary range of expertise. An approach could be a pan-African organization supported by international organizations, but such an ambitious scope would make its practical implementation an unrealistic challenge. It would be more realistic, expeditious and convenient to assemble such MNTPUs on a regional basis, using the boundaries of existing regional organizations, linguistic groupings or on an ad hoc basis. Once again, initially at least, these MNTPUs would have to rely on an appropriate level of international support. This pooling of transfer pricing knowledge should be supported by appropriate web-based systems and e-learning platforms.

This type of unit could undertake all four phases of transfer pricing compliance (from case selection through to resolution) or be limited to one or more of the phases depending upon the agreed needs of participating member countries. While respecting the sovereignty of each country, the activities of the unit would be undertaken on behalf of the respective tax administrations of member countries. For example, in the case selection and risk assessment phases, the unit could undertake analysis across the same MNEs operating in different member countries, then make recommendations based on relative risks so that the member countries could make decisions about which to audit[168] and when.

To facilitate the operation of the MNTPU, arrangements would need to be put in place to ensure the unit had the necessary legal authority to undertake the required activities, including exercise of statutory powers acting in the shoes of the tax administration, e.g., to seek access to information, undertake reviews and audits, settle disputes, etc. Tools/measures will also need to be developed to address issues of confidentiality and conflict of interest, enabling the MNTPU to work on real-life cases across the same MNEs in different participating African countries. Similar practical challenges have been faced by developed countries when undertaking simultaneous audit programmes and multilateral tax administration taskforces[169] and their experiences would assist in developing suitable options. In relation to confidentiality, options may also be based on how law and accounting firms manage these issues (e.g., through internal arrangements that form an 'information barrier' to prevent communications that could lead to conflicts of interest.)[170] The OECD also has developed tools that address issues of confidentiality and conflict of interest that enables the TIWB to work with audit teams.

Mechanisms should also be created to prioritize and allocate resources to various cases, to set agreed time schedules to perform the case work, and to charge out time on the case work to the relevant tax administration, including a contribution to overheads. Funding for the establishment and ongoing running costs for such a unit could come from proportionate contributions from member countries, and possibly with some assistance from international organizations. Proportionate funding could be calculated by reference to the number and nature of cases done, as well as charge out rates for time taken for work done for each country. All these legal and administrative measures, particularly the issue of confidentiality, will need to be thoroughly investigated and resolved before this initiative may be seriously considered for possible implementation.

If the unit had the capacity to risk assess 20 taxpayers and commence eight audits each year, it would make recommendations to a panel of member countries. The panel could then make decisions as to what work would be done by the unit so that resources could be allocated to the highest risk work on an agreed funding basis.

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[168]Or other compliance treatment, such as Advance Pricing Agreement.

[169]Such as the Joint International Taskforce on Shared Intelligence and Collaboration established in 2004 between four countries and now brings together 30 national tax administrations.

[170]The law societies of some countries have developed (and sometimes published) guidelines for information barriers.

As capability for these activities within each of the countries would currently be low, it is also important that the simultaneous building of capability be fast tracked. The building of capability internally by tax administrations can take decades, and it is at risk of being lost to international professional firms that offer more attractive opportunities and remuneration to skilled staff. Furthermore, the escalating pace of trade globalization and e-commerce does not afford tax administrations the luxury of a leisurely buildup in capability if current tax leakages are to be stemmed and ideally reversed. A professionalization timeline of two to five years would be more in line with current circumstances. Therefore, it is considered that internal capability needs to be supplemented (at least at the early stages) with expertise from developed country tax administrations and professional external consultants. Where external consultants are being used, it is critical that an effective skills transfer to internal tax administration staff be in place.

A specialized shared MNTPU would be a new and unique arrangement. Given the current capability of tax administrations, the resource-rich nature of African countries and the global business optimization models used by MNEs, it is suggested that now might be the right time to explore the feasibility of implementing this knowledge pooling concept and of defining:

- Potential member countries;
- Roles and functions of the unit;
- Governance arrangements for the unit;
- Resource contribution framework for member countries and international organizations; and
- Joint-knowledge and e-learning platforms, etc.

A potential model for the MNTPU, that merits closer examination, is the African Legal Support Facility (ALSF) which was launched in 2010 under the auspices of the African Development Bank (AfDB). The ALSF was a response to a request from African Finance Ministers for support in three areas namely, commercial creditor litigation, the negotiation of complex commercial transactions, and capacity building. All member countries of the AfDB are eligible to request support. The ALSF is currently assisting African states on 26 projects. The majority of the projects involve direct assistance in contract negotiation, or the building of legal foundations needed to properly negotiate contracts.

Like for the ALSF, the MNTPU would need to identify an appropriate host organization, as well as core funding. The Unit's main point of difference would be the time schedule for support, as a meaningful intervention in transfer pricing cases is likely to take on average significantly longer than targeted assistance to contract negotiations, thus presenting particular funding and human resource challenges.

Chapter 8 Key Take-Away Points

- The administrative benefits of well-designed safe harbors for routine, low-risk service transactions outweigh the potential disadvantages arising from a less strict application of the arm's length principle, and the related risk of double taxation is generally capable of being successfully addressed.
- The South American experience indicates that there may be a valid role to play for the 'sixth method' in the context of African mining transactions involving cross-border transfer of mineral commodities to related parties.
- There is a need for better targeting training to the needs of the different four phases of the transfer pricing process and to better balance its group 'classroom' approach with the individual 'learning-by-doing' approach. The latter may include medium-term secondment of promising candidates to work in more advanced jurisdictions as well as secondments of transfer pricing experts to the tax administration to assist with the conduct of complex audits with emphasis on knowledge transfer.
- In mineral-rich jurisdictions it would be advantageous for tax officers dealing with specific large mining taxpayers to attend courses designed to familiarize non-mining professionals with technological aspects of mining and metallurgy. If this type of 'mining for non-miners' courses are not available in local tertiary institutions, then arrangements should be made with the local geological survey and department of mines to organize such briefings, which may last one week and include field visits to mining operations.
- Regional expertise pooling and cooperative initiatives for capacity and knowledge sharing should be strongly supported. This would include initiatives for the acquisition of multiuser licenses for comparables databases, the OECD's 'tax inspectors without borders' initiative and the establishment of multinational transfer pricing units (MNTPUs) leading to potentially significant synergies through pooling of transfer pricing expertise across a region on the basis of well-established and mutually beneficial arrangements in relation to establishing auditing priorities and allocating related costs. These MTPUs should also seek the potential technical participation and funding from appropriate international agencies and/or other donor countries.

9
Discussion and Conclusions

The study confirmed that transfer pricing represents a major issue in the context of the taxation of the mining subsidiaries of MNEs operating in mineral-rich developing countries, particularly in Africa given the economic importance of this industry on the continent.

In the absence of significant investment incentives or regulatory constraints on the side of the governments hosting their mining operations, MNEs exercise their legal choice as to the way they wish to structure their global business and locate their different functions/activities in a manner that maximises returns to their shareholders. The trend has been for MNEs to locate some of the downstream processing activities and many of the unique high-value functions of the mining value chain and related intangible assets into specialized entities or hubs frequently resident in low-tax jurisdictions.

MNEs contend that consolidation of specialized functions into hubs servicing their global operations is not driven primarily by tax-minimisation considerations, but by the objective of achieving critical mass, proximity to customers, to shipping and trading centres and research facilities, as well as attracting and retaining the necessary highly skilled personnel by stationing them in attractive locations. Preventing such restructuring, however, is very difficult for a host country government, particularly where the firm can make a strong business case for it. However, the extreme complexity and artificiality of some of these business structures, sometime also the result of 'treaty shopping' to obtain benefits and to circumvent the restrictions arising from the generally limited double taxation treaty networks in Africa, would point to the fact that they are in fact largely designed to minimise the MNE's tax liabilities at the consolidated level, as in fact admitted by some international mining executives.

The inevitable consequences of such restructuring are that:

- The tax base of the source country is eroded as profit is shifted abroad;
- The functions of the MNE's mining subsidiaries are often stripped down primarily to routine physical activities utilising tangible assets, that is to say to those of a 'contract miner';
- Few mining companies in Africa are fully vertically integrated and frequently export crushed and screened ore after limited beneficiation (as for instance iron ore and coal for production of steel and power generation), or concentrates and/or other intermediate products to smelters/refiners for their conversion into refined metallic products; and
- As a consequence, mining companies have become increasingly reliant on a very significant number of cross-border transactions for the provision of high-value, specialised services and assets, many of which are conducted with related entities which are part of the same MNE group.

In the final analysis it is a matter of fact and adjustments will be appropriate where substance does not equal form or reality doesn't equal the totality and there is no clear business purpose, only a tax minimization motivation. In some cases compliance with the arm's length principle may call for re-characterization of a transaction.

Our research, which analyzed the cost composition of current mining operations for some of the main commodities in Africa, indicates that some of these transactions may involve significant

flows. Significant inbound flows relate to payments for transfers of intermediate to refined mineral products to related parties. Outbound flows include a range of payments for both routine (e.g., corporate services) and specialised (e.g., marketing, treasury/financing, insurance, logistics and technical/R&D) goods and services provided by related parties.

It is therefore paramount that industry should set the related transfer prices on the basis of the arm's length principle as espoused in the OECD transfer pricing Guidelines, that is to say that the 'conditions' surrounding the transaction would have been agreed to by independent parties, and that tax administrations should have the capacity to ascertain that they are actually compliant with it.

Our review, however, has indicated that this may not be the case in many instances for a variety of reasons including the fact that:

- There is no shortage of examples of related party transactions which mining companies would not have independently enter into because the conditions could have reasonably been expected to lead to them trading at a long-term loss. Acting without compulsion, mining companies would have been unlikely to accept clearly excessive discounts on mineral products sales and/or excessive prices charged for good and services, including high interest and fees on borrowing and guarantees, nor would they have divested of assets, at times well below their market values, to an entity in a low tax jurisdiction and subsequently pay that entity premium fees and/or royalties for their use;
- Most of the mineral products transferred to related smelters/refiners or marketing hubs are intermediate products for which there are no stringent specifications and readily available market prices, which creates opacity and opportunities for manipulation;
- Some transactions, particularly those involving hard-to-value specialised marketing, technical/R&D, management and legal know-how and related intangible assets and IP, are often not transparent and tax administrations are generally denied access to specific financial information relating to the relevant foreign service providers;
- In spite of most jurisdictions having thin capitalisation rules in place, there is still a range of unresolved conceptual issues relating to the provision of financial services by related entities, such as determining appropriate risk premiums for interest charged on intercompany loans and guarantee fees, which make these types of transactions potentially open to abuse;
- Due to the domestic unavailability of some of the specialised services, there are generally no local sources of comparable uncontrolled prices, particularly for typical mining specific transactions and tax authorities must rely on comparables databases primarily based on non-mining-related overseas information in most cases irrelevant to Africa;
- For reasons of inadequate resourcing and transfer pricing expertise, most jurisdictions in Africa, while having recently developed some form of transfer pricing legislation, have, with very few exceptions, so far been incapable to effectively enforce it, with very few transfer pricing audits being carried out in general and extremely few specific to mining. Indeed there is within most tax administrations an inadequate degree of in-depth knowledge of the mining industry, its activities and processes and generally an inadequate level of communication and cooperation with other government institutions, such as departments of mines and geological surveys, where such critical expertise resides.

To address the first issue, in the absence of detailed financial information relating to the cost incurred and the margin applied by the service provider, tax authorities must analyze the nature of the related contract in terms of the function undertaken, the people, skills and assets utilised and the risk born e, to assess whether the economic substance of the deal justifies the charges imposed. In addition the tax authority should negotiate tax information exchange agreements with key jurisdictions in which service providers are residents. This may lead to adjustments and, in exceptional circumstances, to re-characterisation of the transaction in question into what the arm's length conditions should have really been. This action is generally strongly resisted by taxpayers on the basis

of its potential for double taxation, but this danger may be exaggerated as it can be in most cases addressed through MAP[171] and through the general practice in most jurisdictions to provide foreign taxation credits or exemptions. With time some of these information gaps will hopefully be filled by increased bilateral and multilateral international exchanges of tax information agreements aided by improved computer capacity and the implementation of the BEPS country-by-country reporting initiative.

In the short term, governments may attempt to capture a greater proportion of the rents from licensing access to their nonrenewable mineral resources in the ground, that is, before the value chain starts and of profits through withholding taxes on outgoing remittances for dividends, interest, royalties and fees for use of specialized assets and services. The effectiveness of this approach, however, may be reduced or even impeded by the existence of unfavorable DTAs.

The complexity of determining an arm's length price for the transfer of mineral products to a related party increases the further upstream the product transferred is from its final refined metallic form satisfying the specification requirements of an established terminal market providing daily price quotations. Even in the case of downstream processed metallic commodities, the terms of off-take agreements, particularly excessively flexible conditions as to the price determination modalities within their 'quotation period' and timing of payments, can present challenges in making appropriate adjustments to the reference price. The 'sixth method', adopting the price of the commodity quoted on the day of its loading for export as the basis for other necessary adjustments, appears to have been effectively used by many South American jurisdictions and may be worth considering in other developing countries. When it comes to intermediate mineral products such as concentrates, however, due to the great variety of possible unique quality factors potentially significantly affecting their arm's length price, the situation becomes extremely more complex. Besides good physical monitoring of quantities and qualities of exports by Customs, and because of the absence of quotations and comparables, auditing would require extremely specialised technical and marketing knowledge not generally present in tax administrations, and adjustments would most likely be conductive to disputes. A possible approach in the future may be to seriously consider the negotiation of APAs with major producers leading to a transfer price expressed as a set percentage of the value of the metal contained in the concentrate based on its quotation price if available. This negotiation process may be assisted, if necessary, by specialised external consultants. Nonetheless, some technical training will be required for tax officials, who generally have legal and accounting professional backgrounds, with regard to metal accounting and mining economic concepts in general. Timing of payment outside normal industry practice could be addressed by the imputation of interest on the abnormal credit extended between the parties.

In the case of routine corporate support services, valid comparables may exist because in most cases there are active local service providers, and global and regional databases may have some degree of relevance to the African situation. The question still remains as to whether, due to the controlled nature of the transactions, there may not be a tendency to overservice the mining subsidiary. For nonroutine specialised services, such as marketing and technical services, auditing is harder, as the costs involved in providing these services in the accounting records of the mining company in the source country is generally an aggregated measure of the related expenses. To the extent that the accounts of the foreign suppliers are generally not accessible to the tax administration, it is very difficult if not impossible to analyze their charges in terms of the fixed and variable costs incurred and the margins demanded for their services. In addition most databases express these charges as a percentage of the value of sales or of the capital cost of the project being developed, which is not helpful in truly determining to what degree they comply with the arm's length principle. A tax authority will need to adapt to use these aggregated percentage ratios as a basis for comparison and exercise their best judgement to assess, on a case-by-case basis, whether they are relevant to the services being audited and whether the unique skills and assets used and the risks

[171]Where a treaty applies, MAP procedures may not resolve all double taxation issues.

borne by the supplier justify the position of the charge within the often wide inter-quartile range, or make adjustments if necessary. The higher side of the range may be justified if the function performed makes significant use of innovative, proprietary, often patented intangibles, techniques and processes, unless a separate user licence or royalty has been charged for their use. Administrations must, however, be weary of 'soft IP' claims. Unfortunately comparables databases relating to IP valuation and licences/royalties for their use are particularly rare and in general not specific to mining. Finally the current push for recognition in the allocation of profits of LSAs in source countries, which in the context of mining would include the value of 'ready access to mineral resources' in Africa, should be supported and systematised.

The debt to equity ratios allowed by current thin capitalisation rules in Africa (i.e., typically in the range of 2:1 to 3:1), while possibly valid for general application, often exceed the ratios typically observed in mining elsewhere in the world as the industry is viewed as risky and its assets essentially illiquid. Its concessionary nature represents an incentive for MNEs to fund their operations through the highest possible level of either intra-group loans or a combination of debt facilities from both related and unrelated sources, with the latter secured for the enhanced financial risk through guarantees provided by a related entity. Issues do also arise in terms of whether a risk premium should be added over the MNE's cost of borrowing in determining the interest rate to be applied to the loans provided to a mining subsidiary in a risky developing country. Such a practice, as well as that of MNEs lending from retained sources of cash, may, if unchecked, lead to a situation where interest deductions at the consolidated MNE level exceed the interest expenses actually incurred. This issue, which in part relates to the practice of ring-fencing of mining subsidiaries, has been addressed and with time will be resolved if African jurisdictions adopt the OECD's BEPS Action IV recommendation to allow an entity to deduct net interest expenses up to a benchmark net interest/EBITDA ratio to be set within a corridor of 10% to 30%. Meanwhile, some jurisdictions have resorted to only allow deductions based on the average consolidated borrowing cost of the MNE or capping the allowable interest using a rate derived by adding a defined premium (e.g., 200 points) to a regularly published international rate of interest such as LIBOR. As to financial guarantees and other forms of guarantees, insurances and hedging, the criteria for deductibility should be heavily weighted on whether and/or to what a degree the related arrangements actually shift risk from the MNE at the consolidated level to a third unrelated party.

Finally, the assistance provided by various international institutions is gradually ensuring that most African jurisdictions have or soon will have an adequate legislative basis to address transfer pricing issues in their countries. The main challenge is now to put in place adequate administrative capacity to effectively enforce it. The problem has two dimensions, that is to say transfer pricing in the general taxation context and specifically in mining, and the possible solutions will differ as a function of the current and projected importance of this industry and the size of its participants in the context of the various countries' economies, which have been quantified in Part B. Letting aside for the moment the critical question of availability of specialised resources, in mineral economies, the establishment of a large taxpayer unit (LTU) with special functional sections, including a transfer pricing one and, in some cases, even of a specialised mining section within it, may be justifiable. The establishment of a market-based structure and particularly of an LTU need to be weighed against the danger of possible cultural isolation from the rest of the organisation, duplication of internal functions and efforts and may in some cases not represent the best way of deploying the specialised resources. Structuring along tax types or functions may provide an alternative if resources are, as in the case of most African administrations, scarce. Transfer pricing issues could then be either addressed in the context of general tax audits, or with the support of embedded transfer pricing specialists or, at the limit, a stand-alone specialist unit may be established to carry out specific transfer pricing audits. The last approach is currently relatively rare in Africa, but establishment of specialised transfer pricing units may be justifiable in the case of some jurisdictions in the future. It must, however, be ensured that other important areas of tax administration, as for instance of thin capitalisation and capital allowances rules, are not neglected in the process. The main issue is, of course, how to resource an appropriate structure in terms of securing personnel

with the necessary transfer pricing skills even when the financial resources to do so may be made available. This is because government's employment conditions are generally uncompetitive in tapping a limited pool of qualified tax professionals relative to those in the private sector, which makes it difficult for government to portray itself as an employer of choice. In the case of Africa this is likely to be a long-protracted process involving significant training of possibly bonded internal resources including secondment to more advanced tax jurisdictions and the establishment of follow-up mentoring and clear career paths, temporary use of external tax specialists with emphasis on transfer of knowledge, the establishment of ad hoc or regional specialist Multinational Transfer Pricing Units (MNTPUs) units pooling expertise from various countries based on agreed prioritisation and cost-sharing rules, implementation of the OECD's 'tax inspectors without borders' initiative, etc. Cooperative approaches may also include the joint acquisition and sharing of key comparables databases, and of knowledge-sharing and e-learning platforms, which would otherwise prove unaffordable for individual tax administrations.

Experience suggests that in the case of transfer pricing prevention is better than cure. Most cases that have led to litigation in court were lengthy, expensive, absorbed significant resources and by and large proved unsuccessful for tax administrations. There is no doubt that emphasis must be placed on promoting voluntary compliance and reducing litigation, which in the African context will require significant improvement in taxpayer relations, lessening of the current tendency for adversarial positions, communication and consultation and significant strengthening of tax administration negation skills.

In essence, improvements in the effectiveness and efficiency of administration of transfer pricing rules and audits in Africa against a background of continuous and fast expansion and evolution of global trade will need to keep pace with it, which will involve significant cost and require both a concerted effort at the domestic level and continued international support. These actions, however, should not detract from the significant effort still needed to lift the generally inadequate tax administration capacity of many African jurisdictions.

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Dr. Pietro Guj is a Research Professor at the Centre for Exploration Targeting, at the University of Western Australia and is an Adjunct Professor in Mineral Economics in the Mineral and Energy Economics Department of the Graduate School of Business of Curtin University.

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He was the Deputy Director General of the Department of Minerals and Energy and the Executive Director of the Geological Survey of Western Australia with responsibility for their general governance and strategic direction in formulating and achieving their support and regulatory objectives for the mining and petroleum industry in Western Australia. This included responsibility for the formulation of minerals and petroleum policy and administration in Western Australia.

Prior to this, as a financial executive of the Water Authority of Western Australia, he was responsible for financial plans, policy and strategies for recurrent income, expenditure and capital investments amounting to hundreds of millions of dollars per annum and for the pricing and tariff policy reform leading to corporatization of this authority.

These government roles were preceded by over 20 years in the field of geology, exploration and mining in Afghanistan, Pakistan, South Africa, and Namibia and finally in Western Australia mostly for MIM Holdings (now Xstrata).

Dr Guj's main interests are in project evaluation, risk and decision analysis as applied to the mineral industry and in the formulation and administration of internationally competitive regulatory and fiscal regimes; fields in which he has researched, lectured, published and consulted widely internationally.

Stephanie Martin
Stephanie Martin has over 35 year's experience in tax administration in the Australian Taxation Office (ATO). This includes 15 years as a Senior Executive with responsibilities ranging from International Tax, Large Business compliance risk, Aggressive Tax Planning and Resource Taxation. Her roles have involved all aspects of tax administration including engagement with politicians, industry and other stakeholders, law design, technical advice, litigation, risk assessment and more practical aspects of day-to-day administration. She has led the ATO's input on international issues as part of the Business Tax Review in 1999 as well as leading the ATO's input to the Policy Transition Group[172] review and report on taxation on resource tax arrangements and exploration in 2010.

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[172]Appointed by the Australian government and co-chaired by the then Minister for Resources and Energy, Mr. Martin Ferguson AM MP, and Mr. Don Argus AC.

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Steef Huibregtse is the founding member, CEO and Managing Partner of Transfer Pricing Associates. He has more than 25 years of experience in the area of international tax and transfer pricing consulting, and has been a leading transfer pricing partner with a wide reputation in the area of transfer pricing strategy, risk management, design, documentation and implementation services. His expertise covers more than 50 countries and a wide variety of industry, including telecommunications, automotive, fast moving consumer goods, financial services, pulp and paper, pharma and biotech, medical devices, oil and gas, publishing, retail and licensing. Steef's proven track record includes the development of Global Transfer Pricing Control Framework Toolbox, involvement in more than 2,000 regional and global transfer pricing studies, development of a Global Benchmark Platform, and development of a global portal for intangibles.

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Glossary

AfDB	African Development Bank
ALP	Arm's Length Principle
APA	Advance Pricing Agreement
ATAF	African Tax Administration Forum
ATO	Australian Tax Office
BEPS	Base Erosion and Profit Shifting
BTT	Bilateral Tax Treaty
CbC	Country-by-Country Reporting
CET	Centre for Exploration Targeting
CFC	Controlled Foreign Corporation
CIAT	Centro Interamericano de Administraciones Tributarias
CIT	Corporate income tax
CP	Cost Plus
CREDAF	Centre de Recontre des Administrations Fiscales
CSO	Civil Society Organization
CUP	Comparable Uncontrolled Price
Curtin	Curtin University, Perth, Western Australia
DMP	Western Australian Department of Mines and Petroleum
DTA	Double taxation agreement
EAC	East African Community
ECOWAS	Economic Community of West African States
EITI	Extractive Industry Transparency Initiative
EOI	Exchange of Information
FA	Formula Apportionment
FDI	Foreign Direct Investment
FTC	Foreign Tax Credit
GAAR	General Anti-Avoidance Rule
GOS	Gross Operating Surplus
IFC	International Finance Corporation
IMF	International Monetary Fund
IM4DC	International Mining for Development Centre
IP	Intellectual Property
LOB	Limitation of Benefits
LSA	Location specific advantage
LTO	Large Taxpayer Office
MAP	Mutual agreement procedure
MNE	Multinational Enterprise
MT	Minimum Tax

OECD	Organisation for Economic Co-operation and Development
OECD Guidelines	OECD, Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, July 2010
OECD Model Convention	OECD Model Tax Convention on Income and on Capital
PE	Permanent Establishment
RPS	Residual Profit Split
RSP	Resale Price
SARS	South Africa Revenue Services
TA	Technical Assistance
TIEA	Tax Information Exchange Agreement
TNMM	Transactional Net Margin Method
TP	Transfer pricing
TPA	Transfer Pricing Associates
UN	United Nations
UN Manual	United Nations Transfer Pricing Practical Manual for Developing Countries
UWA	The University of Western Australia
VAT	Value Added Tax
WBG	World Bank Group
WHT	Withholding Tax

Appendix A.1

Detailed List of the Most Common Functions Performed by a Related Party in Various Stages of the Mining Value Chain

Primary functions/processes which may be provided at the various stages of the mining value-adding chain by a related party may include:

Acquisition/exploration

1. Sub-license of exploration/mining rights (prospecting, exploration and mining licenses/leases, miscellaneous leases, access and surface rights, drilling rights, etc.);
2. Licensing of scientific studies, information, databases and software used for exploration purposes (geological, geochemical, geophysical, geographical/topographical, etc.);
3. R&D services for the development of IP used for exploration purposes (e.g., IP related to remote sensing, interpretive geological, geochemical and geophysical techniques, GIS and image processing, etc.);
4. Seconding of geoscientists, engineers, metallurgists, etc.;
5. Technical and laboratory services;
6. Leasing of exploration plant and equipment and of camp facilities;
7. Technical and financial expertise for the conduct of scoping and feasibility studies;
8. Exploration tenement management and securing all necessary government approvals;
9. Legal advice for the drafting and management of farm-out/in and joint venture agreements, etc.; and
10. Treasury services to arrange the raising of equity funds through initial public offers (IPOs) and placements.

Mine development and construction

1. Mine and processing plant design,
2. Engineering, procurement, construction (EPC) and project management services (EPCM),
3. Procurement of earth-moving, mining and processing plant and equipment,
4. Establishment of off-lease transportation, road, rail, stockpiling/blending and port facilities,
5. Logistics management services,
6. Treasury services relating to arrangement of project finance including capitalization of interest and lease of plant and equipment,
7. Provision of brokerage and captive insurance services,
8. Legal and contract management services.

Mining and concentration

1. Contract R&D for the development of IP used for exploitation purposes;
2. Acquisition and/or leasing of 'sustaining' plant and equipment for extraction purposes;
3. Acquisition and/or leasing of 'sustaining' transportation and other logistics assets;
4. Sales/transfers of ore or concentrates to smelters or trading entities;
5. Logistics management services;
6. Engineering and technical services and secondment of professional staff;
7. Treasury services relating to arrangements for ongoing operational funding needs, working capital, cash flow pooling and management and for the funding of 'sustaining' capital and project design changes, e.g., mine and processing plant expansion, underground extension of open pit mines, etc.;
8. Provision of brokerage and captive insurance services;
9. Legal and contract management services;
10. PR, government, community and stakeholders liaison services.

Smelting and refining

1. Contract R&D for the development of IP used for processing purposes;
2. Seconding of professional staff;
3. Acquisition and/or leasing of 'sustaining' plant and equipment for the processing of minerals and/or their transportation and other logistics assets;
4. Sales/transfers of concentrates and/or intermediate or refined mineral products or metals to trading entities;
5. As for points 5 to 10 of mining and concentration above.

Trading, marketing and sales

1. Sales of partially processed/finished mineral products to external customers;
2. Customer liaison;
3. Marketing research and identification of opportunities for increasing sales volumes and price of mineral products;
4. Negotiation of sales contracts, processing of invoices and related payments;
5. Warehousing, packaging and distribution services;
6. Shipping brokerage and shipping services;
7. Cargo insurance brokerage and services;
8. Procurement services to production entities;
9. Logistics and related services;
10. Foreign exchange management.

Appendix A.2

Spot Sale Agreement for the Delivery of Iron Ore through the Tianjin Bohai Commodity Exchange e-Spot Trade Facility

Buyer: (transaction code) (dealer's name) Seller: (transaction code) (dealer's name) The contract is signed on MM/DD/YY

The contract belongs to the sales contract made by and between the seller and buyer in accordance with Tianjin Bohai Commodity Exchange (hereinafter referred to as the "Exchange")'s Bohai Exchange Spot Trade (BEST) Rule, so that the spot trade of iron ore could be conducted through the Exchange's e-trading system.

Whereas:

1. As approved by the Exchange, both the seller and the buyer become the dealers thereof and sign the *Trading Agreement of Tianjin Bohai Commodity Exchange* with the Exchange;
2. Both the seller and the buyer have carefully read and fully understand the *Management Method for Spot Trading at Tianjin Bohai Commodity Exchange* as well as agree to observe the relevant stipulations of the Exchange.

In accordance with the *Contract Law of the People's Republic of China, Interim Procedures for Supervision on the Trading Market of Tianjin Bohai Commodity Exchange* issued by Tianjin Municipal People's Government and the Exchange's related rules, the contract is made by and between the seller and the buyer in the principle of voluntariness, impartiality and sincerity.

I. Traded commodity
   - 1.1 Commodity name: iron ore
   - 1.2 Commodity code: BIO

II. Quantity
   - 2.1 The quantity of iron ore transacted between the seller and the buyer through the Exchange's e-trading system (unit: ton (1 ton herein = 1000 kg));

III. Ordering price
   - 3.1 The net price of iron ore reached between the seller and the buyer through the Exchange's e-trading system (i.e., the price without the VAT (CFR price) is _____ Yuan (RMB)/ dry ton.

IV. Settlement venue
   - 4.1 The settlement venue of commodity hereunder shall be the settlement warehouse as assigned by the Exchange.

V. Settlement time
   - 5.1 The settlement declaration for successfully transacted iron ore of the day is made by the seller and the buyer through the Exchange's e-trading system. The settlement

shall be conducted as per the *Tianjin Bohai Commodity Exchange's Method for the Settlement of Iron Ore (Interim)*.

5.2 Both the buyer and the seller shall receive or pay the compensation for the deferred settlement according to the settlement declaration and pairing result as well as the *Management Method for Spot Trading at Tianjin Bohai Commodity Exchange*.

VI. Quality requirements

The iron ore to be settled shall meet the requirements as follows:

6.1 The standard product shall be the iron ore which meets the following quality requirements:

Variety: ore fines; grade Fe: 62%; particle Size: no less than 90% for the size less than 10mm, and no more than 40% for the size less than 0.15mm; phosphorus content P: ≤0.08%; sulphur content S: ≤0.06%; aluminum content Al_2O_3: ≤3%; silica content SiO_2: ≤6.5%; moisture content H_2O: ≤8%.

6.2 The quality standard and price adjustment of the substitute for the settled commodity (all the adjustments shall be based on the relevant indicators of standard product):

Items	Scope of Quality Index	Price Adjustment
Grade	Fe% ≥ 62	The settlement price at the settlement declaration date + per dry metric ton unit price × (number of dry metric ton unit of actually measured grade−62)
	56 ≤ Fe%<62	The settlement price at the settlement declaration date−per dry metric ton unit price × (62−the number of dry metric ton unit of actually measured grade)
Particle size	>10mm 15% max	Quality price differences: for every increase of 1%, 1.2 Yuan/dry ton is decreased
Phosphorus content	0.15% max	Quality price differences: for every increase of 0.01%, 0.3 Yuan/dry ton is decreased
Sulphur content	0.10% max	Quality price differences: for every increase of 0.01%, 0.3 Yuan/dry ton is decreased
Aluminum content	5% max	Quality price differences: for every increase of 1%, 10 Yuan/dry ton is decreased
Silica content	8% max	Quality price differences: for every increase of 1%, 10 Yuan/dry ton is decreased

Note: 1. Per dry metric ton unit price = (the settlement price at the settlement declaration date − (average freight of 30 days before the settlement declaration date (exclusive of the date thereof)/(1 − 0.08))/62;

2. The average freight of 30 days before the settlement declaration date shall be calculated through the simple arithmetic mean according to the freight rate in Baltic Exchange for main ship routes.

6.3 The quality standard in the e-contract for the moisture content is only used for weight calculation of physical delivery and shall not be used as the basis for determining the violation of quality standard. The physical delivery shall be settled as per the dry basis after full deduction of moisture.

VII. Cash deposit

9.1 In order to guarantee the successful implementation of the contract, the cash deposit for the order is paid by the seller and buyer in accordance with the *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange* and *Details Rules of Tianjin Bohai Commodity Exchange for Settlement* as the contract is established. The cash deposit for the order is 20% of total contact price.

7.2 For the buyer and seller with successfully paired settlement declarations, they shall pay 10% of the value (calculated as per the settlement price (including the added-value tax and duties) of the day) of the settled commodity specified by the Exchange as the cash deposit for the settlement. Meanwhile, the Exchange will return the cash deposit for the order as specified in the relevant e-trade contract.

VIII. Settlement of the payment

8.1 After the contract is established, the settlement of payment is conducted in accordance with the *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange*, *Detailed Rules of Tianjin Bohai Commodity Exchange for Spot Trading of Iron Ore* and *Notes of Tianjin Bohai Commodity Exchange on Foreign Currency Settlement for Spot Trading of Iron Ore*.

IX. Change of ownership

9.1 When the physical delivery is settled by the seller and the buyer, the seller shall provide the buyer with a full set of relevant documents in accordance with the *Measures of Tianjin Bohai Commodity Exchange for Spot Settlement of Iron Ore* if the commodity to be settled is the spot commodity at the bonded area, so as to assist the buyer to complete the change of customs ownership or customs clearance and change of warehouse ownership.

X. Vat special invoice

10.1 When the physical delivery is settled by the seller and the buyer, the seller shall issue the vat special invoice to the buyer in accordance with the *Measures of Tianjin Bohai Commodity Exchange for Iron Ore Settlement (Interim)* if the commodity to be settled is the spot commodity at the port.

XI. Liability for breach of contract

11.1 In accordance with the *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange* and the related rules of the Exchange, the buyer constitutes the breach of contract in case of one of the situations as follows:

11.1.1 Failing to timely pay sufficient cash deposit or amount to the Exchange;

11.1.2 Failing to confirm the commodity and submit the documents required for customs clearance and bank remittance within the time specified.

11.2 In accordance with the *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange* and the related rules of the Exchange, the seller constitutes the breach of contract in case of one of the situations as follows:

11.2.1 Failing to timely pay sufficient cash deposit for the order to the Exchange;

11.2.2 Failing to timely submit the sufficient number of *Warehouse Stock Certificates* to the Exchange;

11.2.3 The delivered commodity is inconformity with the quality standard as specified in the contract;

11.2.4 Failing to timely submit the full set of relevant supporting documents to realize the change of customs ownership or customs clearance;

11.2.5 Failing to timely issue the value added tax invoice.

11.3 As any party herein violates the contract, the default party shall bear the liability for breach of contract to the observant party in accordance with the *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange* and related rules of the Exchange.

XII. Exceptions

12.1 Due to the influence of earthquake, typhoon, fire disaster and the main change of state's policy or the force majeure, the contract is not fully or partially implemented. The liabilities thereof shall be fully or partially exempted according to the influence of force majeure. In case failing to implement the contract owing to the force majeure, one party shall timely inform the other party.

12.2 If the contract is not fully or partially implemented due to the policy and legal cause, each party herein could be fully or partially exempted from the liabilities.

XIII. Contract signing
- 13.1 Both the seller and the buyer could input the transaction password through their rented dealer seat to enter the Exchange's e-trading system. The contract shall come into force at the day when it is formulated.
- 13.2 The code, time and password of transaction corresponding to the contract shall be deemed as the electronic signatures of both the seller and the buyer.

XIV. Other clauses
- 14.1 The unexhausted matters herein shall be implemented by both the seller and buyer in accordance with the *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange* and related rules of the Exchange.
- 14.2 Any disputes arising from or related to the implementation of the contract shall be solved by the seller and the buyer through friendly negotiation or mediated by the Exchange; if such disputes are not solved through negotiation, they shall be submitted to Tianjin Arbitration Committee for arbitration.
- 14.3 The contract shall be interpreted by the Exchange as per the transaction rules thereof.
- 14.4 The annexes of the contract have the same legal effect as the contract.

Annex 1: Supplemental Agreement for e-Spot Trading of Iron Ore at Tianjin Bohai Commodity Exchange

The seller and the buyer of Bohai Commodity Exchange for e-spot trading of iron ore shall be the dealers of Bohai Commodity Exchange, as for trading of the iron ore, both the seller and the buyer reach the agreement as follows:

I. This agreement constitutes the contract document with the documents as below:
   (1) Contract for e-spot trading of iron ore (example);
   (2) Notes on e-spot trading of iron ore;
   (3) Other contract documents.

II. In accordance with the *Interim Procedures for Supervision on the Trading Market of Tianjin Bohai Commodity Exchange*, *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange* and related rules of the Exchange, both the seller and the buyer know and agree that any party in the contract could transfer the rights and obligations hereunder to the third party without the other party's approval after the contract for e-trading of iron ore is established.

III. In accordance with the relevant clauses of *Management Methods for Spot Trading at Tianjin Bohai Commodity Exchange*, *Measures for Risk Management at Tianjin Bohai Commodity Exchange* and *Detailed Rules of Tianjin Bohai Commodity Exchange for Spot Trading*, the seller and buyer could complete the transaction, delivery and settlement in the spot trading of iron ore.

Annex 2: Notes of Bohai Commodity Exchange on e-Spot Trading of Iron Ore

I. The commodity code of iron ore is BIO.

II. The min. trading unit of iron ore is 10 tons; unit of quotation is Yuan/dry ton; min. unit of price change is 1 Yuan/dry ton.

III. The handling fees charged by the Exchange for trading of iron ore is 0.05%.

IV. Min. number of iron ore settlement declarations is 3000 tons; the number of settlement declarations shall be the integral multiple of 500 tons. The handling charge for the settlement is 1 Yuan/ton.

V. Time for iron ore settlement declaration of the day is 9:00~11:30 and 13:30~16:15 (Beijing Time). The time for intermediate position settlement declaration is 16:15~16:30 (Beijing Time). If the settlement declarations of the day are not successfully matched, the dealers could receive the compensation for deferred settlement in accordance with the rules of Bohai Commodity Exchange on spot trading.
VI. The rate of compensation for deferred settlement of iron ore is 0.05%.
VII. The seller and the buyer's settlement by agreement shall be subject to *Detailed Rules of Tianjin Bohai Commodity Exchange for Settlement by Agreement*.

Appendix A.3

Long-Term Sales Contract for Copper Concentrate

Purchase Agreement Number

This Agreement is concluded this day of xxx between EMED-TARTESSUS SL, of Calle Balbino Marron, 8, Edificio Viapol, Floor 6, Office 19, 41018, Seville, Spain and registered under Tome 4768, Folio 108, Sheet SE-76140 (the "Seller") and EMED MARKETING LIMITED of 1 Lambousa Street, 1095 Nicosia, Cyprus (the "Buyer") which agrees to buy and pay for the copper concentrates and other copper bearing products produced by the Seller at Minas Rio Tinto, Huelva, Spain (the "Mine").

1. **SCOPE OF AGREEMENT**
   The Seller agrees to sell and the Buyer agrees to buy 100% of the Products (as defined below) on the terms and conditions set out below.
2. **DEFINITIONS**
   In addition to the terms defined above, the following terms shall have the following meanings when used in this Agreement:

"Agreement"	means this offtake agreement.
"Appendix"	means an appendix to this Agreement.
"Business Day"	means any day except a Saturday or Sunday on which the banks in the city of New York, New York, United States of America are generally open for the conduct of business.
"Clause"	means a clause of this Agreement.
"Defaulting Party"	means the party with respect to whom an Event of Default occurs.
"Early Termination Date"	means the date notified by the Non-Defaulting Party in accordance with Clause 21.l(a).
"Event of Default"	means any of the following: (a) the failure of the Defaulting Party to pay when due any required payment under this Agreement within three (3) business days after written notice thereof; (b) the failure of the Depending Party to comply with its other obligations under this Agreement and such failure remains uncured for five (5) business days after written notice thereof; (c) any representation or warranty made by the Defaulting Party under this Agreement shall prove to be untrue when made in any material respect; or (d) the Defaulting Party (i) makes an assignment or any general arrangement for the benefit of creditors, (ii) files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause of action under any bankruptcy or similar law for the

protection of creditors, or has such a petition filed against it and such petition is not withdrawn or dismissed for 30 days after such filing, (iii) otherwise becomes bankrupt or insolvent (however evidenced), (iv) unable to pay its debts as they fall due, makes a composition with its creditors, commits any act of bankruptcy, becomes subject to an order for winding up or dissolution or to the appointment of an administrator, examiner, receiver, custodian, liquidator, trustee or other similar official.

"INCOTERMS 2000" means the international rules for the interpretation of the most commonly used trade terms in international trade, published by the International Chamber of Commerce in 1936 and amended in 1953, 1967, 1976, 1980, 1990 and 2000.

"LME" means the London Metal Exchange.

"Non-Defaulting Party" means the party following an Event of Default who is not the Defaulting Party.

"Products" means the copper concentrates and any other copper bearing products produced by the Mine.

"US$" and "US Dollar" mean the lawful currency of the United States of America.

"1 kilogram" means 1000 grams.

"1 ounce" means 1 troy ounce of 31.10352 grams.

"1 pound" means 453.593 grams.

"1 ton" means 1 metric ton of 1000 kilograms or 2204.62 lbs.

"1 unit" means 1% of the net dry weight.

3. **DURATION AND QUALITY**
   - 3.1 This Agreement shall come into effect on the date on which it is executed by the last party to execute and shall expire on whichever is the earlier of the lifetime of the Mine, or the tenth anniversary of the commencement of this Agreement.
   - 3.2 The quality of the Products shall be as per the assay provided by the Seller and provisionally attached to this Agreement as Appendix 1.
4. **SHIPMENT**
   The lot sizes and shipment schedule will be mutually agreed between the parties annually and amended as necessary during the lifetime of the Agreement, subject to changes in the production and freight availability.
5. **DELIVERY**
   Delivery shall be CIFFO Main Chinese Port, or parity (as such terms are defined in INCOTERMS 2000)
6. **PRICE**
   The price of the Products shall be the sum of the metal payments less the deductions as specified below:

   6.1 Metal Payments

   Copper
   96.50% (ninety-six point five zero percent) of the final copper content, subject to a minimum deduction of 1.0 (one point zero) units shall be paid for at the official London Metal Exchange cash settlement quotation for Grade A copper, as published in the Metal Bulletin in London in US Dollars and averaged over the quotational period.

   Silver
   90% (ninety percent) of the final silver content, subject to a minimum deduction of 30 grams per dry metric ton, shall be paid for at the London Bullion spot US Dollar quotation for silver, as published by the Metal Bulletin in London in cents and averaged over the quotational period.

   Gold
   90% (ninety percent) of the final gold content, subject to a minimum deduction of 1 gram per dry metric ton, shall be paid for at the mean of the official London

AM/PM US Dollar quotations for gold, as published in the Metal Bulletin in London and averaged over the quotational period.

6.2 Deductions

The treatment and refining charges, including the refining charges for gold and silver, shall be agreed mutually between the Buyer and the Seller during the fourth quarter of each calendar year prior to the contractual year of shipment.

7. **QUOTATIONAL PERIOD**

The quotational period(s) shall be agreed mutually between the Buyer and the Seller during the fourth quarter of each calendar year prior to the contractual year of shipment.

8. **PAYMENT**

8.1 All payments shall be in US Dollars, by telegraphic transfer to the Seller's nominated account.

8.2 90% (ninety percent) of the provisional invoice value of each shipment shall be paid, 30 days following the presentation of a full set of shipping documents for each shipment.

8.3 The balance of 10% (ten percent) shall be paid promptly upon the completion of all other formalities regarding the final agreed weights, assays and prices of each shipment, as described in Clauses 12 and 13 below.

9. **TITLE AND RISK**

9.1 Title to Products within each shipment passes from the Seller to the Buyer upon the Buyer making the first provisional payment in respect of that shipment in accordance with Clause 8 above.

9.2 Risk in the Products within each shipment will pass from the Seller to Buyer when the Products in question pass over the ship's rail at the port of loading.

10. **INSURANCE**

Insurance shall be covered by Buyer from the time risk passes from the Seller to the Buyer.

11. **TOTAL AND PARTIAL LOSS**

11.1 Total loss

In case of total loss of shipment after risk passes from the Seller to the Buyer (as defined in Clause No. 9.2), provisional payments shall be in accordance with Clause 8 and final settlement shall be made in accordance with Clause 8.3 on receipt of the Seller' provisional assay certificate and otherwise in accordance with the terms of this Agreement. The Seller undertakes to assist the Buyer to the best of the Seller's ability in providing any documentation the Buyer may request from time to time in order to pursue any insurance claim. Insurance settlement shall accrue to the Buyer. For quotational period and provisional payment purposes the date of arrival of the vessel shall be considered as the 301 calendar day after the bill of lading date.

11.2 Partial Loss

In the event of partial loss of the cargo due to insured perils, after risk passes from the Seller to the Buyer (as defined in Clause 9) and before completion of weighing/sampling (as defined in Clause 12):

(a) provisional payment(s) shall be made in accordance with Clause 8.2;

(b) final settlement shall be made in accordance with Clause 8.3

in each case on that part of the cargo which has been safely delivered in accordance with the terms of this Agreement. The Seller undertakes to assist the Buyer to the best of the Seller's ability in providing any documentation the Buyer may request from time to time in order to pursue any insurance claim. Insurance settlement shall accrue to the Buyer.

12. **WEIGHING, SAMPLING AND MOISTURE DETERMINATION**

12.1 The operations of weighing and sampling determination shall be carried out in the port of discharge or receiving smelter in the usual technical manner. The final weight thus determined shall be final and binding for settlement purposes.

12.2 The Seller shall have the right to appoint an intentionally recognized supervision company to represent them during these operations.

12.3 The size of the lots for sampling purposes shall be approximately 500 (five hundred) wet metric ton. 6 (six) sample portions shall be made from each such sample lot and distributed as follows:
2 sets of sealed samples for the Seller
2 sets of sealed samples for the Buyer
2 sets of sealed samples to be reserved by an internationally recognized supervision company for eventual umpire purposes.

13. **ASSAYING**

13.1 Assays shall be made independently by each party and the results of such assays shall be exchanged on a lot-by-lot basis by registered airmail or special courier on a mutually agreed date.

13.2 If the difference between the results of both parties be not more than:

Copper	0.3% I dmt	(zero point three percent per dry metric ton)
Silver	20 grams I dmt	(twenty grams per dry metric ton)
Gold	0.5 grams I dmt	(zero point five grams per metric ton)

then the exact mean of the two results shall be taken as the agreed assays for the purpose of final accounting.

13.3 In the event of greater difference in assay exchange than contractually agreed, an umpire assay shall be made by an umpire laboratory to be mutually agreed upon between the Buyer and the Seller, which shall be one of the following.

1) Alfred H Knight International Ltd.
Eccleston Grange
Prescot Road
St. Helens
Merseyside WAl O 3BQ
UK
2) Alex Stewart Assayers Ltd.
Caddick Road
Knowsley Business Park
Prescot 134 9hp
UK
3) Inspectorate International Ltd.
2 Perry Road
Witham
Essex CMS 3UT
UK

13.4 If the umpire assay falls between the results of the two parties, the arithmetical mean of the umpire assay and the assay of the party, which is the nearer one to the umpire's shall be taken as the agreed assay.

13.5 If the umpire assay falls outside the exchange results, the middle of the 3 (three) results shall be final. If the umpire results coincides with the result of either of the two parties or is the exact mean of the exchanged result, the umpire assay shall be fine.

13.6 The cost of the umpire assay shall be borne by the party whose result is farthest from the umpire assay is the exact mean of the exchanged results.

14. **FORCE MAJEURE**

14.1 Neither party shall be liable to the other if it is rendered unable by an event of Force Majeure to perform in whole or in part any obligation or condition of this Agreement, except for any payment or indemnification obligations, for so long as the event of Force Majeure exists and to the extent that performance is hindered by the event of Force Majeure. During the period that performance by one of the parties of a part or whole of its obligations has been suspended by reason of an event of Force Majeure, the other party likewise may suspend the performance of all or a part of its obligations to the extent that such suspension is commercially reasonable, except for any payment and indemnification obligations. The party rendered unable to perform

shall give written notice to the other party within one business day after receiving notice of the occurrence of a Force Majeure event and the volume of products affected. Such party also shall promptly notify the other when the event of Force Majeure is terminated.

14.2 In the event of suspension of delivered under this Agreement by reason of the Seller or Buyer giving notice under this clause, the Agreement shall be each time extended for a period equal to the period of suspension. In the event that a party's performance is suspended due to an event of Force Majeure in excess of 3 months from the date that notice of such event is first given, and so long as such event is continuing, either party, in its sole discretion, may terminate this Agreement by written notice to the other, and neither party shall have any further liability to the other in respect of this Agreement except for the right and remedies previously accrued under this Agreement, including any payment obligations.

14.3 **"Force Majeure"** means cause or event reasonably beyond the control of a party, including, but not limited to fires, earthquakes, lightning, floods, explosions, storms, adverse weather, landslides and other acts of natural calamity or acts of god; navigational accidents or maritime perils; vessel damage or loss; strikes, grievances, actions by or among workers or lock-outs (whether or not such labor difficulty could be settled by acceding to any demands of any such labor group of individuals); accidents at, closing of, or restrictions upon the use of mooring facilities, docks, ports, harbors, railroads or other navigational or transportation mechanisms; disruption or breakdown of, storage plants, terminals, machinery or other facilities; acts of war, hostilities (whether declared or undeclared), civil commotion, embargoes, blockades, terrorism, sabotage or acts of the public enemy; any act or omission of any governmental authority; good faith compliance with any other, request or directive of any governmental authority; curtailment, interference, failure or cessation of supplies reasonably beyond the control of a party; or any other cause reasonably beyond the control of a party, whether similar or dissimilar to those above and whether foreseeable or unforeseeable, which, by the exercise of due diligence, such party could not have been able to avoid or overcome. A party's inability economically to perform its obligations under this Agreement shall not constitute an event of Force Majeure.

14.4 In any event, if weighing and sampling is at load port the Seller shall ensure that a representative of the appointed internationally recognized supervision company as specified under Clause 12 is allowed free access and is present during these operations.

14.5 Except by the Buyer's written agreement, this Clause 14 shall not apply for any black copper for which vessel space has been booked, pricing has been established or quotational period is running or any payment has been made.

15. **SUSPENSION OF QUOTATIONS**

15.1 The metal prices and currency quotations specified under this Agreement are the quotations in general use for the pricing of the metal content of the concentrate.

15.2 In the event that any of these price quotations cease to exist or cease to be published or should no longer be internationally recognized as the basis for the settlement of concentrate contracts, then upon the request of either party, the Seller and the Buyer will promptly consult together with a view to agree on a new pricing basis and on the date for bringing such basis into effect. The basic objective will be to secure the continuity of fair pricing.

16. **DISPUTE RESOLUTION**

Any dispute arising out of or in connection with this Agreement including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration under the Rules of the London Commission of international Arbitration ("LCIA"), which Rules are deemed to be incorporated by reference into this Clause. The tribunal shall consist of three arbitrators, one to be nominated by Buyer, one by Seller and the third by the President of the LCIA. In case either party fails to nominate its arbitrator then he will be appointed by the President of the LCIA. However, it is understood that

both parties shall be entitled to take any reasonable measures for the protection of rights accrued to them by this Agreement without prejudice to the provisions of this Clause. The arbitration shall be held in London, England. The arbitration tribunal shall state in its award in detail the facts of the case and reasons for its decision. The award shall be final and binding and not subject to appeal.

17. **CHOICE OF LAW**
    - 17.1 This Agreement shall be governed by and construed in accordance with English law.
    - 17.2 The United Nations Convention on Contracts for the International Sale of Concentrate of Vienna (1980) shall not apply to this Agreement.
18. **TAXES AND TARIFFS**
    - 18.1 Any taxes, tariffs and duties whether existing or new on the Products or contained metals or on commercial documents relating thereto or on the cargo itself, imposed in the country of origin shall be borne by the Seller.
    - 18.2 Any taxes, tariffs and duties whether existing or new on the Products or contained metals or on commercial documents relating thereto or on the cargo itself, imposed in the country of discharge and/or the importing country shall be borne by the Buyer.
19. **LICENSES**

    The Seller undertakes that all the necessary export licenses and all other authorizations required for the Products have been obtained (and/or will be obtained) for the entire quantity covered by this Agreement. The Seller furthermore guarantees that such licenses will remain in force for the full life of the Agreement.
20. **ASSIGNMENT**
    - 20.1 Without the prior written consent of the other party, which consent shall not be unreasonably withheld, neither party may assign its rights or obligations under this Agreement in full or in part except that the Seller shall be entitled to assign its rights under this Agreement by way of security to providers of funding to the Seller without the consent of the Buyer.
    - 20.2 Except as expressly provided in Clause 20, a person who is not a party to this Agreement has no right under the Contracts (Rights of Third Parties) Act 1999 (the "Act") to enforce any term of this Agreement but this does not affect any right or remedy of a third party which exists or is available apart from the Act.
21. **DEFAULT**
    - 21.1 Upon the occurrence and during the duration of an Event of Default, the Non-Defaulting Party may in its sole discretion:
        - (a) notify the Defaulting Party of an early termination date (which shall be no earlier than the date of such notice) on which this Agreement and the transactions contemplated hereunder shall terminate;
        - (b) withhold any prepayments due to the Defaulting Patty until such Event of Default is cured; and/or
        - (c) suspend performance of its obligations under this Agreement until such Event of Default is cured.

      If a notice of an Early Termination Date is given under this Clause 21.1, the Early Termination Date will occur on the designated date whether or not the relevant Event of Default is then continuing.
    - 21.2 If an Early Termination Date is established, the Non-Defaulting Party:
        - (a) shall in good faith calculate its aggregate net gains, or losses and costs resulting from the termination of the Agreement and notify the Defaulting Patty of the aggregate net amount owed or owing as of the Early Termination Date, or, if that is not reasonably practicable, as of the earliest date thereafter that is reasonably practicable.
            - (i) If the aggregated amount shows a net loss, the Defaulting Patty shall, within five (5) days of its receipt of such notice pay an amount equal to that loss to the Non-Defaulting Party, including interest at 4% above the base rate from time to time of [Lloyds TSB Bank pie] from the Early Termination Date until

paid, plus any other amounts due and owing under this Agreement (or otherwise) to the Non-Defaulting Party.

(ii) If the aggregated amount shows a net gain the Non-Defaulting Party shall, after giving effect to any setoff rights in accordance with Clause 21.2(b) and subject to Clause 21.3, pay the net amount without interest to the Defaulting Party on the date twenty (20) days after the Early Termination Date.

(b) may (at its election) set off any or all amounts which the Defaulting Party owes to the Non-Defaulting Party under this Agreement or otherwise against any or all amounts which the Non-Defaulting Party owes to the Defaulting Party under this Agreement or otherwise.

21.3 Each party acknowledges that the payment obligations set forth in this Clause 21 are a reasonable approximation of the anticipated harm or loss and acknowledges the difficulty of estimation of actual damages, and each party hereby waives the right to contest such payments as unenforceable, a penalty or otherwise. Neither party shall be entitled to recover any additional damages as a consequence of such harm or loss.

22. **INDIRECT LOSSES**

Neither the Seller nor the Buyer shall be liable, whether in Agreement or in tort or otherwise, for indirect, consequential or special damages or losses of whatsoever nature, however caused.

23. **INCOTERMS 2000**

Insofar as not inconsistent herewith INCOTERMS 2000 (and any later amendments thereto) shall apply to this Agreement.

24. **CHANGE OF CONTROL**

In the event of any actual change in the organization, control or management of the Seller, including without limitation, a change to the majority shareholding or privatization or equivalent process of the Seller, subject always to Clause 20, herein, this Agreement will not be changed or in any way modified and shall continue in full force and effect.

25. **CONFIDENTIALITY**

Each party shall use its best efforts to ensure that the provisions of this Agreement and all information disclosed to it concerning the other party and its assets and businesses and not otherwise publicly available shall be kept confidential and shall, unless otherwise required by law, not be disclosed without the consent of other party to anyone other than:

25.1 to the shareholders and their affiliates, directors, officers, employees, accountants, consultants, counsel and representatives of each party or prospective lenders to each party;

25.2 to any proposed transferee;

25.3 in connection with legal proceeding or required filings with Government agencies, courts, stock exchanges or other regulatory agencies, excluding specific references to the commercial terms of this Agreement.

If such information is so disclosed to any such person or entity, each party agrees to use its best efforts to cause such person or entity to keep such information confidential.

26. **NOTICES**

All notices, requests and other communications under this Agreement shall be in writing and shall be deemed to have been duly given or made when sent by first class mail, postage paid, or via fax addressed to:

Seller: **EMED TARTESSUS SL**
Agios Demetrios Street
Acropolis, Strovolos
2012 Nicosia, Cyprus
Fax +357 22421956
Attn: Mr. Aristidis Anagnostaras Adams/Mr. John Edward Leach

With a copy to:
BAKER & MCKENZIE
Paseo de la Castellana, 92
28046—Madrid
Spain
Attn. Mr. Francisco Escat/Mr. Fernando Berg6n

Buyer: **EMED MARKETING LIMITED**
1 Lambousa Street
1095 Nicosia
Cyprus
Fax: +357 2242 1956
Attn: John Leach

27. **ENTIRE AGREEMENT**
This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes any previous agreements between the patties relating to the subject matter. Each party acknowledges and represents that it has not relied on or been induced to enter into this Agreement by any representation, warranty or undertaking other than those expressly set out in this Agreement. A party is not liable to the other party for a representation, warranty or undertaking of whatsoever nature that is not expressly set out in this Agreement.

IN WITNESS WHEREOF the parties have executed this document.

For and on behalf of **EMED TARTESSUS SL**	For and on behalf of **EMED MARKETING LIMITED**
Name: (print):	Name: (print):
Date:	Date:

APPENDIX A.4
Functional Analysis Questionnaire

The functional analysis is a critical step in transfer pricing compliance. The questions asked and documents sought in this step seek to verify that what is reported to the tax administration reflects what is actually being done—the 'actual conditions'.

Importantly, no discussion of comparability or pricing should take place until after the facts are established by the functional analysis.

The goal of the functional analysis step is to establish: who should get what for the functions performed and identify which parties are responsible for key value-added activity.

The actual rather than alleged drivers of profitability need to be factually established and this will be critical evidence for any adjustments that may occur and any subsequent negotiations or litigation.

It is important that the functional analysis be conducted at the taxpayer's offices and mining facilities as it is these assets and personnel that the auditor will be verifying. The people interviewed should be those performing the function rather than the taxpayer's accountant, lawyer or advisor.

The output of the functional analysis provides the basis for determining:

- who will be the 'tested party',
- what is the most appropriate transfer pricing methodology,
- what are most appropriate comparables.

Note that the miner in Africa may have been stripped of a number of functions, particularly allegedly high-value ones, and so a number of the questions of 'what' functions are performed in the Country, are likely to be met with a 'No' answer and the questions of 'who does the function, are likely to be met with 'Don't know.'

In these situations it may be necessary to consider the use of 'Exchange of Information' with the other Country tax authority or consider how to continue to progress the audit in the absence of such information.

To guard against requested information being produced as counter evidence in litigation, consideration may need to be given to barring the subsequent production of evidence in defence after it had been requested in the Audit phase. (See Section 264A in the Australian Income Tax Assessment Act.) The aim would be to encourage the production of all relevant facts to the tax administration during the audit and limit 'new' facts being produced afterwards. This is not dissimilar from the effect of discovery processes in commercial litigation.

Example functional analysis questions—these would need to be altered or supplemented depending upon the actual situation being audited.

1. **Questions relating to the marketing function** (Seeking evidence to demonstrate that the function is 'really' adding value, and if so, what value and hence what is the appropriate markup for the value added. Who should get the higher price?)
   - Where (as in what country)
     - Where do you carry out your marketing
     - Where do you carry out marketing surveys
     - Where do you monitor market demand
     - Where are sales orders received
     - Where are invoices sent from
   - Who
     - Who assesses demand in foreign markets
     - Do related companies carry out marketing on your behalf
     - Are third party marketers or distributors used
     - Who chooses, authorizes and controls third party distributors
     - Who formulates the marketing budget
     - Who producers product brochures, specification sheets, etc.
     - Who issues the invoice to you
     - Who issues the invoice to the customer
     - Who formulates the projections and sets targets
     - Who is responsible for achievement of sales targets
     - Who negotiates sales contracts, and do they operate autonomously
     - Who engages with customers
     - Who finds new customers and looks after existing customers
     - Who maintains customer lists
     - Who determines product pricing
   - How/What
     - What forms of marketing do you utilize and what do they cost
     - What forms of advertising are used and who pays for it
     - Are trade shows used and, if so, who organizes and pays for them
     - Are samples provided to distributors and who provides them
     - What marketing assistance do you receive and from whom
     - What are the salaries and other costs of marketing employees
     - Do you know who are your competitors/prices and products
     - What marketing decisions require head office approval
     - What are the approvals required for marketing decisions
     - What sales and distribution decisions require head office approval
     - What are the approvals required for distribution decisions
     - How are sales made and who is involved
     - Is there a pricing policy for different product lines (grades, qualities)
     - How much is sold to related companies
     - What is the level of produce refinement for the product sold—ore/pellet/steel
     - Who are your competitors
     - Are products exported, if so, who is responsible for the export function
     - What assets (and at what value) are used in the marketing function
   - Marketing risks
     - What are the market risks
     - Who bears the market risk
     - How significant are the market risks
     - What are the risks related to demand for your products
     - What are the risks related to the supply of your products
     - Does you distributor always buy what you mine and produce
     - Had your miner ever refused or been unable to fill an order
     - What are the major risks in selling products in a foreign country

2. **Questions relating to research and development function and the use of the asset of intellectual property** (Seeking evidence to demonstrate that the function is 'really' adding value, and if so, what value and hence what is the appropriate markup for the value added. Who should get the higher price?)
   - Research and development
     - What R&D do you carry out
     - Is any R&D carried out on your behalf by related companies
     - Do you commission third parties to carry out R&D on your behalf (if so a CUP?)
   - Design of mining processes
     - Where are products designed?
     - Where is processing and beneficiation designed—is propriety know-how used in the refinement of your product and have you assisted in the development of that knowledge?
     - Is it patented?
     - Who owns the patent?
   - Unpatented technical know-how
     - What unpatented technical know-how have you developed
     - Have you developed your own products or processes—are they unique
     - Are there licensing agreements between you and third parties or related companies (CUP?)
     - Is there a cost sharing arrangement in force, and if so, what are the details—provide copy of the agreement
     - How important are they to your business and is there evidence of this importance
     - How was it valued?
   - Royalties and license Fees (payments for the use of intellectual property)
     - Do you use marketing brands or technical know-how developed by others?
     - Who receives these royalties?
     - How is the royalty calculated?
     - What technical know-how is paid for?
     - Who receives these fees?
     - How is the technical fee calculated?
   - Trademarks and trade names
     - Is the product sold under any trademark or trade name
     - If so, who owns the trademarks and trade names
     - How significant are they to the business and is there evidence of this significance?
     - How was it valued?
3. **Questions relating to the function of logistics and supply chain management.** (Seeking evidence to demonstrate that the function is 'really' adding value, and if so, what value and hence what is the appropriate markup for the value added. Who should get the higher price?)
   - Rail or road haulage (from mine to port for exports)
     - Who pays for freight charges for the product
     - Who arranges rail/road of product
     - Who hauls the product to where and how
     - Who is responsible for the selection of shipping
     - Who is responsible for the shipping deadlines
     - What are the major risks relating to freight
     - What freight decisions require head office approval
     - What are the approvals required
   - Freight (sea) (may be considered in marketing depending on structure)
     - Who pays for freight charges for the product out
     - Who arranges shipping of product
     - Who ships the product to where and how
     - Who is responsible for the selection of shipping
     - Who is responsible for the shipping deadlines

- What are the major risks relating to freight
- What freight decisions require head office approval
- What are the approvals required

- Inventory (may be considered in marketing depending on structure)
  - Are there stockpiles
  - Where are they
  - Who holds them
  - Who controls the levels
  - How are the inventory levels controlled (computer?)
  - How many days of stock are on hand
  - Is there any excess stock and where
  - What are the major risks relating to stock

4. **Questions relating to the functions of procurement, construction, project management and personnel** (Seeking evidence to demonstrate that the function is 'really' adding value, and if so, what value and hence what is the appropriate markup for the value added. Who should get the higher price?)
   - Procurement
     - Who organizes procurement
     - Are fees paid for procurement
     - Who are the fees paid to
     - What is the basis of the fee
   - Construction
     - Who carries out construction at the mine
     - Are fees paid for construction
     - Who are the fees paid to
     - What is the basis of the fee
   - Project management
     - Are fees paid for project management
     - Who are the fees paid to
     - What is the basis of the fee
   - Personnel
     - Number of personnel
     - Who they work for
     - Where they work
     - Their qualifications
     - Their key performance indicators and basis of remuneration
     - Are any personnel considered high value
     - What is the basis of their remuneration
     - Is any fee paid for the provision of HR services
     - What is the basis of the fee
5. **Questions relating to the functions of Financial Services and Treasury Functions** (Seeking evidence to demonstrate that the function is 'really' adding value, and if so, what value and hence what is the appropriate markup for the value added. Who should get the higher price?)
   - Financing
     - Who organizes long- and short-term financing for the mine
     - Is a payment made for the organizing of this finance
     - What is the basis for the payment
     - What are the conditions of the finance
     - What interest is paid
     - Is hybrid financing used (e.g., redeemable preference shares/convertible notes/deep discount bonds, etc.)
     - Who is the hybrid financing with
     - What is the basis of the payments made in relation to any hybrid financing

- Foreign exchange risk (may be considered in marketing)
  - Are you exposed to foreign exchange risk
  - What steps do you take to minimize foreign risk
- Credit risk (may be considered in marketing)
  - What are the credit risks
  - Who bears the credit risks
  - How significant are the credit risks
- Guarantee fees
  - Are guarantee fees paid
  - Who pays them to whom
  - What is the basis for their payment

Appendix A.5
Differences between EPC and EPCM Contracts

(Reproduced from Plexus Infratech, 2015).

Task/Issue	EPC (Engineering, Procurement and Construction)	EPCM (Engineering, Procurement and Construction Management)
Equipment supply contracts	Negotiated & signed solely between EPC contractor & Supplier.	Negotiated & signed between Owner and Supplier /with EPCM contractor's advice and assistance.
On-site construction contracts	Negotiated & signed solely between EPC contractor & Supplier.	Negotiated & signed between Owner and contractor /with EPCM contractor's advice and assistance.
Supplier selection	Suppliers chosen solely by EPC contractor with no input from Owner.	Suppliers chosen by mutual agreement of Owner and EPCM contractor.
Scope of supply	EPC contract only as good as the original project specifications presented during bidding process. Changes to specifications/ scope of supply after awarding of contract can be expensive, due to EPC contractor's sole contract with Owner and Owner's inability to "Shop Around" for multiple quotations from independent contractors/suppliers.	Owners can modify project specifications with little or no trouble. Owner, with the assistance of the EPCM contractor can negotiate independent contracts with suppliers/vendors at any time due to the fact that project is under multiple (independent) contracts and not one (1) all-encompassing contract.
Equipment supply warranties	Warranties negotiated by Suppliers & EPC contractor and issued to EPC contractor directly. Warranty to Owner from EPC contractor is negotiated separately between Owner and EPC contractor and issued to Owner by EPC contractor.	Warranties negotiated individually with each supplier by Owner with EPCM contractor's advice. Issued directly to Owner from the suppliers and contractors.
Process warranties	Warranties negotiated by Suppliers & EPC contractor and issued to EPC contractor directly. Warranty to Owner from EPC contractor is negotiated separately between Owner and EPC contractor and issued to Owner by EPC contractor (usually in the form of a Performance Bond).	Warranties negotiated individually with each supplier by Owner with EPCM contractor's advice. Issued directly to Owner from the suppliers and contractors (usually in the form of a Performance Bond).
Construction site safety (general liability insurance, workman's compensation, accident, etc.)	Site safety solely the responsibility of the EPC contractor and sub-contractors; in accordance with Contractual Agreements.	Site safety is monitored by EPCM contractor but site safety is the legal responsibility of Owner and sub-contractors; in accordance with Contractual Agreements.

Task/Issue	EPC (Engineering, Procurement and Construction)	EPCM (Engineering, Procurement and Construction Management)
Permitting (Environmental, construction, etc.)	Permitting is the responsibility of the EPC contractor with the exception of permits that are required by law to be issued in the name of the Owner of the project.	Permits are issued to the Owner directly with EPCM contractor assisting in filing the necessary paperwork.
Project budget cost overruns	The cost risks for a project are borne by the EPC contractor. Any cost overruns, for equipment and/or services within the EPC contractor's scope of supply, are for their own account and cannot be passed onto Owner unless "change conditions" occur or contractual agreements to the contrary.	The cost risks for a project are borne by the Owner. Any cost overruns, for equipment and/or services are for the Owner account (with the exception of fixed price supply contracts), i.e., Final equipment pricing bids/on site cost higher than originally budgeted.
Project budget cost savings	The cost risks for a project are borne by the EPC contractor. Any cost savings, for equipment and/or services within the EPC contractor's scope of supply, are for their own account and are not passed onto Owner unless contractual agreements to the contrary.	The cost risks for a project are borne by the Owner. Any cost savings, for equipment and/or services are for the Owner account, i.e., Equipment/Services bids are returned lower than budgeted.
Project day-to-day expenses	The day-to-day expenses for the project, within the EPC contractor's scope of supply are borne by the EPC contractor.	The day-to-day expenses for the project are borne by the Owner but are managed and administered by the EPCM contractor (up to predetermined quantities, without Owner's need for intervention). Usually a small fund is established by Owner for day-to-day expenses.
Project financing	Project financing is usually accomplished by substantial down payment by Owner to EPC contractor and the remainder of the fees issued with Irrevocable Letter of Credit (with partial payments) from Owner to EPC Contractor. *This requires Owner to have all financing in place at the onset of the Project so as to secure letter of credit (LC).*	Project financing can be any combination of down payments, open accounts, and Irrevocable Letters of Credit from Owner to suppliers/contractors; whatever method is negotiated during contract negotiations. EPCM contractor will assist in all negotiations on Owner's behalf. *This allows Owner to have partial financing in place at the onset of the Project with the remainder available as needed, dependent on contractual requirements.*
Legal cost	Legal costs are low for Owner. Owner negotiates only one detailed supply contract with EPC contractor. EPC contractor must negotiate individual contracts with suppliers/vendors. EPC contractor's legal costs are high due to multiple contracts. In the event legal action is taken, Owner must sue EPC contractor, who in turn must bring legal action against appropriate suppliers/contractors *(usually a longer process than EPCM legal actions).*	Legal costs are higher for Owner. Owner negotiates multiple supply contracts directly with suppliers/contractor; with the assistance of EPCM contractor. In the event legal action is taken, Owner must bring legal action against individual suppliers/contractors *(usually a shorter process than EPC legal actions).*
Administration	Owner's administration costs are low with EPC contract. Only minimal staff (management, QC, legal, etc.) needed to administer/monitor project. *May have negative effect on project "ownership" feeling within Owner's organization (hands off).*	Owner's administration costs are higher with EPCM contracts. Substantial staffing levels needed to assist/compliment EPCM contractor in administering/monitoring project. *Promotes "ownership" feeling within Owner's organization. Project staff often transferred to operational staff after project completion.*

Appendix B.1
Transfer Pricing Questionnaire

The following questionnaire was administered to tax officers from 40 mineral-rich jurisdictions primarily located in Sub-Saharan Africa. Of these, 50%, i.e., 20 jurisdictions, submitted completed questionnaires. The countries from which questionnaires were received included:

- Botswana
- Burkina Faso
- Burundi
- Cameroon
- Eritrea
- Ethiopia
- Ghana
- Guinea
- Kenya
- Lesotho
- Madagascar
- Malawi
- Namibia
- Nigeria
- Sierra Leone
- South Africa
- Tanzania
- Uganda
- Zambia
- Zimbabwe

The questionnaire form is reproduced below.

Transfer Pricing Questionnaire			
No.	**Question**	**Y/N**	**Comments**
1.1	Do you consider that the tax base of your country is being eroded by current transfer pricing practices and/or misuse? Is there any evidence and/or quantitative estimates about it?		
2.1	Do the tax law and related regulations and guidelines in your country include specific reference to transfer pricing and requirements for adherence to established principles such as the Arm's Length Principle (ALP) and/or other TP methods as for instance those embodied in the OECD TP Guidelines?		
2.2	Are there any specific provisions for mining companies and related transactions?		
2.3	To what taxes/transactions do the rules apply (corporate income tax, mining royalty, others)?		

(continued)

Transfer Pricing Questionnaire			
No.	**Question**	**Y/N**	**Comments**
2.4	If no, are you intending to introduce this type of legislation? If so, what is planned and when?		
3.1	Is your country a signatory of any tax treaty?		
3.2	If so, please list comprehensive tax treaties that your country is signatory to, and specify whether they are in force, or pending ratification.		
4.1	Does your legislation require that mining development and operations be carried out by specific companies registered in the		
5.1	Are you aware of mining companies in your country that transfer mineral products to related entities for further downstream processing?		
5.2	If yes, please list the relevant mines, the annual value and destination of the mineral transferred.		
5.3	If yes, are there procedures in place to check whether the related transfer prices are in line with those attained in contestable markets for the same products (i.e., in line with ALP)?		
6.1	How significant are the marketing and/or hedging services provided by related parties? Please provide significant examples.		
6.2	If so, how are the related fees and charges checked for adherence with ALP?		
7.1	How significant is the borrowing by mining companies from related entities in your country? Please provide the relevant amounts and the countries from which the funds were sourced.		
7.2	If so, are there withholding taxes on such payments to non-residents?		
7.3	If yes, what rules (e.g., D:E ratio) are in place to deal with the issue of “thin capitalisation”?		
7.4	If yes, are the relevant interest rates and other borrowing fees charged checked for adherence to the ALP, and if so how?		
8.1	How extensive is the use made by mining companies in your country of routine corporate services provided by related entities?		
8.2	Are there withholding taxes on such payments to non-residents?		
8.3	If yes, are the related transfer prices checked for adherence to ALP, and if so how?		
9.1	How extensive is the use made by mining companies in your country of non-routine services and assets provided by related entities involving proprietary technologies that require the issuing of licences or royalties or transfer of IP?		
9.2	Are there withholding taxes on such payments to non-residents?		
9.3	If yes, are there established procedures to check the adherence to ALP of these charges, and if so how?		
10.1	Do you have access to relevant transactional databases?		
10.2	If so, which?		
11.1	Are transfer pricing issues and potential approaches discussed and agreed to with mining developers/operators ahead of the establishment of operations?		

Transfer Pricing Questionnaire			
No.	**Question**	**Y/N**	**Comments**
11.2	If so, what type of issues are being addressed and what approaches/ arrangements are being used?		
11.3	Are the agreed arrangements clearly documented?		
12.1	How many audits involving transfer pricing do you carry out each year?		
12.2	If so, how do you select and prioritise companies to be audited? Is any form of RBA used for identifying TP risks, etc.?		
12.3	Has the general outcome of such verifications/audits been an increase in revenue? What percentage of audits resulted in increased collections and by how much per annum or per audit?		
12.4	If so, was the effort cost justified?		
13.1	Are companies required to hold comtemporaneous TP information? And if so over what prescribed period?		
13.2	Have you experienced difficulty in viewing relevant TP documentation during audits?		
13.3	Do you have the power to reconstruct transactions if and when TP documentation provided during an audit is inappropriate or inadequate to support a company's return?		
14.1	Has any audit resulted in an objection or appeal?		
14.2	If so, how was it resolved? Was there a negotiated settlement?		
14.3	Did any objection escalate into legal dispute?		
14.4	If so, how complex were the proceedings and what was the outcome?		
15.1	Does your organisation have a section dedicated to transfer pricing?		
15.2	If so, how many officers (FTE equivalent) does it employ?		
15.3	If no, are there any specific officers (FTE equivalent) with specialised transfer pricing skills and duties?		
15.4	If yes, please provide their contact details.		

Appendix B.2
Database of Current African Mines

Database of Current African Mines—Coal

Country	Coal (Mtpa)	Coal (tpd)	Mining Method	Name
Producing Mines				
Botswana	3.2	8889	OC/UG	Morupule Colliery
Malawi	0.06	167	UG	Mchenga
Malawi	0.009	25	OC/UG	Nkhachira
Mozambique	1.6	4444	OC	Benga-Tete
Mozambique	10	27778	OC	Chirodzi
Mozambique	0.05	139	OC/UG	Minas Moatize
Mozambique	1.969	5469	OC	Moatize
Niger	0.18	500	OC	Anour
South Africa		0	OC	Intibane
South Africa		0	OC	Kopermyne North Colliery
South Africa	0.559	1553	OC	Ferreira
South Africa	1.03	2861	OC	Somkhele
South Africa	1.5	4167	OC	Kiepersol
South Africa	1.526	4239	OC	Vlakvarkfontein
South Africa	1.804	5011	OC	Mafube
South Africa	1.87	5194	OC	Black Wattle
South Africa	1.922	5339	OC	Woestalleen
South Africa	1.936	5378	OC	Inyanda
South Africa	2.39	6639	OC	Vanggatfontein
South Africa	3.01	8361	OC	North Block Complex
South Africa	3.488	9689	OC	Leeuwpan
South Africa	3.766	10461	OC	Kleinkopje
South Africa	4.272	11867	OC	Landau

Country	Coal (Mtpa)	Coal (tpd)	Mining Method	Name
South Africa	5.399	14997	OC	Isibonelo
South Africa	8.226	22850	OC	Klipspruit
South Africa	15.088	41911	OC	Grootegeluk
South Africa	17.623	48953	OC	New Vaal
South Africa		0	OC/UG	Elitheni
South Africa		0	OC/UG	Impunzi
South Africa		0	OC/UG	Southstock
South Africa	1.262	3506	OC/UG	Magdalena
South Africa	1.31	3639	OC/UG	Khanyisa
South Africa	2.081	5781	OC/UG	Arnot
South Africa	4.5	12500	OC/UG	Tweefontein
South Africa	4.86	13500	OC/UG	Goedehoop
South Africa	5.026	13961	OC/UG	Zibulo
South Africa	7.034	19539	OC/UG	Umcebo Coal
South Africa	7.541	20947	OC/UG	Shanduka Coal
South Africa	8.16	22667	OC/UG	Goedgevonden
South Africa	10.615	29486	OC/UG	Khutala
South Africa	14.108	39189	OC/UG	Optimum Collieries
South Africa	16.298	45272	OC/UG	Wolvekrans-Middelburg
South Africa	31.627	87853	OC/UG	Energy Coal South Africa
South Africa	0.246	683	UG	Penumbra
South Africa	0.358	994	UG	Tshikondeni
South Africa	0.526	461	UG	Aviemore
South Africa	0.55	1528	UG	Vaalkrantz
South Africa	0.717	1992	UG	New Clydesdale
South Africa	1.7	4722	UG	Sigma-Mooikraal
South Africa	2.883	8008	UG	Greenside
South Africa	3.401	9447	UG	New Denmark
South Africa	8.097	22492	UG	Kriel
South Africa	9.61	26694	UG	Matla
South Africa	38.4	106667	UG	Secunda
South Africa		0		Carolina
South Africa		0		Koornfontein

(continued)

Country	Coal (Mtpa)	Coal (tpd)	Mining Method	Name
South Africa		0		Savmore
South Africa	1.2	3333		Kwasa
South Africa	1.5	4167		Vlakfontein
Tanzania		0		Ngaka-Muhukuru
Zambia		0		Maamba
Zimbabwe	1	2778	OC	Entuba
Zimbabwe	3.337	9269	OC/UG	Hwange
Advanced Study Stage				
Botswana	10	27778		Mmamantswe
Botswana	5	13889		Morupule
Botswana		0		Sechaba
Botswana	4	11111		Sese
Botswana		0		Takatokwane
Madagascar		0	OC	Imaloto
Madagascar		0		Sakoa
Mozambique	20	55556		Cahora Bassa-Estima
Mozambique	1.2	3333		Ncondezi
Mozambique		0		Zambeze
South Africa	10	27778	OC	Berenice-Cygnus
South Africa	40	111111		Boikarabelo
South Africa	1.1	3056	OC/UG	Braakfontein
South Africa		0		Brakfontein
South Africa	3	8333	OC	Canyon Springs
South Africa	4	11111	OC	De Wittekrans
South Africa	12.8	35556	OC/UG	Elders
South Africa		0		Gauteng
South Africa		0		Greater Soutpansberg
South Africa	1.8	5000	UG	Hlobane
South Africa		0		Holfontein
South Africa	2.4	6667	OC	Kangala
South Africa	1.2	3333	OC/UG	Kangwane
South Africa		0		Leiden
South Africa		0		Limpopo West

Country	Coal (Mtpa)	Coal (tpd)	Mining Method	Name
South Africa	12.6	35000	OC	Makhado
South Africa		0		Moabsvelden
South Africa	11	30556	OC/UG	New Largo
South Africa	4	11111		Ntendeka Colliery
South Africa		0		Project X
South Africa	2.6	7222	OC	Rietkuil
South Africa		0		Roodekop
South Africa		0		Sterkfontein
South Africa		0		Vele
South Africa	7	19444	OC	Waterberg
Tanzania		0		Rukwa
Zimbabwe		0		Gwayi
Zimbabwe		0		Sengwa

Database of Current African Mines—Copper

Country	Cu (Mtpa)	Cu (tpd)	Mining Method	Name
Producing Mines				
Botswana	0.24	667	OC	Boseto
Botswana	0.75	2,075	OC/UG	Mowana
DRC	0.84	2,333	OC	Ruashi
DRC	0.92	2,567	OC	Kinsevere
DRC	1.01	2,806	OC	Kipoi
DRC	3.91	10,861	OC	Luita
DRC	4.31	11,972	OC	Mutanda
DRC	7.32	20,333	OC	Tenke Fungurume
DRC	28.90	80,278	OC	Comide
DRC	5.48	15,222	OC/UG	Kamoto Complex
Eritrea	1.78	4944	OC	Bisha
Mauritania	2.84	7,889	OC	Guelb Moghrein
Morocco		0	UG	Hajjar-Draa Sfar
Morocco		0	OC	Jbal Laassal
Namibia	0.30	833	UG	Central Operations
South Africa	19.70	54,722	UG	Palabora

(continued)

Country	Cu (Mtpa)	Cu (tpd)	Mining Method	Name
Zambia	21.38	59,389	OC	Lumwana
Zambia	25.30	70,278	OC	Kansanshi
Zambia	0.60	1,667	UG	Chibuluma
Zambia	1.05	2,917	UG	Lubambe
Zambia	2.00	5,556	UG	Luanshya-Baluba
Zambia	2.40	6,667	UG	Chambishi
Zambia		0		Muliashi
Zambia		0	OC/UG	Nchanga
Zambia	8.99	24,972	UG	Konkola
Zambia	11.20	31,111	UG	Mopani
Advanced Study Stage				
Angola		0		Mavoio
Botswana	3.60	10,000	OC	Ghanzi
Botswana		0		Magogaphate-Takane
Botswana		0		Mokoswane
DRC		0	Tailings	Dikulushi
DRC		0	OC	Etoile
DRC	2.17	6,028	OC	Frontier
DRC	2.85	7,917	Tailings	Kakanda
DRC	1.25	3,472		Kalukundi
DRC		0	OC/UG	Kamfundwa-Kolwezi-Kipushi
DRC	5.00	13,889		Kamoa
DRC	0.60	1,667		Kapulo
DRC		0		Kinsenda
DRC		0		Lupoto
DRC		0		Mokambo
DRC		0	OC	Musonoi
DRC		0		Pumpi
DRC		0		Roan
DRC		0		Sicomines
Morocco		0		Oumjrane-Bouskour
Namibia		0		Kalahari Copperbelt
Namibia	0.65	1,806		Kuiseb

Country	Cu (Mtpa)	Cu (tpd)	Mining Method	Name
Namibia	6.00	16,667	OC	Omitiomire
Namibia		0		Ongava
Namibia	0.57	1,583		Ongombo
Namibia		0		Steinhausen
Namibia		0		Tsumeb
Tanzania		0		Jindal Tanzania
Zambia		0	Dumps	Chambishi Dumps
Zambia	1.86	5,167	OC	Kangaluwi
Zambia		0	HL	Mkushi
Zambia	3.00	8,333	OC	Mumbwa
Zambia		0		Trident

Database of Current African Mines—Diamonds

Country	Diamond (Mtpa)	Diamond (tpd)	Mining Method	Name
Producing Mines				
Angola	10.00	27,778	OC	Catoca
Angola	6.00	16,667	OC	Luo
Angola		0		Luxinge
Angola		0	Alluvial	Somiluana
Botswana	1.39	3,861	OC	Damtshaa
Botswana	9.00	25,000	OC	Jwaneng
Botswana	2.18	6,056	OC	Karowe
Botswana	2.22	6,167	OC	Letlhakane
Botswana	12.25	34,028	OC	Orapa
Cameroon		0	Dredging	Mobilong
DRC		0	Alluvial	Sengamines
DRC		0	Alluvial	Tshikapa
Lesotho	1.13	3139	OC	Kao
Lesotho	6.00	16,667	OC	Letsang
Lesotho	0.62	1,731	OC	Liqhobong
Namibia		0	Dredging	Atlantic 1
Namibia	1.67	4,639	OC	Northern Coastal
Namibia	4.18	11,611	OC	Orange River

(continued)

Country	Diamond (Mtpa)	Diamond (tpd)	Mining Method	Name
Namibia		0		Pomona 29
Namibia	6.96	19,333	Dredging	Southern Coastal
Sierra Leone	0.30	833	OC/UG	Koidu
South Africa	1.36	3,778	Screening	Alexkor
South Africa		0	Tailings	Baken
South Africa	4.08	11,333	UG	Cullinan
South Africa		0		Elandslaagte
South Africa	5.21	14,472	UG	Finsch
South Africa		0	UG	Fissure
South Africa	5.28	14,667	Tailings	Kimberley
South Africa	0.81	2,236	UG	Kimberley Underground
South Africa		0		Klipdam
South Africa	0.51	1,417	Tailings	Kmf
South Africa	1.48	4,111	UG	Koffiefontein
South Africa	1.20	3,333	Tailings	Lace
South Africa		0	Dredging	Marine
South Africa		0	Alluvial	Middle Orange River
South Africa	3.42	9,500	Alluvial	North West Province
South Africa		0	OC	Richtersveld
South Africa	5.62	15,611	OC	Venetia
South Africa	2.80	7,778	OC	Voorspoed
Tanzania	3.12	8,667	OC	Williamson
Zimbabwe	0.20	556	OC	Murowa
Advanced Study Stage				
Botswana	0.60	1,667	UG	Ghaghoo
Botswana		0		Kalahari
Guinea		0		Bomboko
Guinea		0	OC	Droujba
Lesotho		0		Motete Dyke
Lesotho		0		Mothae
Sierra Leone		0		Baimbawai
Sierra Leone		0		Tonguma
South Africa		0		Kareevlei

Country	Diamond (Mtpa)	Diamond (tpd)	Mining Method	Name
South Africa		0		Krone-Endora
South Africa	0.05	139	OC	Monastery
South Africa		0		Tirisano
South Africa		0		Wouterspan
Swaziland		0		Dvokolwako

Database of Current African Mines—Gold

Country	Gold (Mtpa)	Gold (tpd)	Mining Method	Name
Producing Mines				
Algeria		0	OC	Amesmessa
Bostwana	1.08	3000	OC	Mupane
Burkina Faso	3.31	9194	OC	Bissa
Burkina Faso	10.68	29667	OC	Essakane
Burkina Faso	2.56	7111	OC	Inata
Burkina Faso	2.84	7889	OC	Mana
Burkina Faso		0	OC	Sega
Burkina Faso	1.43	3972	OC	Taparko-Bouroum
Burkina Faso	1	2778	OC	Youga
Côte d'Ivoire	1.6	4444	OC	Agbaou
Côte d'Ivoire	1.92	5333	OC	Bonikro
Côte d'Ivoire	0.5	1389	HL	Ity
Côte d'Ivoire	3.72	10333	OC	Tongon
Democratic Republic of Congo	4.17	11583	OC	Kibali
Democratic Republic of Congo	2.19	6083	OC	Namoya
Democratic Republic of Congo	0.95	2639	OC	Twangiza
Egypt	5	13889	OC/UG	Sukari
Ethiopia	1.5	4167	UG	Lega Dembi
Ethiopia		0		Sakaro
Gabon		0	OC	Bakoudou
Ghana	8.34	23167	OC	Ahafo
Ghana	7.11	19750	OC	Akyem

(continued)

Country	Gold (Mtpa)	Gold (tpd)	Mining Method	Name
Ghana	3.34	9278	OC	Bogoso-Prestea
Ghana	3.34	9278	OC	Chirano
Ghana	4.42	12278	OC	Damang
Ghana		0	Alluvial	Dunkwa
Ghana	5.65	15694	OC	Edikan
Ghana	4	11111	OC	Iduapriem
Ghana	2.04	5667	OC	Nzema
Ghana	2.1	5833	OC/UG	Obuasi
Ghana	18.72	52000	OC	Tarkwa
Ghana	2.62	7278	OC	Wassa-HBB
Guinea	5.92	16444	OC	Lefa
Guinea	9	25000	OC	Siguiri
Mali		0	Alluvial	Bagoe River
Mali	1.92	5333	OC	Gounkoto
Mali	0.051	142	UG	Kalana
Mali	0.79	2194	OC	Kodieran
Mali	2.58	7167	OC/UG	Loulo
Mali	4.3	11944	Tailings	Morila
Mali	4.6	12778	OC	Sadiola
Mali	1.16	3222	OC/UG	Segala-Tabakoto
Mali	2.01	5583	OC	Syama
Mali	2.7	7500	OC	Yatela
Mauritania	18.56	51556	OC	Tasiast
Morocco	0.72	2000	OC	Akka
Morocco		0		Tighza
Namibia	1.4	3889	OC	Navachab
Senegal	2.82	7833	OC	Sabodala
South Africa	2.4	6667	UG	Agnes
South Africa	0.164	456	UG	Bambanani
South Africa	0.31	861	OC/UG	Barberton
South Africa	3.82	10611	UG	Beatrix
South Africa		0	Tailings	Bosveld
South Africa	0.318	883	OC/UG	Central Rand

Country	Gold (Mtpa)	Gold (tpd)	Mining Method	Name
South Africa	0.095	264	UG	Consolidated Murchison
South Africa	1.09	3028	OC/UG	Cooke
South Africa	1.01	2806	UG	Doornkop
South Africa	23.25	64583	Tailings	Ergo
South Africa	0.6	1667	OC/UG	Evander
South Africa	0.5	1389	UG	Great Noligwa
South Africa	0.611	1697	UG	Joel
South Africa	1.4	3889	OC	Kalgold
South Africa	9.06	25167	OC/UG	KDC
South Africa	0.9	2500	UG	Kopanang
South Africa	0.711	1975	UG	Kusasalethu
South Africa	0.349	969	UG	Lily
South Africa	0.868	2411	UG	Masimong
South Africa	0.6	1667	UG	Moab Khotsong
South Africa	0.591	1642	UG	Modder East
South Africa	1.3	3611	UG	Mponeng
South Africa	0.512	1422	UG	Phakisa
South Africa	5.36	14889	Tailings	Phoenix
South Africa	2.32	6444	OC/UG	South Deep
South Africa		0	Tailings	Surface Operations
South Africa	0.717	1992	OC/UG	Target
South Africa	0.67	1861	UG	Tau Lekoa
South Africa	0.8	2222	UG	Tautona
South Africa		0	UG	TGME
South Africa	1.04	2889	UG	Tshepong
South Africa	0.446	1239	UG	Virginia
South Africa	1.4	3889	OC	West Rand
Sudan		0	OC	Hassai
Tanzania	0.828	2300	UG	Bulyanhulu
Tanzania	4.58	12722	OC	Buzwagi
Tanzania	4.8	13333	OC	Geita
Tanzania	2.6	7222	OC	Golden Pride
Tanzania	0.32	889	OC	New Luika

(continued)

Country	Gold (Mtpa)	Gold (tpd)	Mining Method	Name
Tanzania	2.56	7111	OC	North Mara
Zimbabwe	0.3	833	OC/UG	Arcturus
Zimbabwe	0.385	1069	UG	Blanket
Zimbabwe		0	OC	Camperdown
Zimbabwe	0.288	800	UG	Eureka
Zimbabwe	1.01	2806	UG	Freda Rebecca
Zimbabwe	0.48	1333	UG	Golden Quarry
Zimbabwe		0	UG	How
Zimbabwe	0.3	833	OC	Mazowe
Zimbabwe	0.045	125	UG	Old Nic
Zimbabwe		0	OC/UG	Redwing
Zimbabwe	0.342	950	UG	Renco
Zimbabwe		0	UG	Shamva
Zimbabwe	0.18	500	UG	Turk-Angelus
Advanced Study Stage				
Burkina Faso		0		Balogo
Burkina Faso	3.5	9722		Banfora
Burkina Faso		0		Batie West
Burkina Faso		0		Bissa Regional
Burkina Faso	8	22222		Bombore
Burkina Faso		0		Hounde
Burkina Faso	3	8333	OC/HL	Karma
Burkina Faso		0		Tanlouka
Burkina Faso		0		Tapoa
Burkina Faso		0		Yactibo
Burkina Faso		0		Yaramoko
Cameroon		0		Kette
Central African Republic		0		Passendro
Côte d'Ivoire		0		Afema
Côte d'Ivoire		0		Tengrela
Côte d'Ivoire		0		Yaoure
Democratic Republic of Congo		0		Lugushwa

Country	Gold (Mtpa)	Gold (tpd)	Mining Method	Name
Democratic Republic of Congo		0		Mongbwalu
Democratic Republic of Congo		0		Ngayu
Democratic Republic of Congo		0		Zani-Kodo
Egypt		0		El Fawakhir
Egypt		0		Umm Balad
Eritrea	4	11111	OC	Asmara
Eritrea		0		Zara
Ethiopia		0		Okote
Ethiopia	2	5556	OC/UG	Tulu Kapi
Gabon		0		Eteke
Ghana		0		Akoko
Ghana	4	11111		Esaase
Ghana		0		Konongo
Ghana		0		Kubi
Ghana	3	8333		Obotan
Ghana		0		Sian
Ghana		0		Wa-Lawra
Guinea		0		Kouroussa
Guinea		0		Mansounia
Guinea	1.2	3333		Tri-K
Kenya		0		Migori
Liberia	3.5	9722		Dugbe
Liberia	0.4	1111		Kokoya
Liberia	1.03	2861		New Liberty
Mali		0	OC	Finkolo
Mali		0	OC	Kamasso-Mininko
Mali		0		Keikoro
Mali		0		Kobada
Mali	4	11111	OC	Medinandi
Mali		0		Yanfolila
Mozambique		0		Manica
Mozambique		0		Mundonguara

(continued)

Country	Gold (Mtpa)	Gold (tpd)	Mining Method	Name
Namibia		0		Otjikoto
Nigeria		0	OC	Segilola
Senegal	0.5	1389	OC	Faleme
Senegal		0		Mako
Senegal		0		Massawa
Senegal	2	5556	HL	Sabodala
Sierra Leone		0	OC	Baomahun
Sierra Leone		0		Nimini Hills
South Africa	0.15	417	UG	Albion
South Africa		0		Barbrook
South Africa		0		Crown East—CMR Bird Reef
South Africa		0		East Rand Boundary Project
South Africa	1.27	3528	UG	Evander Regional
South Africa	1.7	4722		Jeanette
South Africa		0	UG	Megamine
South Africa		0		Modder North
South Africa		0	UG	Poplar
South Africa		0		Rand-DRD
South Africa		0		Salt River
South Africa		0		Southern Free State
South Africa		0		Ventersburg
Sudan		0		Block 15
Tanzania		0	OC	Buckreef
Tanzania		0		Handeni
Tanzania		0	OC/UG	Itetemia
Tanzania		0		Kigosi
Tanzania		0		Miyabi
Tanzania		0		Nyakafuru
Tanzania		0		Nyanzaga
Tanzania		0		Singida
Zambia		0		Luiri Hill
Zimbabwe		0		Cam
Zimbabwe		0	OC	Pickstone Peerless

Database of Current African Mines—Iron Ore

Country	Iron Ore (Mtpa)	Iron Ore (tpd)	Name
Producing Mines			
Algeria	1.44	4000	Tebessa
Egypt	3	8333	El-Gedida
Guinea	1	2778	Forecariah
Liberia	4.5	12500	Western Range
Liberia	4.5	12500	Bong
Mali		0	Tienfala
Mauritania	10	27778	Rhein
Mauritania	0	0	Idjill Kedia
Mauritania	6	16667	M'haoudat
Morocco	1.5	4167	Iron Queen
Sierra Leone	9	25000	Marampa—Tailings
Sierra Leone	20	55556	Tonkolili
South Africa	0.632	1756	Thabazimbi Mine
South Africa	2.216	6156	Mapochs
South Africa	7	19444	Beeshoek
South Africa	10	27778	Kolomela Mine
South Africa	16.07	44639	Khumani
South Africa	30.05	83472	Sishen Mine
Swaziland	3.4	9444	Ngwenya
Tunisia	0.25	694	Djerissa
Advanced Study Stage			
Algeria	30	83333	Gara Djebilet
Angola	15	41667	Cassala-Quitungo
Angola		0	Cassinga
Cameroon	35	97222	Mbalam-Nabeba
Cameroon		0	Nkout
Cameroon		0	Ntem
Côte d'Ivoire	20	55556	Bonglo
Guinea	25.9	71944	Kalia
Guinea		0	Nimba
Guinea	120	333333	Simandou

(continued)

Country	Iron Ore (Mtpa)	Iron Ore (tpd)	Name
Liberia		0	Bomi South
Liberia	1.2	3333	Buchanan-Gbarnga-Kalasi
Liberia		0	Mofe Creek
Liberia		0	Putu
Mali		0	Iron Hill—VIII
Mauritania	4	11111	Askaf
Mauritania	15	41667	Guelb El Aouj
Mauritania		0	Lebtheinia
Mauritania		0	S'fariat-Tamagot
Mozambique	3	8333	Tete
Namibia	2	5556	Shiyela
Nigeria		0	Agbaja
Republic of Congo	20	55556	Avima
Republic of Congo	10	27778	Mayoko
Republic of Congo	2	5556	Mayoko-Moussondji
Republic of Congo	30	83333	Zanaga
Sierra Leone	15	41667	Marampa
South Africa		0	Bushveld
South Africa		0	Cascades
South Africa		0	Kongoni
South Africa		0	Limpopo-Northwest
South Africa	3	8333	Malelane
South Africa		0	Moonlight
South Africa	2.4	6667	Northern Limb
South Africa	4	11111	Thabazimbi
South Africa	0.75	2083	Veremo
South Africa	6	16667	Zandrivierspoort

Database of Current African Mines—Nickel

Country	Ni (Mtpa)	Ni (tpd)	Mining Method	Name
Producing Mines				
Bostwana	2.80	7,778	UG	Selebi-Phikwe
Bostwana	6.43	17,861	OC	Tati
Madagascar	5.90	16,389	OC	Ambatovy
South Africa	7.59	21,083	OC/UG	Nkomati
Zimbabwe	1.10	3,056	UG	Trojan
Advanced Study Stage				
Burundi	2.00	5,556		Musongati
Cameroon		0		Nkamouna
Côte d'Ivoire		0		Samapleu
Mozambique		0		Murite-Xixano
Tanzania	1.53	4,250	UG	Kabanga
Tanzania	1.98	5,500	OC	Nachingwea
Zambia		0		Dutwa-Zanzui

Database of Current African Mines—Platinum

Country	PGE (Mtpa)	PGE (tpd)	Mining Method	Name
Producing Mines				
South Africa	4.9	13611	OC/UG	Amandelbult
South Africa	2.38	6611	UG	Bafokeng-Rasimone
South Africa	1.33	3694	UG	Bokoni
South Africa	3	8333	UG	Elandsfontein
South Africa	10.9	30278	OC	Impala
South Africa	6.59	18306	UG	Kroondal
South Africa	11	30556	OC/UG	Marikana
South Africa	1.6	4444	OC/UG	Marula
South Africa	2.33	6472	UG	Modikwa
South Africa	10.82	30056	OC	Mogalakwena
South Africa	1.23	3417	UG	Mototolo
South Africa	0.552	1533	UG	Pandora
South Africa	0.27	750	Tailings	Phoenix
South Africa	3.28	9111	OC	Pilanesberg

(continued)

Country	PGE (Mtpa)	PGE (tpd)	Mining Method	Name
South Africa	9.8	27222	UG	Rustenburg
South Africa	3.2	8889	UG	Two Rivers
South Africa	4.12	11444	UG	Union Mine
South Africa	2.12	5889	UG	Zondereinde
South Africa	1.29	3583	UG	Booysendal
South Africa		0	Tailings	Sylvania Dump Operations
Zimbabwe	1.52	4222	UG	Unki
Zimbabwe	2.41	6694	UG	Mimosa
Zimbabwe	4.68	13000	UG	Ngezi-SMC
Advanced Study Stage				
South Africa		0		Akanani
South Africa	2.76	7667	UG	Bakubung
South Africa		0		Bauba
South Africa		0		Boikgantsho
South Africa	1.14	3167		Der Brochen
South Africa		0		Everest North
South Africa		0		Ga Phasha
South Africa	3.6	10000		Garatau
South Africa		0		Grootboom
South Africa	3	8333	UG	Leeuwkop
South Africa	0.3	833	UG	Lesego
South Africa		0	UG	Limpopo Operations
South Africa		0		Mphahlele
South Africa	12	33333		Platreef
South Africa	1.36	3778		Rooderand
South Africa	18	50000		Sheba's Ridge
South Africa		0		Tjate
South Africa		0		Tubatse
South Africa	3	8333	UG	Twickenham
South Africa		0		Volspruit
South Africa	1.53	4250	UG	Western Bushveld
Zimbabwe	3.6	10000		Bokai

Database of Current African Mines—Potash

Country	Potash (Mtpa)	Potash (tpd)	Mining Method	Name
Advanced Study Stage				
Eritrea		0		Colluli
Ethiopia	1.00	2,778	Solution	Dallol—Allana
Ethiopia	1.00	2,778		Dallol—Yarra
Republic of Congo	1.20	3,333		Mengo
Republic of Congo	2.00	5,556		Sintoukola

Database of Current African Mines—Rare Earths

Country	RE (Mtpa)	RE (tpd)	Mining Method	Name
Advanced Study Stage				
South Africa		0		Steenkampskraal
South Africa		0		Zandkopsdrift
Tanzania		0		Ngualla
Tanzania		0		Wigu Hill

Database of Current African Mines—Uranium

Country	U (Mlbpa)	U (lbpd)	Mining Method	Name
Producing Mines				
Malawi	2.96	8,231	OC	Kayelekera
Namibia	5.29	14,694	OC	Langer Heinrich
Namibia	5.95	16,528	OC	Rossing
Niger	6.61	18,361	OC	Arlit
Niger	0.66	1,833	OC/UG	Azelik
Niger	3.32	9,222	UG	Cominak
South Africa		0	OC	Dominion
Advanced Study Stage				
Botswana	3.00	8,333	OC	Letlhakane
Guinea		0		Firawa-Bohoduo
Mali		0		Falea
Mauritania		0		Reguibat
Namibia	6.00	16,667	OC	Etango
Namibia		0		Husab

(continued)

Country	U (Mlbpa)	U (lbpd)	Mining Method	Name
Namibia	4.20	11,667	OC	Norasa
Namibia		0		Omahola
Namibia		0	OC	Trekkopje
Niger	11.00	30,556		Imouraren
Niger		0		Madaouela
South Africa		0		Karoo
South Africa		0		Mooifontein
South Africa		0		Springbok Flats
Tanzania		0		Manyoni
Tanzania	2.50	6,944		Mkuju River
Zambia	1.30	3,611	OC	Chirundu
Zambia		0		Mutanga

Appendix B.3

Characterisation and Revenue/Cost Structure of African Mining Operations for the Main Mineral Commodities

B.3.1 Precious Metals

Precious metals are an important part of the mining landscape in Africa. Early mining in Africa had been dominated first by gold mining from South Africa's extraordinary Witwatersrand gold deposits, and second by platinum in the Bushveld Complex. Gold in Southern and West Africa and Platinum Group Minerals (PGM) mostly in Southern Africa account for almost half of the operating and exploration projects in the continent, including projects that have reached the advanced study stage. As a result, extraction of these commodities contributes substantially to government revenues from mining across the continent, justifying the direction of auditing resources to these sectors. Considering the size of the deposits and the scale of the investment required, gold and platinum mining are attractive to large multinational companies. This combination, along with a strong international demand, creates risk for BEPS through transfer mispricing.

The issue of transfer pricing has been brought into focus in South Africa as it is alleged that it may affect the capacity of certain mines to comply with the Mining Charter[173] for the transformation of the mining sector. This has been particularly the case for platinum group metals (PGMs) producers following revelations during the Marikana Commission hearings, where, while discussing the sales of PGMs through a Bermuda-based marketing subsidiary, a high ranking officer of one of the companies is reported to have stated that 'A structure like this is normally set up to be optimal from a tax perspective'.[174] The result of a more in-depth review of the marketing structure of a PGMs producer conducted by the South African Mining Development Association (SAMDA) as reported in its 2014 'Submission to the Portfolio Committee on Trade and Industry re: Transfer Pricing and Transformation within the Mining Industry' and already discussed in more detail in Part B, claimed that the shifting of profits due to such practices are affecting and delaying the pace of black economic empowerment (BEE) and the Junior Mining Initiative in South Africa.

[173]The South African Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) aims, as one of its fundamental principles, to empower Historically Disadvantaged South Africans (HDSAs) who were affected by Apartheid policies. The combination of Charter and Scorecard provides for the empowerment of HDSAs to be meaningful, allowing those who meet the definition to benefit from the mineral and petroleum industries.

[174]The Bermuda connection—The story to emerge from cross examination during the Marikana Commission hearings—info@aidc.org.za.

B.3.1.1 Gold

Industry profile: World production and resources

The gold industry is very fragmented.[175] This is in contrast to other segments of the mining industry in which a few large companies dominate production. As can be seen in Figure D.2, gold has historically been found in various quantities around the globe, in deposits that are typically smaller than those of other minerals due to its relative scarcity. Coupled with relatively low market entry barriers, the global gold industry is characterized by many small and intensely competitive firms.

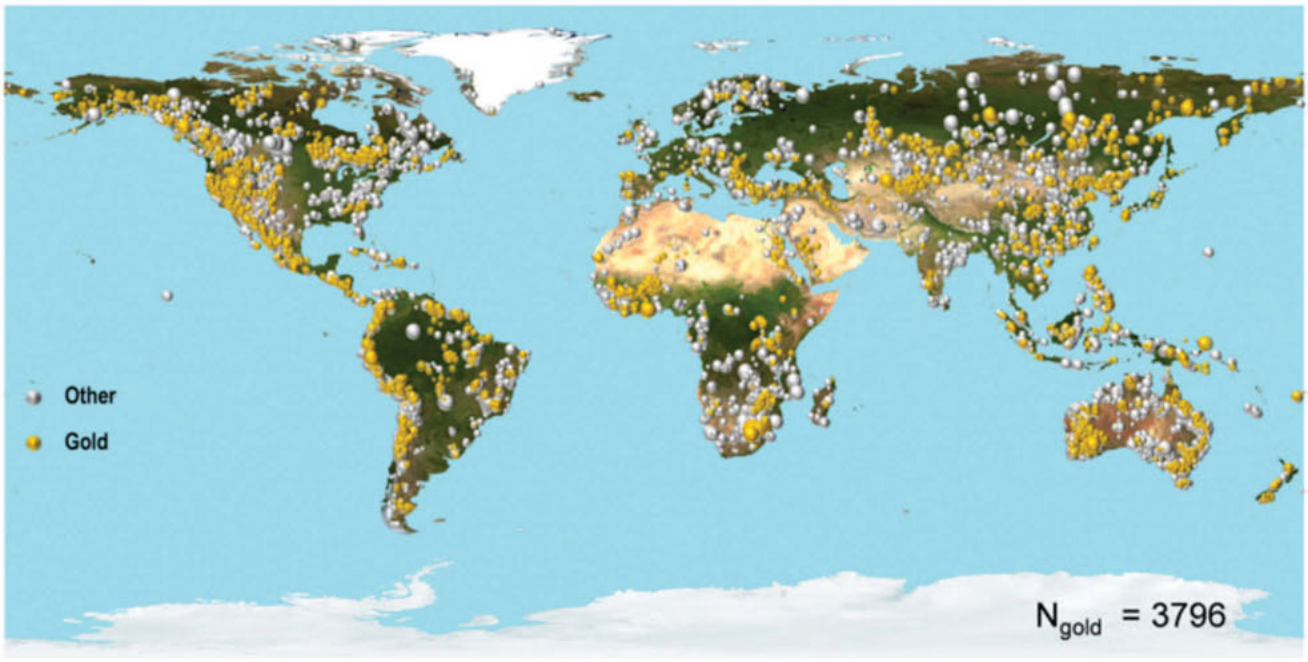
In 2012, world production of gold was calculated to be 2,690 tonnes.[176] In 2013, total production reached 2,982 tonnes,[177] and world gold reserves in 2014 were estimated to be 55,000 tonnes.[178] This increase in production was mainly due to growing supply coming from China (Table D.1).

When looking at the future of the global gold sector, it is expected that Africa will remain a major player and grow from current levels of around 20% of global production. As depicted in Figure D.3, since the year 2000 a greater proportion of the total gold deposits and promising projects identified have been on the African continent, which bodes well in terms of increasing levels of future activity.

Current African producers: Production size and geographical distribution

The gold industry represents a significant proportion of mining activities taking place on the African continent. As Table D.2 shows, of the 286 current mining operations, 101 are producing gold.

Figure D.2: Significant deposits (gold, base metals, other)—discovered all years



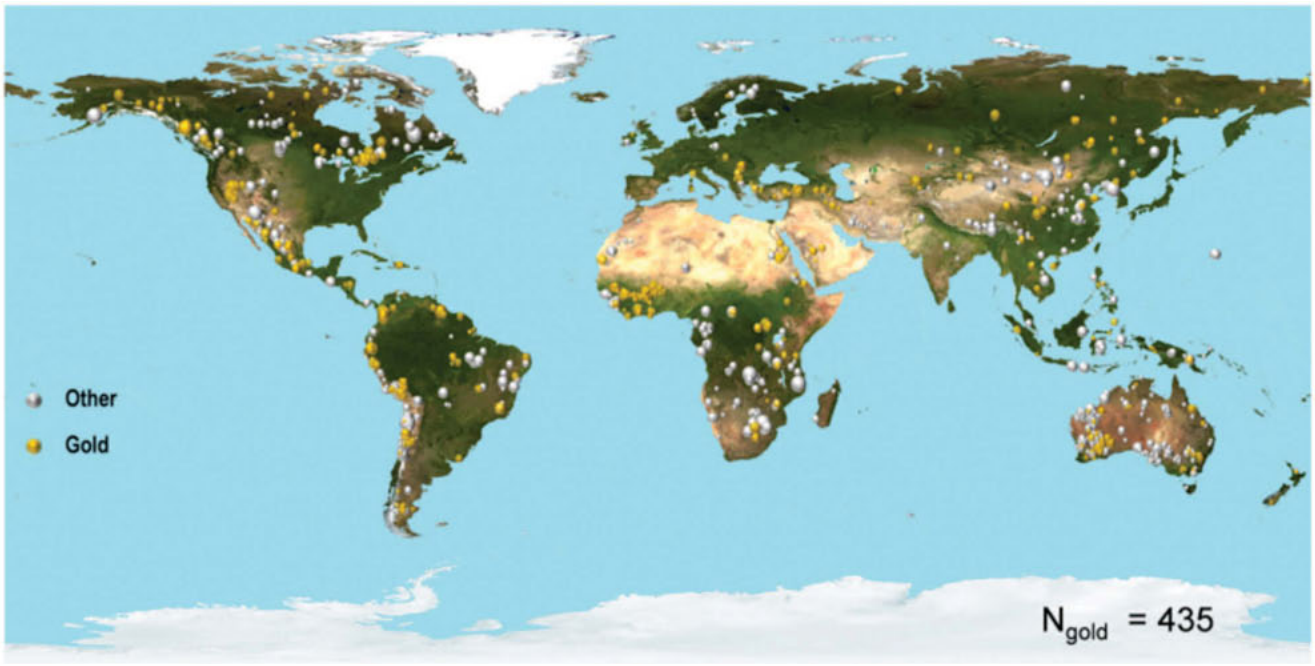
Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

[175]http://www.bloomberg.com/markets/companies/gold-mining/
[176]http://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs-2014-gold.pdf
[177]http://www.mining.com/global-gold-silver-production-to-hit-fresh-records-this-year-66566/
[178]http://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs2015.pdf

Table D.1: Top 10 gold producing countries 2013, with 2009 figures for comparison

Country	2013 (metric tonnes)	2009 (metric tonnes)
China	370	320
Australia	250	222
USA	230	223
Russia	205	191
South Africa	170	198
Peru	165	182
Canada	102	97
Indonesia	95	130
Uzbekistan	90	90
Ghana	89	86

Figure D.3: Significant gold deposits—discovered since 2000



Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

Table D.2: Mining activities in Africa by commodity. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

Commodity	Producing	Scoping/feasibility study	Exploration	Total
Coal	63	38	46	147
Copper	26	29	79	134
Diamonds	41	14	39	94
Gold	101	82	397	580
Iron Ore	20	37	57	114
Nickel	5	7	17	29
Platinum	23	22	31	76
Potash	0	5	5	10
Rare Earths	0	4	20	24
Uranium	7	18	60	85
Total	**286**	**256**	**751**	**1293**

Furthermore, as far as exploration is concerned, more than half of the exploration activity on the African continent is looking for gold deposits.

Of the 2,690 tonnes of gold produced worldwide in 2012, the African continent as a whole accounted for between 20 and 25%,[179] with the top 10 producing countries outputting almost 500 tonnes of gold (Table D.3). In 2013, when total production reached 2,982 tonnes, South Africa and Ghana

Table D.3: Top 10 gold producing countries in Africa—2012

Country	2012 Production
South Africa	154
Ghana	98
Mali	50
Sudan	46
Tanzania	39
Burkina Faso	29
Togo	19
Guinea	15
Ethiopia	13
Ivory Coast	10
Total	**473**

[179]British Geological Survey http://www.bgs.ac.uk/mineralsuk/statistics/home.html

maintained their positions within the top 10 producers worldwide, and at the same time, they had reserves of 6,000 tonnes and 2,000 tonnes respectively.[180]

Most gold mines in Africa are vertically integrated from exploration through development and mining to processing operations, including smelting and in some cases refining, and even sales. Sales products for gold mining operations in Africa are typically in the form of refined metal (doré). However, the level of purity for these products will vary depending upon the requirements of specific customers, and to meet the standards of terminal bullion markets. Because of its inherent value and high density, gold does not create any major requirement in terms of its transportation to the refiners and/or to markets, apart from security and insurance issues.

A review of RIU's Register of African Mining shows that currently there are approximately 101 operations in production on the African continent, categorized in Table D.4[181] by size of operations, whether the operations are predominantly surface or underground workings and geographical location. As shown, the majority of gold mining operations in Africa are, or are partially, surface mines (65%), with just under half (48%) falling into the "medium" size category based upon the statistical analysis discussed below.

Table D.4 shows that the majority of the gold mining operations[182] are based in either the southern region of the African continent, with 28 operations in South Africa (34%), 8 operations in

Table D.4: Geographical distribution of African gold mining operations. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

Country	Open Cut			Underground			Surface & Underground[a]			Advanced Study	Expl.
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large		
Algeria	–	–	–	–	–	–	–	–	–	–	4
Angola	–	–	–	–	–	–	–	–	–	–	1
Botswana	–	1	–	–	–	–	–	–	–	–	1
Burkina Faso	2	3	1	–	–	–	–	–	–	11	59
Cameroon	–	–	–	–	–	–	–	–	–	1	5
CAR	–	–	–	–	–	–	–	–	–	1	1
Côte d'Ivoire	1	2	–	–	–	–	–	–	–	3	18
DRC	1	1	–	–	–	–	–	–	–	4	12
Egypt	–	–	–	–	–	–	–	–	1	2	4
Eritrea[b]	1	–	–	–	–	–	–	–	–	2	5
Ethiopia	–	–	–	–	–	1	–	–	–	2	18
Gabon	–	–	–	–	–	–	–	–	–	1	3
Ghana	–	6	4	–	–	–	–	1	–	7	48
Guinea	–	–	2	–	–	–	–	–	–	3	12
Kenya	–	–	–	–	–	–	–	–	–	1	3

[180]http://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs-2014-gold.pdf

[181]Of the 101 operating mines, only 83 provide production data that allows for their classification by size.

[182]This classification is made by number of operations and not based on annual output.

Table D.4: (continued)

Country	Open Cut			Underground			Surface & Underground[a]			Advanced Study	Expl.
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large		
Liberia	—	—	—	—	—	—	—	—	—	3	14
Madagascar	—	—	—	—	—	—	—	—	—	—	11
Malawi	—	—	—	—	—	—	—	—	—	—	1
Mali	1	3	1	1	—	—	—	1	1	6	51
Mauritania	—	1	1	—	—	—	—	—	—	—	9
Morocco	1	—	—	—	—	—	—	—	—	—	4
Mozambique	—	—	—	—	—	—	—	—	—	2	6
Namibia	1	—	—	—	—	—	—	—	—	1	5
Niger	—	—	—	—	—	—	—	—	—	—	3
Nigeria	—	—	—	—	—	—	—	—	—	1	4
Rwanda	—	—	—	—	—	—	—	—	—	—	4
Senegal	—	1	—	—	—	—	—	—	—	4	18
Sierra Leone	—	—	—	—	—	—	—	—	—	2	4
South Africa	2	—	—	3	11	5	2	4	1	13	7
Sudan	—	—	—	—	—	—	—	—	—	1	4
Tanzania	1	2	2	—	1	—	—	—	—	8	46
Togo	—	—	—	—	—	—	—	—	—	—	1
Uganda	—	—	—	—	—	—	—	—	—	—	2
Zambia	—	—	—	—	—	—	—	—	—	1	1
Zimbabwe	—	—	—	4	2	1	1	—	—	2	8
Totals[c]	**11**	**20**	**11**	**8**	**14**	**7**	**3**	**6**	**3**	**82**	**397**

[a]12 operations that are in the transition phase that include both Surface and Underground operating components have been included in this table, but are not included in the statistical analysis for Table D.5.

[b]The Bisha mine has been until now primarily a gold producer, but it is now becoming a significant copper producer. As a result, it appears in both the gold and copper sections and is included in the corresponding analyses for Tables D.5 and D.14.

[c]Totals differ slightly from those in Table D.2, as production statistics are unavailable for some mines. As a result, they are not able to be classified by size.

Zimbabwe (10%) and 1 in each of Namibia and Botswana, or in the west African region (40%), which is comprised of Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Mali, Mauritania and Senegal. A further investigation shows that the majority of surface gold mines (71%) are located in the West African region, while 83% of the remaining operations are in the southern African region (South Africa—63% and Zimbabwe—20%).

Table D.4 also shows that there is a strong pipeline for gold mining in Africa, with as many projects at the advanced study stage as currently in production. Of interest is that while the traditional gold mining nation of South Africa has the most advanced study stage projects (13), Burkina Faso

Table D.5: Typical size of African gold mining operations categorized by types (surface or underground). Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

		Small (tonnes/day)	*Q1 (t/d)*	Medium (tonnes/day)	*Q3 (t/d)*	Large (tonnes/day)
Gold	Surface	3,500	*4,944*	7,500	*12,750*	21,000
	Underground	500	*960*	1,500	*2,653*	4,000

is not far behind (11), and when combined with the rest of the West African region, the number of advanced study stage projects exceeds those in South Africa, signaling that this region may take over as the largest gold producer on the African continent. This notion is also supported by the wave of exploration being undertaken in that area. As shown in Table D.4, the African continent is scattered with projects exploring for gold mineralization (397 listed across 35 countries), with more than half (233) being in the West African region, 46 in Tanzania and only 7 in South Africa.

From the database of operating African mines that has been compiled for this study (Appendix B.2),[183] mines in each commodity group were classified according to their annual production throughput as small, medium or large. Table D.5 displays the results of this statistical analysis for the surface and underground gold mining operations[184] that are currently in production on the African continent. In this table, the "typical" mine is taken to be the midpoint of each size category range, with the upper bounds for Q1 and Q3 being shown in italics.

Broad revenue and cost considerations for risk analysis and audit prioritization

Small mispricing differences between TPs and at arm's length prices, when occurring in the context of very large items of either revenue or expenses, can result in significant tax leakages. For instance, on an annualized basis the gross revenue generated by a typical gold mining operation in Africa can range from as little as US$44 million in the case of a small underground mine to as much as US$370 million from a large surface operation. Table D.6 provides a complete listing of the order of magnitude estimates of the gross annual value of mineral extracted for the typical gold mining operations.[185]

Table D.6: Order of magnitude gross value of gold in the ground for typical African mining operations. Source: Average grade and current mineral prices from information available at http://www.visualcapitalist.com/global-gold-mine-and-deposit-rankings-2013, http://www.infomine.com and http://www.kitco.com

		Small (USD/annum)	Medium (USD/annum)	Large (USD/annum)
Gold (1.18g/t @ $1,290.30/oz)	Surface	61,678,526	132,168,270	370,071,157
Gold (5.90g/t @ $1,290.30/oz)	Underground	44,056,090	132,168,270	352,448,721

[183]This database was compiled by extracting information primarily from the RIU's Register of African Mines 2014 and from a variety of other published and unpublished sources.

[184]Those operations that are composed of a combination of surface and underground operations, or that are in transition from surface to underground, have been removed for the purpose of this analysis so as to avoid skewing the data for operations that may be in a ramp-up or ramp-down phase.

[185]The order of magnitude estimates are identified through the statistical analysis of the study database in Appendix B.2.

Table D.7: Costing for "typical" African gold mining operations of different sizes and types

	Surface Mine					
	3500		**7500**		**21000**	
Total Mine & Mill Annual OPEX	**$56,347,200**		**$72,981,000**		**$284,634,000**	
Supplies and consumables	$26,497,800	47%	$29,673,000	41%	$95,785,200	34%
Labour and equipment oOperation	$19,756,800	35%	$30,915,000	42%	$149,083,200	52%
Administration	$4,989,600	9%	$5,751,000	8%	$13,910,400	5%
Other	$5,103,000	9%	$6,642,000	9%	$25,855,200	9%
Total Mine & Mill CAPEX	**$58,122,600**		**$202,717,700**		**$624,331,900**	
Equipment purchases and installation	$25,634,000	44%	$93,576,900	46%	$337,530,100	54%
Preproduction and site preparation	$2,781,200	5%	$7,239,800	4%	$23,530,000	4%
Facilities and buildings	$11,950,100	21%	$35,737,500	18%	$75,071,600	12%
Engineering & management	$7,313,100	13%	$22,387,400	11%	$84,527,500	14%
Tailings facility	$3,961,400	7%	$17,379,000	9%	$32,963,700	5%
Sustaining and working capital	$4,444,900	8%	$18,692,200	9%	$33,237,700	5%
Other	$2,037,900	4%	$7,704,900	4%	$37,471,300	6%

Furthermore, mining operations also incur substantial expenses for not only construction, plant and equipment of a capital nature, but also consumables and specialty services, which in many cases are provided by a related overseas party. The level of potential risk to the tax base will be dependent upon the nature of the mining operation, as the different characteristics will dictate a different mix of capital and operating expenditures and sources of procurement.

Table D.7 shows the general cost breakup[186] and magnitude of expenditure for items that may be incurred by the "typical" surface gold mining operations identified in Table D.4 from the database of current operations on the African continent.

The typical median size surface gold mining operation in Africa has a throughput of 7,500 tonnes of ore per day. With an assumed stripping ratio of 4:1, this mine would have annual recurrent operating costs (mine and mill activities) of approximately USD73 million, of which approximately USD30 million would be spent on supplies and consumables, and approximately USD6 million on administration. These two components, which may be subject to the use of transfer prices between associated parties, account for approximately 49% of the annual operating budget in this typical operation. Looking at a typical small surface gold mine, these costs will typically rise to 56% of the annual operating budget, and fall to 39% of the annual operating budget in a typical large mine.

When looking at the absolute value of these components in a typical medium surface gold mine, they total approximately USD36 million annually. If these expenses were to be charged at 5% above the typical amount (USD38 million instead of USD36 million) the reduction in taxes payable, assuming a 30% tax rate, would be approximately USD0.6 million per year. If this same calculation is made for a large surface mine, the annual reduction in tax revenue rises to about USD1.65

[186]Cost information was extracted from the Mining Cost Service and the Coal Cost Guide, which are publications produced by CostMine, InfoMine USA, Inc.

Table D.8: Disaggregation of supplies and consumables expenditures for surface gold mining operations

	Surface Mine		
Supplies—Surface mine	**3500**	**7500**	**21000**
Diesel fuel and fuel oil	13%	14%	18%
Electricity	9%	10%	10%
Explosives	11%	10%	15%
Blasting supplies	6%	1%	1%
Grinding media and mill liners	48%	47%	41%
Processing agents	12%	17%	15%

million. If the supplies and consumables category is disaggregated as in Table D.8, it can be seen that the largest proportion of annual expenditures will be associated with the processing stages of the operation (grinding media and mill liners, processing agents, and fuel). In the medium size operation, these components can account for approximately 78% of the annual expenditure on "supplies and consumables." As a result, it would be considered good practice for the tax authority to have knowledge of mineral processing so that these items of expenditure can be competently audited for fair pricing practices.

Looking at the initial capital expenditures that would be required for these mines, the components associated with the purchase and installation of plant and equipment and those associated with specialized engineering and management services are considered to be of the highest risk of being subject to the use of transfer prices. These categories of capital expenditure account for 57%, 57% and 68% of the total capital expenditure for a small, medium and large surface gold mining operation respectively. Of these, the purchase of plant and equipment is by far the largest expense. Comparable transactions can be found for the majority of equipment purchased by a mining operation, hence opportunities for transfer mispricing are to some degree constrained. Transfer mispricing, however, can still occur in the context of funding of these capital items by either internal loans or leasing. By contrast, as already discussed in Part A when dealing with the MNEs' use of Engineering, Science and Technical hubs, there is greater ambiguity and opportunities for potential mispricing in the areas of engineering and management services.

The comparable cost data for the underground gold mining operations are presented in Table D.9, indicating that the typical medium size underground gold mining operation has a throughput of 1,500 tonnes of ore per day. If a sublevel open stoping mining method is used, this mine would have annual operating expenses (mine and mill activities) of approximately USD31 million, of which approximately USD12 million would be spent on supplies and consumables, and approximately USD4.5 million on administration, together accounting for 53% of the annual operating budget. Comparing this to the typical small underground gold mine, these costs will typically be 51% of the annual operating budget, and 59% of the annual operating budget in a typical large sized operation.

When looking at the absolute value of these components for the typical large underground gold mine, it can be seen that the largest annual expenditure will be on supplies and consumables rather than labor and equipment operation, as was the case for the surface mining operations. These supplies and consumables can total approximately USD21 million annually. If these expenses were to be charged at 5% above the typical amount (USD22 million instead of USD21 million) the reduction in taxes payable, assuming a 30% tax rate, would be approximately USD0.3 million per year. If the

Table D.9: Costing for "typical" African gold mining operations of different sizes and types

	Underground Mine					
	500		1500		4000	
Total Mine & Mill Annual OPEX	**$19,969,200**		**$30,731,400**		**$49,377,600**	
Supplies and consumables	$5,374,800	27%	$11,793,600	38%	$21,254,400	43%
Labour and equipment operation	$7,995,600	40%	$11,377,800	37%	$15,868,800	32%
Administration	$4,784,400	24%	$4,492,800	15%	$7,761,600	16%
Other	$1,814,400	9%	$2,791,800	9%	$4,726,800	10%
Total Mine & Mill CAPEX	**$40,971,600**		**$91,914,000**		**$121,032,600**	
Equipment purchases and installation	$21,763,100	53%	$42,472,700	46%	$50,136,100	41%
Preproduction and site preparation	$2,229,600	5%	$9,401,700	10%	$12,427,100	10%
Facilities and buildings	$4,254,300	10%	$8,206,600	9%	$15,044,000	12%
Engineering & management	$5,038,800	12%	$9,854,900	11%	$13,938,500	12%
Tailings facility	$1,100,600	3%	$3,961,400	4%	$9,161,700	8%
Sustaining and working capital	$1,683,400	4%	$6,227,200	7%	$8,377,000	7%
Other	$1,877,800	5%	$4,424,900	5%	$4,222,500	3%

supplies and consumables component is again disaggregated as in Table D.10, it can be seen that the materials used in the processing stage of the operations pose the greatest risk for reducing the tax base.

Looking at the initial capital expenditures that would be required for these mines (Table D.9), the component associated with specialized engineering and management services is once again considered the area most susceptible to the misuse of transfer prices. This category of expenditure

Table D.10: Disaggregation of supplies and consumables expenditures for underground gold mining operations

	Underground Mine		
Supplies—Surface Mine	**500**	**1500**	**4000**
Diesel fuel and fuel oil	5%	2%	2%
Electricity	9%	6%	10%
Explosives	3%	4%	3%
Blasting supplies	8%	9%	2%
Drill bits and steel	4%	5%	1%
Liners and rock bolts	3%	5%	0%
Cement	13%	27%	16%
Grinding media and mill liners	43%	33%	48%
Processing agents	11%	9%	17%

accounts for 12%, 11% and 12% of the total capital expenditure for a small, medium and large underground gold mining operation respectively.

B.3.2 Base Metals

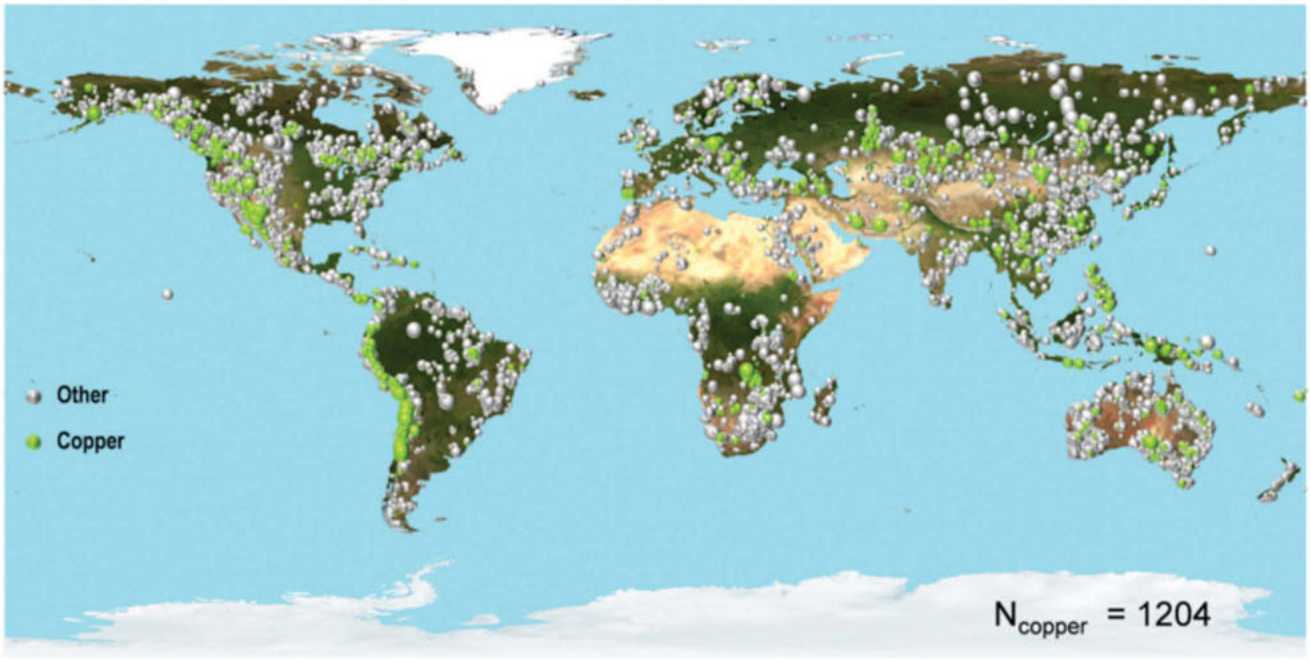
Ownership of base metal mines (copper, lead and zinc) in Africa is generally more consolidated than their counterparts around the globe. A few base metal mines in Africa are fully vertically integrated to the point where they carry out sales of refined metals.[187] In general, however, they are only vertically integrated down to the concentration stage and sell concentrates to related or third party smelters. This entails significant land and sea freight transport activities. The main constraint for developing smelting capacity, besides availability of significant reserves of high-quality ores, is the availability of a sufficient, reliable and affordable energy supply.

B.3.2.1 Copper

Industry profile: World production and resources

Copper was one of the first metals to be mined and is still one of the most important industrial minerals due to its high conductivity and corrosion resistant properties. However, due to its low market price, compared to that of gold, PGMs and other high-value minerals and progressively lower grades being mined, mining copper economically requires first, relatively large operations to move substantial tonnages of material and second, advanced copper extraction and refining technologies. These create relatively high barriers to entry that lead to a global industry that is dominated by fewer large operations. As can be seen in Figure D.4, the occurrence of copper deposits has tended to be grouped, within a relatively small number of countries hosting significant deposits

Figure D.4: Significant copper deposits—discovered all years



Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

[187] http://mrdata.usgs.gov/mineral-resources/copper-smelters.html

Table D.11: Top 10 copper producers 2013 with 2014 estimates for comparison (reproduced from statistics in the US Geological Survey's Mineral Commodity Summaries 2015)

Country	2013 (thousand metric tonnes)	2014 (thousand metric tonnes)	Reserves (thousand metric tonnes)
Chile	5,780	5,800	209,000
China	1,600	1,620	30,000
Peru	1,380	1,400	68,000
USA	1,250	1,370	35,000
Australia	990	1,000	93,000
DRC	970	1,100	20,000
Russia	833	850	30,000
Zambia	760	730	20,000
Canada	632	680	11,000
Indonesia	504	400	25,000

that contribute disproportionately to total global production. Copper at 12% of global demand by value, along with gold, iron ore[188] and coal[189] (by both value and mass) dominate world markets for minerals and metals.

In 2013, world mine production of copper was calculated to be 18.1 million tonnes, representing an 8.4% increase from 2012, and production is expected to continue growing at a compound annual rate of 3.9% over the period from 2014 to 2020.[190] Table D.11 shows that production of copper metal continues to be dominated by Chile, contributing just under one-third of the total supply. In fact, the top five producing countries accounted for more than 60% of total world production in 2013, and were expected to make a similar contribution in 2014.

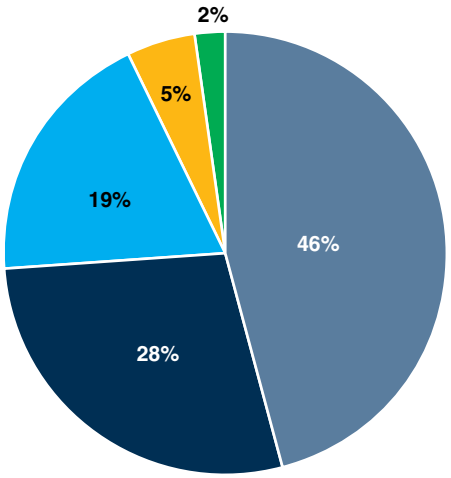
When looking at the future of the global copper sector, it is expected that Africa will be a major player. In this context it is worth noting that the reserve figures for the DRC and Zambia do not reflect the very significant exploration potential of these countries for this metal. As depicted in Figure D.5, Africa as a continent contributed approximately 5% to total production in 2011. This figure grew to approximately 8.5% and 10% of world production in 2012 and 2013 respectively.[191] As some of the large Chilean copper mines mature and realize lower grade material, production from the African continent will be well positioned to play a role of increasing importance into the future.

Current African producers: Production size and geographical distribution

Currently, the copper industry represents a substantial proportion of the mining-related activities taking place on the African continent. As illustrated in Table D.2, of the 286 producing mining operations on the African continent, 26 of them are copper operations, which ranks fourth among commodities. However, the future importance of copper to the African continent becomes apparent when looking at the number of projects in the advanced study stage or exploration stage, with

[188]ICMM Annual Report, 2013 (Original source Raw Materials Group), accessed February 2015.
[189]British Geological Survey data base, accessed April 2015.
[190]http://finance.yahoo.com/news/global-copper-mining-2020-150100834.html
[191]http://en.wikipedia.org/wiki/List_of_countries_by_copper_production

Figure D.5: World copper production by continent 2011. Source: (http://www.lme.com/en-gb/metals/non-ferrous/copper/production-and-consumption/)



Region	%
Asia	46
America	28
Europe	19
Africa	5
Oceania	2

Source: WBMS www.world-bureau.com

29 and 79 projects respectively, placing copper third behind gold and coal for advanced study stage projects and second to only gold in exploration intensity. This developing pipeline positions copper as a commodity of ever increasing prominence and importance as the African nations continue to develop.

Of the approximately 16.8 million tonnes of copper produced worldwide in 2012, the African continent as a whole accounted for approximately 8.5%,[192] with the top producing countries outputting more than 1.4 million tonnes of copper (Table D.12).

A review of RIU's Register of African Mining shows that currently there are approximately 26 operations in production on the African continent, categorized in Table D.13 by size of operations,

Table D.12: Top copper producing countries in Africa—2012

Country	2012 Production
Zambia	629,020
DRC	608,400
South Africa	81,000
Mauritania	37,670
Botswana	35,768
Morocco	18,500
Tanzania	5,840
Namibia	5,304
Zimbabwe	4,724
Total	**1,426,226**

[192]http://en.wikipedia.org/wiki/List_of_countries_by_copper_production

Table D.13: Geographical distribution of African copper mining operations. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

Country	Open Cut			Underground			Surface & Underground[a]			Advanced Study	Expl.
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large		
Angola	–	–	–	–	–	–	–	–	–	1	–
Botswana	1	1	–	–	–	–	1	–	–	3	7
Burkina Faso	–	–	–	–	–	–	–	–	–	–	1
Côte d'Ivoire	–	–	–	–	–	–	–	–	–	–	1
DRC	2	5	1	–	–	–	1	1	–	11	20
Eritrea[b]	–	1	–	–	–	–	–	–	–	–	2
Ethiopia	–	–	–	–	–	–	–	–	–	–	1
Guinea	–	–	–	–	–	–	–	–	–	–	1
Kenya	–	–	–	–	–	–	–	–	–	–	2
Mauritania	–	1	–	–	–	–	–	–	–	–	–
Morocco	–	–	–	–	–	–	–	–	–	1	3
Mozambique	–	–	–	–	–	–	–	–	–	–	2
Namibia	–	–	–	1	–	–	–	–	–	7	12
South Africa	–	–	–	–	1	1	–	–	–	–	2
Tanzania	–	–	–	–	–	–	–	–	–	1	5
Uganda	–	–	–	–	–	–	–	–	–	–	2
Zambia	–	–	2	1	4	1	–	–	–	5	18
Total	**3**	**8**	**3**	**2**	**5**	**2**	**2**	**1**	**–**	**29**	**79**

[a]Two operations that are in the transition phase that include both Surface and Underground operating components, as well as one undefined operation have been included in this table, but are not included in the statistical analysis for Table D.14.

[b]The Bisha mine has been until now primarily a gold producer, but it is now becoming a significant copper producer. As a result, it appears in both the gold and copper sections and is included in the corresponding analyses for Table D.14.

whether they are predominantly surface or underground workings and geographical location. As shown, the majority of the copper mining operations in Africa are, or are partially, surface mines (65%), with more than half (54%) falling into the "medium" size category based upon the statistical analysis. Table D.13 also shows that the majority of the copper mining operations[193] are based in the DRC (10) and Zambia (8). A further investigation shows that the majority of copper mines in the DRC are surface operations, while Zambia, with the exception of two large surface mines, has predominantly underground operations.

The review of the African mining database also shows that there is a strong pipeline for copper mining in Africa, with more projects at advanced study stages as currently in production. Of interest is that while the traditional copper mining nations of DRC and Zambia have a significant number of

[193]This classification is made by number of operations and not based on annual output.

Table D.14: Typical size of African copper mining operations categorized by type (surface or underground). Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications

		Small (tonnes/day)	*Q1 (t/d)*	Medium (tonnes/day)	*Q3 (t/d)*	Large (tonnes/day)
Copper	Surface	2,000	*2,746*	9,500	*30,097*	71,500
	Underground	1,000	*2,292*	6,000	*28,042*	45,000

advanced study stage projects, 11 and 5 respectively, Namibia also has 7 projects in this classification. The notion that future production may come from these three countries is supported when looking at the distribution of exploration projects across the continent, as combined they account for 50 of the 79 copper exploration projects.

As done for gold mining operations, an analysis of the operating African mines database (Appendix B.1)[194] was undertaken to identify the characteristics of "typical" copper mines on the African continent. Table D.14 displays the results of the statistical analysis for the surface and underground copper mining operations[195] that are currently in production.

Broad revenue and cost considerations for risk analysis and audit prioritization

As already mentioned, small mispricing differences between TPs and at arm's length prices when occurring in the context of very large revenue items can result in significant tax leakages. For instance, if after smelting and refining charges a company receives payment for 78% of the value of the copper contained in the concentrate,[196] on an annualized basis the gross revenue generated by a typical copper mining operation in Africa can range from as little as USD20.7 million in the case of a small underground mine to as much as USD1.48 billion from a large surface operation. Table D.15 provides a complete listing of the order of magnitude estimates of the annual value of mineral in the ground for the typical copper mining operations identified through the statistical analysis.

If the smelter is a related entity, and the price it pays for the copper in the concentrate is 90% of the prevailing spot price (say USD5,968/t rather than USD6,631/t), revenue would be reduced to the NSRs shown in Table D.16, resulting in an erosion of the tax base of between USD2 million and USD148 million depending upon the type of operation, irrespective of the mining and milling costs

Table D.15: Order of magnitude gross value of copper in the ground for typical African mining operations

		Small (USD/annum)	Medium (USD/annum)	Large (USD/annum)
Copper (1.11% @ $6,631.06/t)	Surface	41,336,437	196,348,074	1,477,777,608
	Underground	20,668,218	124,009,310	930,069,823

[194]This database was compiled by extracting information primarily from the RIU's Register of African Mines 2014 and from a variety of other published and unpublished sources.

[195]Those operations that are composed of a combination of surface and underground operations, or that are in transition from surface to underground, have been removed for the purpose of this analysis so as to avoid skewing the data for operations that may be in a ramp-up or ramp-down phase.

[196]O'Hara, T.A. 1980. "Quick guides to the Evaluation of Orebodies," *CIM Bulletin*, February 1980, pp. 87–99.

Table D.16: Order of magnitude gross value of copper in the ground for typical African mining operations at 90% of the market price

		Small (USD/annum)	Medium (USD/annum)	Large (USD/annum)
Copper 1.11% @ $5,967.95/t)	Surface	37,202,793	176,713,266	1,329,999,847
	Underground	18,601,396	111,608,379	837,062,841

incurred to produce the concentrate. Assuming a 30% tax rate, the magnitude of the tax leakage would be in the order of between USD0.6 million and USD44.4 million. These estimates are predicated on the basis that the weight and grade of concentrates transferred to a related smelter have not been understated, which re-enforces the need for thorough physical controls and exchange of relevant information between different government agencies, e.g., tax authority, Department of Mines, Customs, etc.

It can be concluded that the prices used to transfer intermediate products between related parties is an area of potentially very high tax sensitivity and warrants special attention in the audit process. This type of information will help alert taxing authorities about unusual transactions resulting in anomalous cost structures and in protracted low profitability or loss making relative to peers.

However, revenues are not the only area of focus. As with the gold analysis, copper mines also incur substantial capital and operating expenses for goods and services, which in many cases will be provided through or by a related overseas party. Again, the level of potential risk to the tax base will be dependent upon the nature of the mining operation, as the different characteristics will dictate a different mix of capital and operating expenditures.

Table D.17 shows the general cost breakup and magnitude of expenditure for items that may be incurred by the "typical" surface copper mining operations identified in Table D.14. The typical median size surface copper mining operation has a throughput of 9,500 tonnes of ore per day. With an assumed stripping ratio of 4:1, this mine would have annual operating costs (mine and mill activities) of approximately USD88 million, of which approximately USD34 million would be spent on supplies and consumables, and approximately USD7 million on administration. These two components, which may be subject to the use of transfer prices between associated parties, account for approximately 47% of the annual operating budget in this typical operation. If the supplies and consumables are further subdivided as in Table D.18, it is the supplies associated with the processing side of the operations that represent the major cost components. This includes grinding media mill liners, and the processing agents, as well as the fuel to run the processing operations. It is expenditures on these supplies that the tax authority should be focusing on, as they pose the largest risk to government revenue.

When looking at the absolute value of these components in a typical medium size surface copper mine, they total approximately USD41 million annually. If these expenses were to be charged at 5% above the typical amount (USD43 million instead of USD41 million) the reduction in taxes payable, assuming a 30% tax rate, would be approximately USD0.6 million per year.

Looking at the initial capital expenditures that would be required for this mine, the components associated with the purchase and installation of equipment, and those associated with specialized engineering and management services are of the highest risk to be subject to the use of transfer prices. These categories of expenditure account for 46% and 11% respectively of the total capital spend for the medium size surface copper mining operation. Of these, the purchase of equipment is by far the largest expense. However, as comparable transactions can be found for the majority of

Table D.17: Costing for "typical" African copper mining operations of different sizes and types

	Surface Mine					
	2000—2:1		**9500—4:1**		**71500—8:1**	
Total Mine & Mill Annual OPEX	**$25,682,400**		**$88,099,200**		**$907,849,800**	
Supplies and consumables	$11,548,800	45%	$34,029,000	39%	$277,734,600	31%
Labour and equipment operation	$9,108,000	35%	$38,782,800	44%	$518,661,000	57%
Administration	$2,692,800	10%	$7,284,600	8%	$29,086,200	3%
Other	$2,332,800	9%	$8,002,800	9%	$82,368,000	9%
Total Mine & Mill CAPEX	**$49,970,500**		**$191,801,100**		**$2,316,331,200**	
Equipment purchases and installation	$22,043,700	44%	$87,273,200	46%	$1,293,919,800	56%
Preproduction and site preparation	$1,654,900	3%	$7,239,800	4%	$75,940,500	3%
Facilities and buildings	$11,207,300	22%	$32,777,700	17%	$246,651,900	11%
Engineering & management	$5,948,200	12%	$21,337,400	11%	$306,953,800	13%
Tailings facility	$3,961,400	8%	$17,511,200	9%	$119,493,700	5%
Sustaining and working capital	$3,799,500	8%	$17,956,900	9%	$129,497,100	6%
Other	$1,355,500	3%	$7,704,900	4%	$143,874,400	6%

Table D.18: Disaggregation of supplies and consumables for typical surface copper mining operations

	Surface Mine		
Supplies—Surface Mine	**2000—2:1**	**9500—4:1**	**71500—8:1**
Diesel fuel and fuel oil	11%	15%	19%
Electricity	10%	10%	10%
Explosives	7%	10%	13%
Blasting supplies	4%	1%	0%
Grinding media and mill liners	53%	50%	45%
Processing agents	14%	13%	12%

equipment purchased by a mining operation, the engineering and management services pose the potentially greatest risk from a transfer pricing perspective.

Tables D.19 and D.20 present the situation for the typical African underground copper mining operations, as identified through the statistical analysis. These two tables show that the underground mining situation is similar to that for the surface mining operations, where the largest risk is in the supplies, consumables and fuel associated with the processing of the ore, as well as the specialized engineering and management services used in the initial construction of the mining operation.

Table D.19: Costing for "typical" African copper mining operations of different sizes and types

	Underground Mine					
	1000—C&F-Adit		**6000—SLOS-Adit**		**45000—BC-Adit**	
Total Mine & Mill Annual OPEX	**$23,680,800**		**$71,128,800**		**$275,238,000**	
Supplies and consumables	$8,517,600	36%	$29,570,400	42%	$127,980,000	46%
Labour and equipment operation	$8,719,200	37%	$23,436,000	33%	$91,692,000	33%
Administration	$4,291,200	18%	$11,642,400	16%	$30,618,000	11%
Other	$2,152,800	9%	$6,480,000	9%	$24,948,000	9%
Total Mine & Mill CAPEX	**$64,791,800**		**$113,342,700**		**$482,856,600**	
Equipment purchases and installation	$31,425,900	49%	$45,710,300	40%	$188,102,100	39%
Preproduction and site preparation	$5,530,100	9%	$12,427,100	11%	$46,233,400	10%
Facilities and buildings	$11,627,300	18%	$20,668,000	18%	$94,275,400	20%
Engineering & management	$7,346,300	11%	$13,103,300	12%	$39,205,600	8%
Tailings facility	$2,087,700	3%	$9,231,400	8%	$62,999,700	13%
Sustaining and working capital	$3,609,400	6%	$7,980,100	7%	$42,820,800	9%
Other	$3,165,100	5%	$4,222,500	4%	$9,219,600	2%

Table D.20: Disaggregation of supplies and consumables expenditure for typical surface copper mining operations

	Underground Mine		
Supplies—Surface Mine	**1000—C&F-Adit**	**6000—SLOS-Adit**	**45000—BC-Adit**
Diesel fuel and fuel oil	3%	2%	2%
Electricity	6%	10%	12%
Explosives	4%	3%	1%
Blasting supplies	10%	2%	2%
Drill bits and steel	6%	1%	2%
Liners and rock bolts	5%	0%	0%
Cement	25%	16%	2%
Grinding media and mill liners	32%	51%	63%
Processing agents	8%	13%	16%

B.3.3 Bulk Minerals

Ownership of mining for bulk commodities such as iron and coal is quite consolidated[197] and the level of vertical integration in these sectors is generally limited to activities from exploration to mine development down to a low level of beneficiation. Bulk operation requires significant transportation infrastructure which in some cases may be proprietary. Bulk commodities are primarily sold in the forms of crushed and screened ores and subordinately in the form of partially beneficiated products.

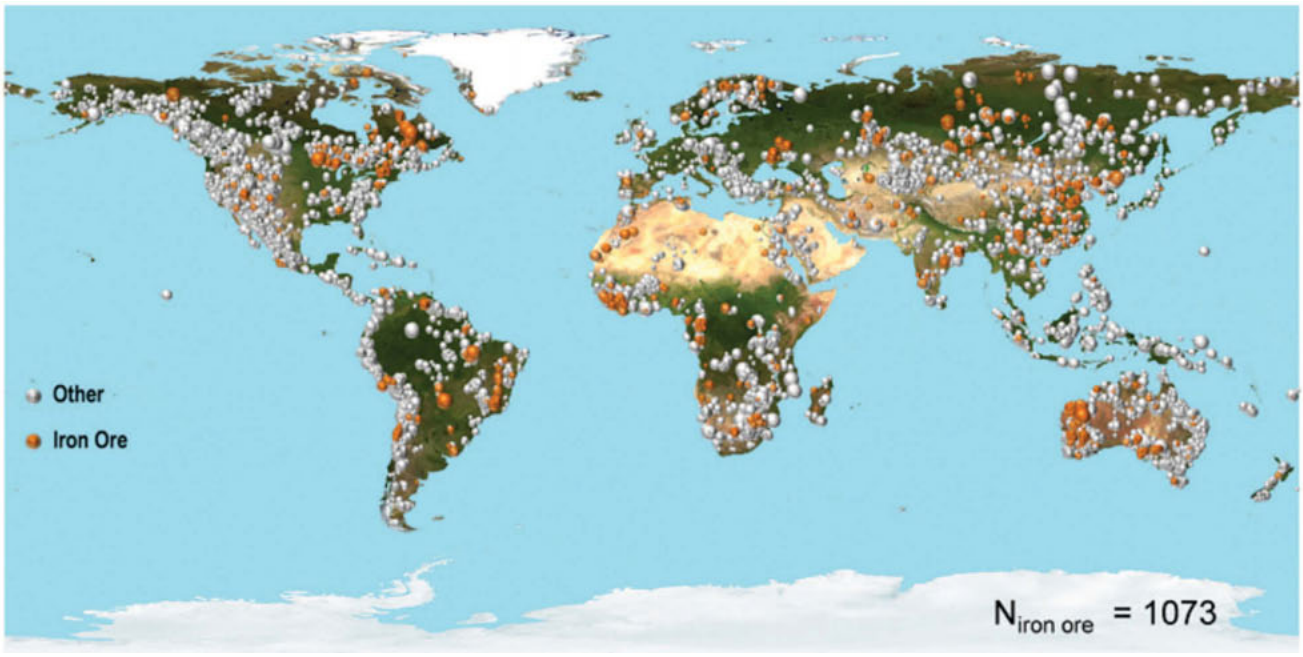
B.3.3.1 Iron Ore

Industry profile: World production and resources

Mining of iron ore occurs on a significant scale, involving large equipment operating in highly mechanized surface mining environments. It is often a high-volume/low-margin business that is highly capital-intensive, and requires significant investment in infrastructure such as rail and port facilities.[198] These large capital requirements create relatively high barriers to entry that lead to a global industry that is dominated by a few large companies.

While iron ore deposits are found in numerous jurisdictions around the globe, concentrations that are economical to mines have tended to be grouped within a relatively small number of host countries (Figure D.6).

Figure D.6: Significant iron ore deposits—discovered all years



Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

[197]http://www.bloomberg.com/markets/companies/metal-iron/
[198]en.wikipedia.org/wiki/Iron-ore

Table D.21: Top 10 iron ore producers 2013 with 2014 estimates for comparison (reproduced from statistics in the US Geological Survey's Mineral Commodity Summaries 2015)

Country	2013 (million metric tonnes)	2014 (million metric tonnes)	Reserves (million metric tonnes)
China	1,320	1,365	20,930
Australia	554	601	48,230
Brazil	288	291	28,210
India	137	137	7,371
Russia	96	96	22,750
Ukraine	75	75	5,915
South Africa	66	71	910
USA	48	53	6,279
Iran	46	41	2,275
Canada	39	37	5,733

In 2013, world mine production of iron ore was calculated to be 2.8 billion tonnes and is expected to increase slightly to 2.9 billion tonnes in 2014.[199] At this same time, world reserves of crude ore are estimated to be approximately 190 billion tonnes.[200] The top three producing countries accounted for more than 77% of total world production in 2013, and were expected to make a similar contribution in 2014 (Table D.21). Total African production amounted to 130.6 million tonnes in 2013 (5% of world supply) with South Africa accounting for 51% of African production.

Current African producers: Production size and geographical distribution

With the high exploration potential that is apparent in Africa, iron ore mining has the potential to contribute significantly to government revenues. Currently, the iron ore sector represents a substantial proportion of the mining related activities taking place on the African continent, with many projects under exploration or in the advanced study stages. Categorizing the active operations by size and geographical location in Table D.22 shows that African iron ore production is currently dominated by medium- to large-size operations.

It can also be seen that while South Africa is the dominant producer (33%), there are a number of countries producing iron ore, with large mines located in both Mauritania and Sierra Leone (although the latter is currently on care and maintenance on account of depressed iron ore prices). The review of the African mining database also shows that there is a strong pipeline for iron ore mining in Africa, with more projects at advanced study stages than currently in production. Of interest is that while South Africa is poised to be the largest producer, there is a number of exploration and advanced study stage projects in the West African region.

An analysis of the operating African mines database (Appendix B.1)[201] was undertaken to identify the characteristics of "typical" iron ore mines on the African continent, with the results presented in Table D.23.

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[199]http://minerals.usgs.gov/mcs2015.pdf

[200]http://minerals.usgs.gov/mcs2015.pdf

[201]This database was compiled by extracting information primarily from the RIU's Register of African Mines 2014 and from a variety of other published and unpublished sources.

Table D.22: Geographical distribution of African iron ore mining operations. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

Country	Open Cut			Advanced Study	Expl.
	Small	Medium	Large		
Algeria	—	1	—	1	—
Angola	—	—	—	2	—
Cameroon	—	—	—	3	4
CAR	—	—	—	—	1
Côte d'Ivoire	—	—	—	1	—
DRC	—	—	—	—	1
Egypt	—	1	—	—	—
Gabon	—	—	—	—	9
Guinea	1	—	—	3	4
Liberia	—	2	—	4	9
Madagascar	—	—	—	—	3
Malawi	—	—	—	—	2
Mali	—	—	—	1	1
Mauritania	—	1	1	4	7
Morocco	—	1	—	—	—
Mozambique	—	—	—	1	2
Namibia	—	—	—	1	2
Nigeria	—	—	—	1	—
R of Congo	—	—	—	4	4
Sierra Leone	—	1	1	1	4
South Africa	1	2	3	10	2
Swaziland	—	1	—	—	—
Tunisia	1	—	—	—	—
Zimbabwe	—	—	—	—	2
Total[a]	**3**	**10**	**5**	**37**	**57**

[a]Two operations did not report production information, and as a result are not classified in this table.

Table D.23: Typical size of African iron ore mining operations. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

		Small (tonnes/day)	*Q1 (t/d)*	Medium (tonnes/day)	*Q3 (t/d)*	Large (tonnes/day)
Iron Ore	Surface	1,500	*3,083*	8,000	*27,083*	50,000

Table D.24: Order of magnitude gross value of iron ore in the ground for typical African mining operations

		Small (USD/annum)	Medium (USD/annum)	Large (USD/annum)
Iron ore (62% @ $100/t)	Surface	54,000,000	288,000,000	1,800,000,000

Broad revenue and cost considerations for risk analysis and audit prioritization

Table D.24 provides a complete listing of the order of magnitude estimates of the annual value of sales based on the mineral in the ground for the typical iron ore mining operations identified through the statistical analysis. For example, if a large iron ore mine is producing a product grading 62% it could expect to receive annual revenues in the order of USD1.8 billion when the market price is USD100/tonne.

At this level of revenue, even a 1% change in the price paid can translate into tens of millions of dollars on an annual basis. In the iron ore sector, this transfer may be to a related steel mill, where the iron ore is turned into a final saleable product in a jurisdiction other than that within which it was mined. As a result, the prices used to transfer products between related parties is an area of potentially high tax sensitivity and warrants special attention in the audit process. However, revenues are not the only area of focus as iron ore mines are very dependent upon infrastructure to move the large quantities of material that are extracted to the point of sale. As a result, these mines incur substantial capital and operating expenses, which in many cases will be provided by a related overseas party. Again, the level of potential risk to the tax base will be dependent upon the nature of the mining operation, as the different ore body characteristics will dictate a different mix of capital and operating expenditures.

Table D.25 shows the general cost breakdown for both operating and capital along with the magnitudes of expenditures that may be incurred by the "typical" iron ore mining operations identified in Table D.23.

The typical medium-size iron ore mine in Africa has a throughput of 8,000 tonnes of ore per day. With an assumed stripping ratio of 4:1, this mine would have annual operating costs (mine and transportation activities) of approximately $212.9 million, of which approximately 80% would be spent on transportation[202] and approximately 13% on labor. Only 3% and 2% of the annual amount spent are related to supplies and administration respectively. Thus, the largest transfer pricing risk area on an annual basis will be associated with transportation expenses, and as shown in Table D.25, this will be the case no matter what the size of the operation is.

[202]These transportation charges include rail based on a 500km trip from mine to port; port handling, storage, loading and unloading fees; and sea freight from Africa to China (currently the largest market for iron ore).

Table D.25: Costing for "typical" African iron ore mining operations of different sizes

	Surface Mine					
	1500—4:1		**8000—4:1**		**50000—4:1**	
Total Mine & Transport Annual OPEX	**$47,364,751**		**$212,868,006**		**$1,316,565,039**	
Supplies and consumables	$6,863,400	14%	$7,315,200	3%	$36,000,000	3%
Labour and equipment operation	$6,156,000	13%	$28,080,000	13%	$183,420,000	14%
Administration	$1,144,800	2%	$3,974,400	2%	$14,040,000	1%
Transportation	$31,791,151	67%	$169,552,806	80%	$1,059,705,039	80%
Other	$1,409,400	3%	$3,945,600	2%	$23,400,000	2%
Total Mine CAPEX	**$25,012,500**		**$96,491,400**		**$491,094,700**	
Equipment purchases and installation	$10,644,000	43%	$45,976,600	48%	$281,042,300	57%
Preproduction and site preparation	$2,781,200	11%	$7,239,800	8%	$22,947,700	5%
Facilities and buildings	$3,743,500	15%	$11,683,700	12%	$38,034,500	8%
Engineering & management	$3,210,600	13%	$12,149,100	13%	$75,799,100	15%
Sustaining and working capital	$2,595,300	10%	$11,737,300	12%	$31,488,700	6%
Other	$2,037,900	8%	$7,704,900	8%	$41,782,400	9%

Looking at the initial capital expenditures that would be required for these mining operations, the components associated with the purchase of equipment and supplies, and those associated with specialized engineering and management services, represent the highest risk areas in regard to the use of transfer prices. These categories of expenditure account for 48% and 13% respectively in the case of a medium-sized iron ore mining operation, and are even higher for the large-sized operation.

B.3.4 Energy Minerals

Energy mineral commodities (which in this report exclude petroleum) typically mined in Africa are coal and uranium. Unlike most other commodities that allow for relatively easy classification as either mineral or not, unconventional energy resources, like coal-bed methane and oil shale, are hard to classify because their geology is integrated with that of the host minerals. This report is mostly concerned with the production of coal because of its dominance in the global energy mix.

B.3.4.1 Coal

Coal is globally sourced and found in over 70 countries and actively mined in most of them. It is mined for its energy content—and mostly used for the generation of electricity, metallurgical use (e.g., steel industries use coal as a fuel for extraction of iron from ore) and conversion into liquid and gas fuels. Coal plays an important role in the global energy mix and accounts for 40% of global electricity production.[203] According to the World Energy Council, "Coal's dominant position in the global energy mix is largely due to the fact that it is abundant, widely distributed across the globe and affordable." Global consumption of coal is growing and, despite negative publicity, is expected

[203]International Energy Agency: https://www.iea.org/publications/freepublications/publication/KeyElectricityTrends.pdf.

to increase as developing countries require more energy to support their development and populations and economic growth.

The mining of coal ranges from producing bulk material with no or limited processing (typically as feed for power plants) to a complex and vertically integrated range of products. Depending on mine infrastructure, production along the value chain can start at exploration and end at a high level of beneficiation. However, most coal exports are in the form of crushed, screened and/or washed material. Bulk operations require significant transportation infrastructure that in some cases may be proprietary. Its availability is a critical factor in decisions relating to development of these commodities.

Industry profile: World production and resources

Mining of coal today happens on a significant scale, involving heavy equipment like surface draglines and trucks, conveyors (both underground and on surface) and underground mechanized equipment like shearers and continuous miners. Raw coal requires preparation to increase its quality by removing all or some of the undesirable components. In addition to changing its chemical properties through processing technologies, the market has specific requirements for the size distribution of coal products. The international coal mining market requires production of about 7.7 billion tonnes of coal annually[204] with new methods of extracting energy from coal that are gaining momentum, e.g., coal to liquids[205] and underground coal gasification (UCG).[206]

Coal deposits and operations are typically larger (by production) than those for other minerals due to its abundance and high volumes required by the market as inputs for energy. Entry barriers are high because of the scale and reliance on large, mechanized technologies requiring significant upfront capital investment, causing the production to be concentrated in countries with large resources and with access to infrastructure, capital and markets. As can be seen in Figure D.7, coal has historically been found in various quantities around the globe.

The largest coal-producing nations are China, the US, India, Australia, Indonesia, and Russia. The largest importers are Japan, China and South Korea. The largest consumers of coal are China (almost 50% of total global consumption), the US, India, Russia and Japan. World coal production was calculated to be 7,520 million tonnes of oil equivalent (Mtoe) (or 10,743 million TCE)[207] in 2011 (Table D.26). The 2011 reserve estimates clearly illustrate the abundance of coal occurrence in the producing countries.

When looking at the future of the global coal sector, it is expected that Africa, coming from a low industrial base, will experience significant growth in energy consumption. As depicted in Figure D.8, since the year 2000 the African continent has been the host of nearly a quarter of newly identified coal deposits. This trend makes the African continent a player that should see an increased level of activity moving forward.

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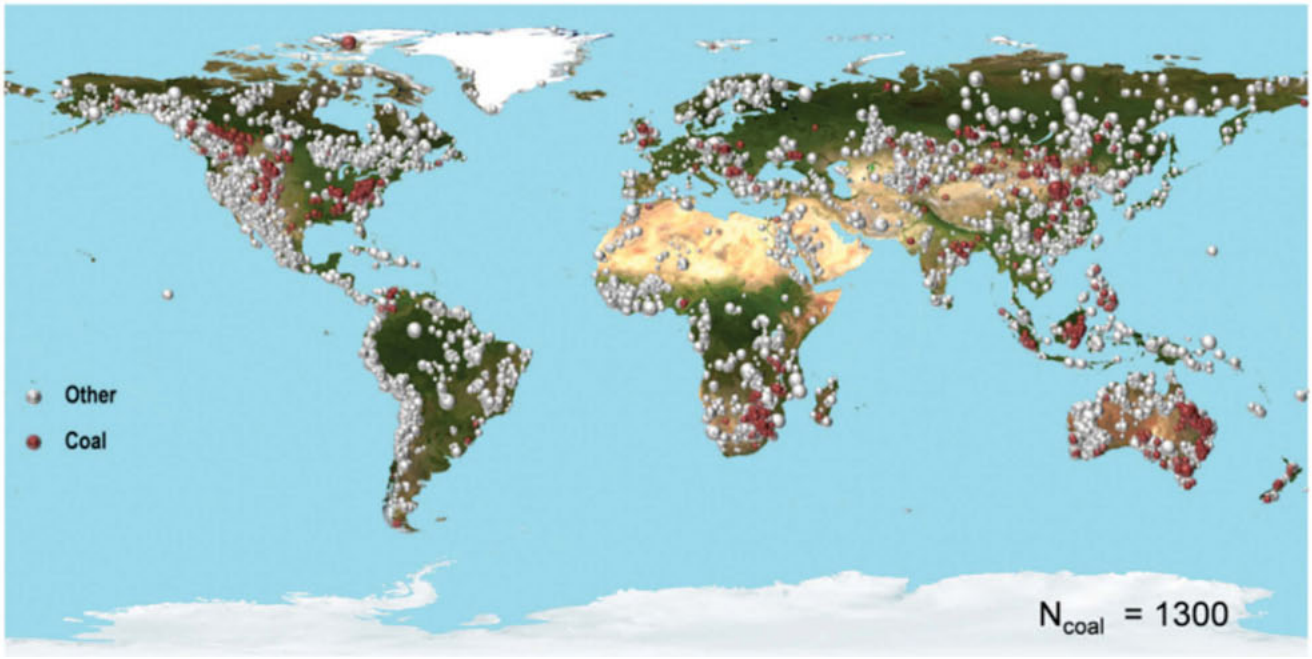
[204]Source: First Research: http://www.firstresearch.com/industry-research/Coal-Mining.html accessed 16 March 2015.

[205]Converting coal to a liquid fuel (CTL)—a process referred to as coal liquefaction—allows coal to be utilised as an alternative to oil. South Africa's SASOL process has been producing coal-derived fuels since 1955.

[206]A method of converting unworked coal—coal still in the ground—into a combustible gas which can be used for industrial heating, power generation or the manufacture of hydrogen, synthetic natural gas or diesel fuel.

[207]TCE—Tonnes of Coal Equivalent. Conversion via http://extraconversion.com/energy/tonnes-of-oil-equivalent, 27 March 2015.

Figure D.7: Significant deposits (coal)—discovered all years



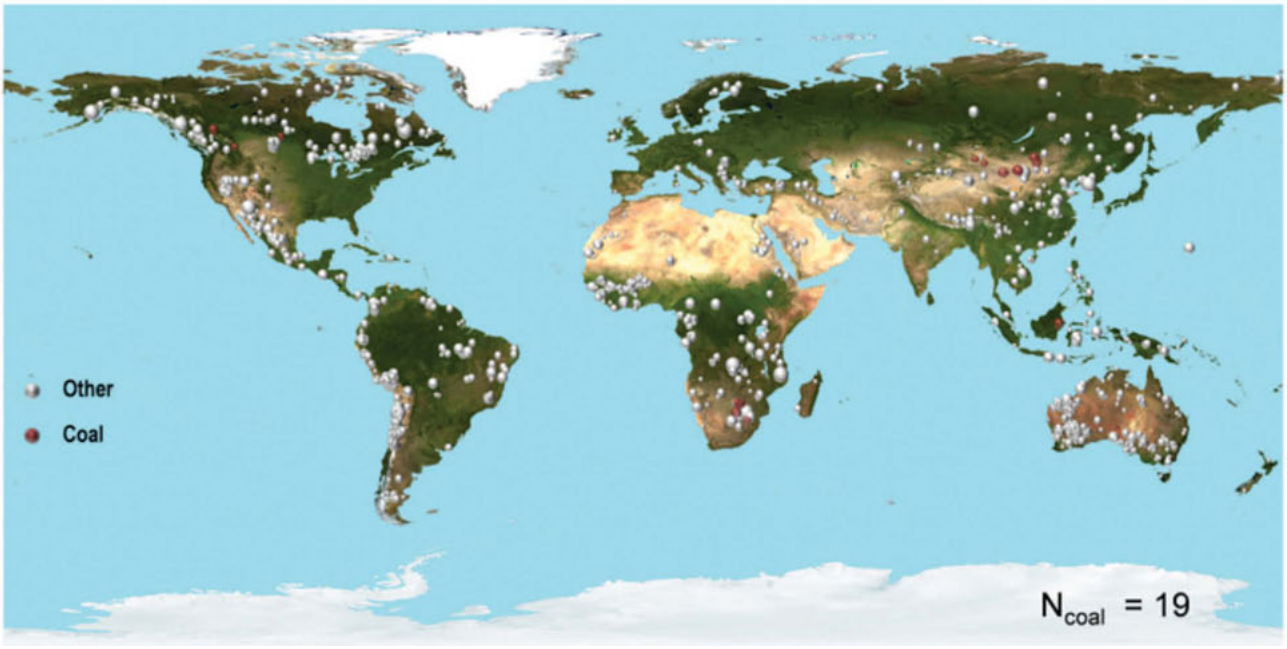
Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

Table D.26: Top 10 coal producing countries 2011

Country	2011 Production (Mtoe)[208]	2011 Reserves (Mtoe)[208]
China	3,384	114,500
USA	1,092	237,295
India	516	60,600
Australia	398	76,400
Indonesia	353	28,017
Russia	326	157,010
South Africa	251	30,156
Germany	190	40,548
Poland	131	5,465
Kazakhstan	125	33,600
Total World	7,520 (10,743MTCE)	891,530 (1,273,614MTCE)

[208]Million tonnes of oil equivalent (Mtoe)—a unit of energy defined as the amount of energy released by burning one tonne of crude oil. It is approximately 42 gigajoules. Source: Wikipedia, http://en.wikipedia.org/wiki/Tonne_of_oil_equivalent, accessed 17 March 2015. Source of data—World Energy Resources: 2013 Survey (Chapter 1—Coal) http://www.worldenergy.org/wp-content/uploads/2013/10/WER_2013_1_Coal.pdf accessed 17 March 2015.

Figure D.8: Significant coal deposits—discovered since 2000



Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Caution: Incomplete data for Russia, India and Australia
Source: MinEx Consulting © May 2015

Current African producers: Production size and geographical distribution

The coal industry represents a significant proportion of mining activities taking place on the African continent. Table D.2 shows that of the 286 producing mining operations, 63 (22%) are producing coal. As far as exploration is concerned, only 6% of the exploration activity on the African continent is directed to coal deposits. The main reasons for this are the lack of transport infrastructure and capital, which are required to compete with established global producers. However, there is significant future potential for coal considering the growing energy needs of the continent. This will require establishment of local markets and investment in exploration for coal. African governments are also set to become more strategic with the protection of supply for local markets through either market restrictions or encouraging more exploration for coal.

A few countries, with South Africa dominant, account for the 280 million tonnes of coal produced in Africa. The African continent as a whole accounted for less than 5% of global production, with South Africa accounting for more than 90% of African production (Table D.27). Ranked seventh in terms of global production, South Africa is the only African country within the top 10 coal producers worldwide.

A review of RIU's Register of African Mining shows that currently there are 63 coal operations in production on the African continent, categorized in Table D.28[209] by size, type and geographic location of operations. From Table D.28 one can observe the following:

- Most coal mining operations in Africa are surface mines (44% of all mines); and
- Medium-sized mines account for 50% of all mines.

[209]Of the 63 operating mines, only 50 provide production data that allows for their classification by size.

Table D.27: Top coal producing countries in Africa—2012

Country	2012 Production (Mtpa)	2011 Reserves (Mtoe)[210]
South Africa	259	30,156
Mozambique	13	212
Botswana	3	40
Niger	0.2	70
Malawi	0.1	2
Total Africa	**280**	**31,617 (45,167MTCE)**

Table D.28:
Geographical distribution of African coal mining operations. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

Country	Open Cut			Underground			Surface & Underground[a]			Advanced Study	Expl.
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large		
Botswana	—	—	—	—	—	—	—	1	—	5	7
Madagascar	—	—	—	—	—	—	—	—	—	2	1
Malawi	—	—	—	1	—	—	1	—	—	—	2
Mali	—	—	—	—	—	—	—	—	—	—	1
Mozambique	1	1	1	—	—	—	1	—	—	3	5
Niger	1	—	—	—	—	—	—	—	—	—	—
Nigeria	—	—	—	—	—	—	—	—	—	—	1
South Africa	4	9	4	2	6	3	4	7	1	25	16
Tanzania	—	—	—	—	—	—	—	—	—	1	9
Zambia	—	—	—	—	—	—	—	—	—	—	2
Zimbabwe	1	—	—	—	—	—	—	1	—	2	2
Total[b]	**7**	**10**	**5**	**3**	**6**	**3**	**6**	**9**	**1**	**38**	**46**

[a]16 operations that are in the transition phase that include both Surface and Underground operating components have been included in this table, but are not included in the statistical analysis for Table D.29.

[b]Totals differ slightly from those in Table D.2, as production statistics are unavailable for some mines. As a result, they are not able to be classified by size.

The majority of the coal mining operations[211] occur in the southern region of the African continent, with 40 in South Africa (80%), 4 in Mozambique (5%), 2 in each of Malawi and Zimbabwe, one in Botswana and one in West Africa (Niger). Table D.28 also shows that there is a reasonable pipeline

[210]Million tonnes of oil equivalent (Mtoe)—a unit of energy defined as the amount of energy released by burning one tonne of crude oil. It is approximately 42 gigajoules. Source Wikipedia: http://en.wikipedia.org/wiki/Tonne_of_oil_equivalent, accessed 17 March 2015. Source of data—World Energy Resources: 2013 Survey (Chapter 1—Coal) http://www.worldenergy.org/wp-content/uploads/2013/10/WER_2013_1_Coal.pdf accessed 17 March 2015.

[211]This classification is made by number of operations and not based on annual output.

for coal mining in Africa, with 38 projects at advanced study stage to sustain current production. As expected, South Africa's coal mining sector has the most advanced study stage projects (25), with Botswana making rapid advances to expand its coal production (five at advanced study stage, compared to only one operating coal mine). Coal production is concentrated in Southern African countries, signaling that this region has above-average coal endowment and is potentially better connected to the markets. This notion is also supported by the exploration being undertaken in that area. Although this appears adequate to maintain current supply, it is not sufficient to support the likely growth in future demand for coal in Africa.

Table D.29 displays the results of the statistical analysis for the surface and underground coal mining operations that are currently in production on the African continent.

Broad revenue and cost considerations for risk analysis and audit prioritization

It stands to reason that there is scope for mispricing of some coal products, which could lead to BEPS and tax leakages. The scale (volume) is also significant, especially for large mines. For instance, on an annualized basis the gross revenue generated by a typical coal mining operation can range from as little as USD12 million in the case of a small underground mine to as much as USD1.4 billion from a large underground operation—and this is without considering a variable pricing structure. Table D.30 provides the order of magnitude estimates of the annual value of mineral sales in the ground for the typical coal mining operations identified through the statistical analysis.

Table D.31 shows the general cost breakup and magnitude of expenditure for items that may be incurred by the "typical" surface coal mining operations identified in Table D.29 from the database of current operations on the African continent.

The typical medium-size surface coal mining operation has a throughput of 6,000 tonnes per day. With an assumed stripping ratio of 20:1, this mine would have annual operating costs (OPEX—mine and mill activities) of approximately USD204.5 million, of which approximately USD23 million

Table D.29: Typical size of African coal mining operations categorized by type (surface or underground). Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

		Small (tonnes/day)	*Q1 (t/d)*	Medium (tonnes/day)	*Q3 (t/d)*	Large (tonnes/day)
Coal	Surface	3,500	*4,586*	6,000	*14,215*	33,500
	Underground	500	*1,111*	3,500	*19,231*	56,500

Table D.30: Order of magnitude gross value of coal in the ground for typical African mining operations average grade and current mineral prices from information available. Source: http://www.visualcapitalist.com/global-gold-mine-and-deposit-rankings-2013, http://www.infomine.com and http://www.kitco.com.

		Small (USD/annum)	Medium (USD/annum)	Large (USD/annum)
Coal (@ $66.69/t)	Surface	84,029,400	144,050,400	804,281,400
	Underground	12,004,200	84,029,400	1,356,474,600

Table D.31: Costing for "typical" African coal mining operations of different sizes and types

	Surface Mine					
	3,500—10.2:1		**6,000—20.2:1**		**33,500—10.2:1**	
Total Annual Mine, Storage, Preparation & Transport OPEX	**$61,354,261**		**$204,481,977**		**$1,286,422,095**	
Supplies and consumables	$7,344,173	12%	$23,000,630	11%	$83,359,699	6%
Labour and equipment operation	$14,564,794	24%	$50,015,923	24%	$185,360,141	14%
Administration	$2,572,560	4%	$7,603,200	4%	$17,820,000	1%
Transport charges	$34,909,381	57%	$116,364,605	57%	$969,705,039	75%
Other	$1,892,074	3%	$7,281,619	4%	$28,557,130	2%
Total Mine, Storage, Preparation & Transport CAPEX	**$96,388,600**		**$254,699,100**		**$1,104,528,000**	
Equipment purchases and installation	$67,719,400	70%	$171,682,100	67%	$772,392,800	70%
Preproduction and site preparation	$4,000,500	4%	$18,079,900	7%	$65,303,300	6%
Facilities and buildings	$8,027,400	8%	$13,838,300	5%	$36,487,800	3%
Engineering & management	$8,990,100	9%	$24,414,000	10%	$108,476,800	10%
Sustaining and working capital	$1,192,600	1%	$6,493,400	3%	$29,530,800	3%
Other	$6,459,600	7%	$20,192,400	8%	$92,338,500	8%

(11% of OPEX) would be spent on supplies and USD7.6 million (4%) on administration. As can be observed in Table D.32 when the supplies component is further subdivided, the major expenditures are on explosives, fuel, electricity and spare parts and lubricants (especially for a small mining operation). While there is minimal opportunity for transfer mispricing in the provision of electricity, the other three components do pose significant risks, and are areas of expenditure that should be understood and scrutinized by the tax administration system.

Because coal is sold in bulk and distances to markets are significant, one can expect transport costs to be high—in this case USD116.4 million (57% of OPEX). For coal, costs associated with labor

Table D.32: Supplies and consumables breakdown for "typical" African surface coal mining operations

Supplies—Surface Mine	**Surface Mine**		
	3,500—10.2:1	**6,000—20.2:1**	**33,500—10.2:1**
Diesel fuel	37%	25%	20%
Electricity	8%	12%	14%
Explosives and reagents	22%	50%	58%
Blasting caps, primers and detonation cord	3%	2%	2%
Drill bits and steel	1%	0%	1%
Spare parts and lubricants	29%	10%	6%

Table D.33: Costing for "typical" African coal mining operations of different sizes and types

	Underground Mine					
	500— C-Adit		**3,500— R&P-Adit**		**56,500— LW-Shaft**	
Total Annual Mine, Storage, Preparation & Transport OPEX	**$25,602,210**		**$125,956,976**		**$489,341,968**	
Supplies and consumables	$6,496,733	25%	$26,067,830	21%	$33,768,000	7%
Labour and equipment operation	$7,438,594	29%	$15,290,323	12%	$52,606,829	11%
Administration	$993,600	4%	$3,182,400	3%	$5,688,000	1%
Transport charges	$9,697,050	38%	$77,576,403	62%	$387,882,016	79%
Other	$956,434	4%	$3,696,019	3%	$8,677,037	2%
Total Mine, Storage, Preparation & Transport CAPEX	**$57,950,300**		**$70,179,400**		**$169,091,500**	
Equipment purchases and installation	$34,725,800	60%	$39,332,000	56%	$98,628,300	58%
Preproduction and site preparation	$7,281,300	13%	$8,017,100	11%	$12,282,100	7%
Facilities and buildings	$4,772,100	8%	$6,294,100	9%	$16,852,500	10%
Engineering & management	$5,895,600	10%	$7,108,700	10%	$18,357,900	11%
Sustaining and working capital	$2,086,700	4%	$5,308,700	8%	$11,559,900	7%
Other	$3,189,800	6%	$4,119,800	6%	$11,772,800	7%

and transport combined make up 81% of OPEX. Although significant, the risk could be managed through comparison with arm's length prices—if labor and transport were provided by associated parties. The other components of OPEX account for only 19% and the effort here should go into tracking and analysis of trends and deviations. The percentages for large surface mines are very different because of the larger scale, where transport alone accounts for 74% of OPEX. When looking at the absolute value of the OPEX for a typical large surface coal mine, it totals approximately USD1.3 billion annually. If these expenses were to be charged at 5% above the typical amount, the reduction in taxes payable would be approximately USD19.5 million per year—assuming a 30% tax rate.

Looking at the initial capital expenditures that would be required for these mines, the actual amounts increase with the size of the operations, but the percentages of CAPEX remain similar and in a narrow range. The component associated with the purchase of equipment and supplies is the highest, accounting for 67–70% of total capital spent. However, as comparable transactions can be found for the majority of equipment purchased by a mining operation, the engineering and management services (second highest at around 10%), potentially pose the next highest risk from a transfer pricing perspective. Again, the effort here should go into tracking and analysis of trends to understand deviations from year to year.

The "typical" underground coal mining operations presented in Table D.33 show that the typical large-size underground coal mining operation has a throughput of 56,500 tonnes per day. If a Longwall mining method is used, this mine would have annual operating costs (mine and mill activities) of approximately USD489 million, of which approximately USD388 million (79% of Total OPEX) will pay for transport because of the very high production rate and bulk transport thereof.

Similar to surface mines, transport, labor and equipment combined dominate OPEX (90%), and if arrangements are not at arm's length, comparative prices are readily available for these inputs. Other components of OPEX are USD33.8 million (7% of OPEX) on supplies and approximately USD5.7 million (1%) on administration. Because of the reduced volumes at smaller mines, transport costs for underground coal mines account for (only) 38% of OPEX.

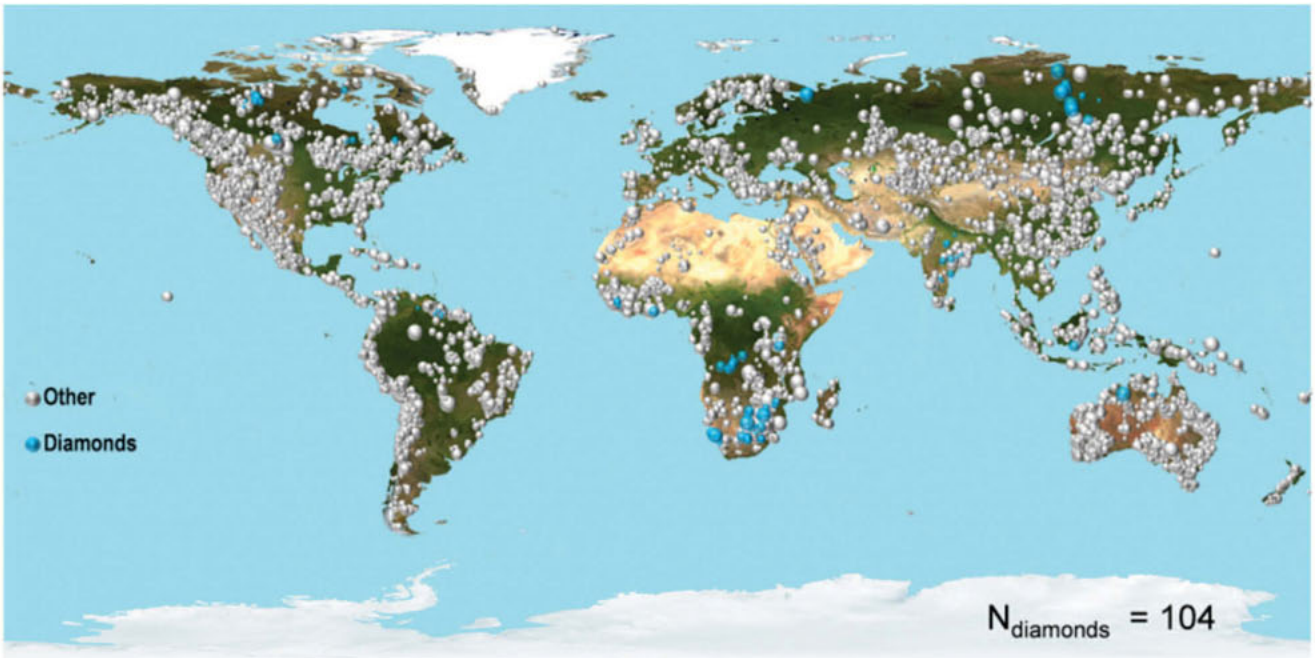
Looking at the initial capital expenditures that would be required for underground coal mines, one observes a similar trend as that for surface mines, i.e., the amounts increase significantly with the scale of the operation, but percentages for capital items are in narrow ranges. Like surface mines, capital on equipment purchases and installation dominates as a category, flagging risk. The risk could be managed by comparative analysis of arm's length prices and annual tracking of trends.

B.3.5 Diamonds

Industry profile: World production and resources

Diamond deposits are typically smaller than those for other minerals due to the relative scarcity of this mineral. Entry barriers range from very low for widespread alluvial deposits, to very high for some operations (e.g., off-shore detrital and deep kimberlite deposits) due to the high capital and technological requirements. As a consequence there is a variety of very different diamond producers in Africa. Such producers typically include few, dominant large producers and multiple small firms as well as large numbers of artisanal producers. Artisanal diamond producers can be of real benefit to the economy when formalized, but can sometimes cause complexity and even conflict when the formal economy is unable to accommodate them appropriately. As can be seen in Figure D.9, diamonds have historically been found in Southern Africa as well as a few other regions around the globe.

Figure D.9: Significant diamond deposits—discovered all years



Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

Table D.34: Top 10 diamond producing countries 2013 with 2009 figures for comparison

Country	2013 (carats)	2009 (carats)
Russia	37,884,140	34,759,400
Botswana	23,187,580	17,734,000
DRC	15,681,985	21,298,458
Australia	11,728,657	15,604,969
Zimbabwe	10,411,817	963,501
Canada	10,561,623	10,946,098
Angola	9,360,470	9,238,271
South Africa	8,143,256	6,139,682
Namibia	1,689,048	1,191,762
Sierra Leone	608,955	400,842

ALROSA (25% of value and 33% of volume) and De Beers (21% of value and 26% of volume) were the two largest diamond producing groups in 2013. Table D.34 shows that the five top producing countries (by volume) in 2013 were Russia, Botswana, Democratic Republic of Congo (DRC), Australia and Zimbabwe. The rapid growth in supply from Zimbabwe is worth noting, as this country recorded major discoveries in recent times. The increase in production was mainly due to growing demand from China and India. China is now the world's second largest consumer of diamond jewelry after the US, with demand growing 18% in 2011.[212]

In terms of inventory, the Statista Portal[213] credits Australia (250 million carats), DRC (150 million carats), Botswana (130 million carats), South Africa (70 million carats) and Russia (40 million carats) with holding the largest diamond reserves worldwide in 2014. All other countries combined account for only 90 million carats in reserves. According to De Beers,[214] current exploration is mostly directed to historically underexplored countries such as Angola, the DRC, Zimbabwe and Arctic Siberia, with current world exploration spent for diamonds estimated at USD1 billion per year—about 50% of the pre-economic crises levels. When looking at the future of the global diamond sector, it is expected that Africa will remain a major player, with Zimbabwe joining the group of major producing countries. As depicted in Figure D.10, Southern Africa has since 2,000 recorded significant diamond finds and a greater proportion of world production is expected to come from the region.

Current African producers: Production size and geographical distribution

The diamond industry represents a significant proportion of mining activities taking place on the African continent, while diamond exploration only accounts for about 5% of total exploration activity. Of the 130 million carats of diamonds produced worldwide in 2013, the top ten African countries by production accounted for almost 70 million carats, making up 54% of global production (Table D.35). This is significant and the continent is expected to maintain its strong supply position in the global market into the future.

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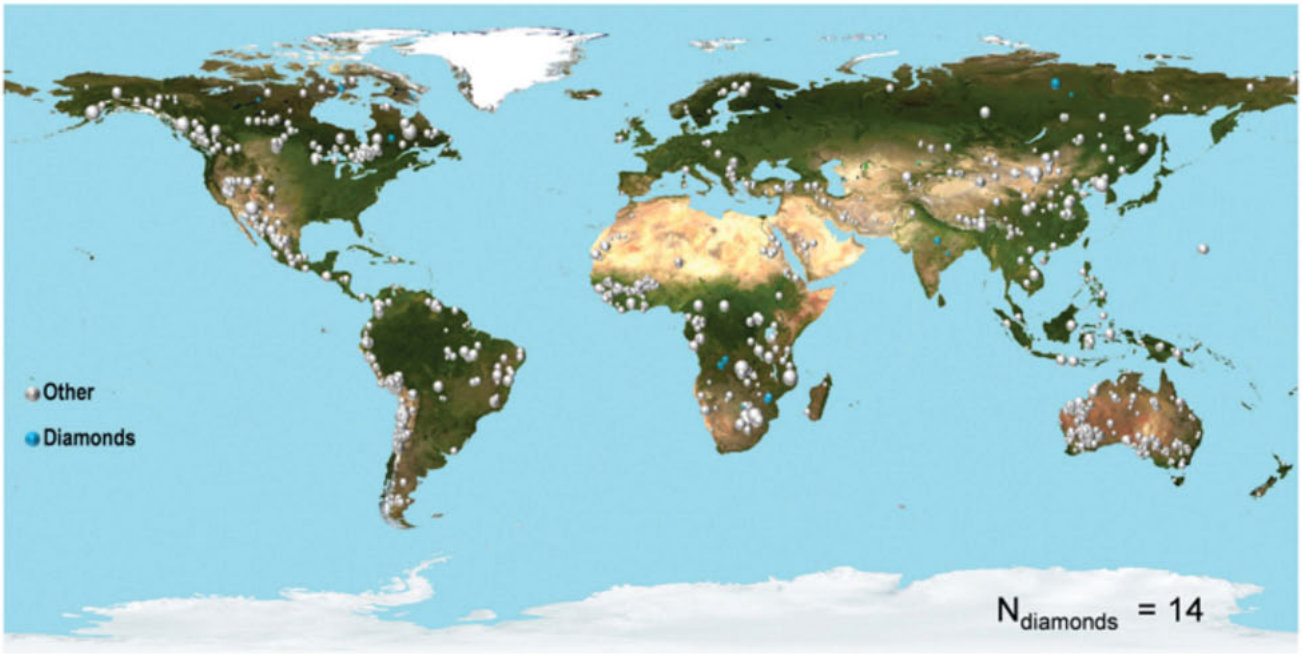
[212]Annual Global Summaries: 2009 and 2013 Production, Exports and KPC counts. Kimberley Process Certification Scheme.

[213]Statista Statistics portal: Countries with the largest diamond reserves as of 2014 (in million carats) http://www.statista.com/statistics/267905/world-diamond-reserves-by-country/ Accessed 15 May 2015.

[214]Diamond Insight Report, 2014. De Beers Group of Companies. Accessed from De Beers website 25 March 2015.

Figure D.10: Significant diamond deposits—discovered since 2000



Note: Bubble size refers to deposit size (SuperGiant, Giant, Major and Moderate)
Source: MinEx Consulting © May 2015

Table D.35: Top 10 Diamond producing countries in Africa—2012

Country	2013 Production (carats)
Botswana	23,187,580
DRC	15,681,985
Zimbabwe	10,411,817
Angola	9,360,470
South Africa	8,143,256
Namibia	1,689,048
Sierra Leone	608,955
Lesotho	414,014
Guinea	202,365
Tanzania	179,633
Total	**69,879,123**

A review of RIU's Register of African Mining shows that currently there are about 41 diamond-producing operations on the African continent, categorized in Table D.36[215] by size of operations and mining method. As shown, the majority of diamond mines in Africa are surface mines (59%), with just under half (48%) of all mines falling into the medium-size category.

Except for Sierra Leone, Table D.36 shows that most of the diamond mining operations[216] are based in the southern region of the African continent, with 11 operations in South Africa (41%), 5 in Botswana (19%) and 3 in each of Namibia and Lesotho. These statistics must be considered with some skepticism, because Table D.35 suggests that there should be more operations in the DRC, Zimbabwe and Angola than Table D.36 indicates. However, as some operations do not report production statistics, they have not been included within the statistical analysis. In addition the informal sector is still largely unaccounted for in African statistical databases and there is evidence of

Table D.36: Geographical distribution of African diamond mining operations. Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

Country	Open Cut			Underground			Surface & Underground[a]			Advanced Study	Expl.
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large		
Angola	–	–	2	–	–	–	–	–	–	–	6
Botswana	–	3	2	–	–	–	–	–	–	2	11
Cameroon	–	–	–	–	–	–	–	–	–	–	1
DRC	–	–	–	–	–	–	–	–	–	–	2
Ghana	–	–	–	–	–	–	–	–	–	–	1
Guinea	–	–	–	–	–	–	–	–	–	2	4
Lesotho	2	–	1	–	–	–	–	–	–	2	2
Morocco	–	–	–	–	–	–	–	–	–	–	1
Mozambique	–	–	–	–	–	–	–	–	–	–	1
Namibia	–	2	–	–	–	–	–	–	1	–	3
Sierra Leone	–	–	–	–	–	–	1	–	–	2	1
South Africa	–	2	–	–	3	1	–	4	1	5	2
Swaziland	–	–	–	–	–	–	–	–	–	1	–
Tanzania	–	1	–	–	–	–	–	–	–	–	4
Zimbabwe	1	–	–	–	–	–	–	–	–	–	–
Total[b]	**3**	**8**	**5**	**–**	**3**	**1**	**1**	**4**	**2**	**14**	**39**

[a]Seven operations that are either in the transition phase that include both Surface and Underground operating components, or utilise non-conventional mining methods (Alluvial, Dredging, etc.) have been included in this table, but are not included in the statistical analysis for Table D.37.

[b]Totals differ slightly from those in Table D.2, as production statistics are unavailable for some mines. As a result, they are not able to be classified by size.

[215]Of the 41 operating mines, only 27 provide production data that allows for their classification by size.

[216]This classification is made by number of operations and not based on annual output.

Table D.37: Typical size of African diamond mining operations categorized by type (surface or underground). Source: Study database compiled primarily using information extracted from RIU's Register of African Mines 2014 and a variety of other publications.

		Small (tonnes/day)	*Q1 (t/d)*	Medium (tonnes/day)	*Q3 (t/d)*	Large (tonnes/day)
Diamond	Surface	1,000	*3,500*	8,000	*16,667*	27,500
	Underground	250	*1,118*	6,000	*12,903*	14,500

large-scale smuggling of diamonds from some jurisdictions to avoid mineral royalties and export duties.

Considering the scale of informal activity in the diamond sector, the current drive by African governments to formalize the artisanal mining sector and the tendency of informal activity to alert large companies to potential significant findings, one can safely assume that the African continent will remain a major supplier of world diamonds for many years to come. A review of RIU's Register of African Mining 2014 shows that there is a reasonable pipeline for diamond mining in Africa, with the number of exploration projects and studies at advanced stage together outnumbering that of producing operations. Considering the relatively small global diamond reserve base, this emphasizes Africa's strong position in the diamond sector. The situation will further improve if one were able to fully account for the impact of the informal sector, which as discussed is significant for diamonds in Africa. Of further interest is that South Africa has the most advanced study stage projects (5), which is probably misleading in light of its declining status as a diamond producing nation. This may be because diamond mining in South Africa tends to be formal, while the informal sector is much more prevalent in the rest of Africa, with the exception of Botswana.

Table D.37 displays the results of this statistical analysis for surface and underground mining operations[217] that are currently in production on the African continent. As expected, production tonnages from surface mines are generally higher than those from underground mines. It is worth noting that there is significant variation in output for diamond mines, where a small surface mine is on average four times larger than a small underground mine, while medium-sized mines produce about the same tonnage irrespective of whether they are surface or underground mines. In the large mines category, the throughput of a typical surface mine is about double that of an underground mine.

Broad revenue and cost considerations for risk analysis and audit prioritization

It stands to reason that mispricing differences between TPs and arm's length prices in the diamond trade is a real possibility when considering the multinational downstream and integrated activities of the major diamond producers. From a BEPS perspective, there is more risk to host countries of under-invoicing of revenue received for rough production than for over-invoicing of expenses. Under-valuation of rough diamonds, particularly of gem quality, is very difficult to control because of the specialized nature of their valuation and can result in significant tax leakages. For instance, on an annualized basis the gross revenue generated by a typical diamond mining operation can range from as little as USD4.8 million in the case of a small underground mine to as much as USD320 million from a large surface operation.[218] A 10% under-invoicing on a large surface mine results in a USD 9.6 million tax loss for the host country annually. Table D.38 provides a complete

[217]Those operations that are composed of a combination of surface and underground operations, or that are in transition from surface to underground, have been removed for the purpose of this analysis so as to avoid skewing the data for operations that may be in a ramp-up or ramp-down phase.

[218]These calculations of gross revenue are based upon a grade of 30 carats per hundred tonnes in a surface mine and 50 carats per hundred tonnes in and underground mine, with a price of USD107.69 per carat.

Table D.38: Order of magnitude gross value of diamond in the ground for typical African mining operations. Source: average grade and current mineral prices from information provided by the Kimberley Process and RIU's Register of African Mining 2014.

		Small (USD/annum)	Medium (USD/annum)	Large (USD/annum)
Diamonds (30cpht @ $107.69/ct)	Surface	11,630,769	93,046,154	319,846,154
Diamonds (50cpht @ $107.69/ct)	Underground	4,846,154	116,307,692	281,076,923

listing of the order of magnitude estimates of the annual value of mineral in the ground for the typical diamond mining operations identified through the statistical analysis.

Although a priority for diamonds, revenues from rough diamond sales are not the only area where transfer mispricing can lead to an erosion of the tax base. These operations also incur substantial expenses of an operational and capital nature. The level of potential risk to the tax base will be dependent upon the nature of the mining operation, as the different characteristics will dictate a different mix of capital and operating expenditures. Table D.39 shows the general cost breakdown and magnitude of expenditure for items that may be incurred by the typical surface diamond mining operation identified in Table D.37.

The typical medium-size surface diamond mining operation has a throughput of 8,000 tonnes per day. With an assumed stripping ratio of 4:1, this mine would have annual operating costs (OPEX—mine and mill activities) of approximately USD43.3 million, of which approximately USD28 million (65% of OPEX) would be spent on labour and equipment operation. Supplies and consumables cost in the order of USD7.3 million (17%). Unlike coal, which is sold on bulk, transport costs for diamond production (high quality but small volume) are insignificant. For diamonds, costs associated with administration and other categories are roughly 10% of OPEX for all types of mines. Most

Table D.39: Costing for "typical" African surface diamond mining operations of different sizes and types

	Surface Mine					
	1000—2:1		**8000—4:1**		**27500—4:1**	
Total Mine Annual OPEX	**$8,164,800**		**$43,315,200**		**$147,807,000**	
Supplies and consumables	$2,779,200	34%	$7,315,200	17%	$24,651,000	17%
Labour and equipment operation	$3,650,400	45%	$28,080,000	65%	$99,792,000	68%
Administration	$993,600	12%	$3,974,400	9%	$9,900,000	7%
Other	$741,600	9%	$3,945,600	9%	$13,464,000	9%
Total Mine CAPEX	**$9,300,500**		**$96,491,400**		**$200,542,000**	
Equipment purchases and installation	$4,234,100	46%	$45,976,600	48%	$102,522,800	51%
Preproduction and site preparation	$972,400	10%	$7,239,800	8%	$12,132,700	6%
Facilities and buildings	$1,354,600	15%	$11,683,700	12%	$21,618,800	11%
Engineering & management	$1,002,400	11%	$12,149,100	13%	$29,999,500	15%
Sustaining and working capital	$980,700	11%	$11,737,300	12%	$17,640,800	9%
Other	$756,300	8%	$7,704,900	8%	$16,627,400	8%

of the OPEX risk could be managed through comparison with arm's length prices. When looking at the absolute value of these components for a typical large surface diamond mine, they total approximately USD147 billion annually. If these expenses were to be charged at 5% above the typical amount, the reduction in taxes payable would be approximately USD2 million per year, which is insignificant considering the risk of under-invoicing.

The initial capital expenditures are much bigger for larger surface diamond operations, but the percentages of CAPEX remain similar and in a narrow range regardless of mine size. The component associated with the purchase of equipment and installation is significant. This category of CAPEX accounts for 46–51% of total capital spent. However, as comparable transactions can be found for the majority of equipment purchased by a mining operation, the engineering and management services (second highest at between 11 and 15%) potentially require more scrutiny from a transfer pricing perspective. The effort here should go into tracking and analyzing trends to understand deviations from year to year.

Figures for typical underground diamond mining operations in Table D.40 show that a typical large mine is expected to have a total OPEX similar to that of a medium-size operation irrespective of differences in their throughputs. This can be explained by the difference in mining methods, whereby sublevel caving typically used in some medium-size mines has higher unit operating costs that are justified by the corresponding lower capital investment required for this mining method. A medium-sized underground diamond mine using a sublevel caving mining method has annual operating costs (mine and mill activities) of approximately USD57.6 million, of which about USD23.3 million (41% of Total OPEX) will pay for labor and equipment operation. As it is the case for surface mines, supplies, consumables, labor and equipment combined dominate OPEX (71%), and comparative prices are generally readily available for these inputs, which makes assessing whether transfer prices are at arm's length relatively easy. It should be noted that administration fees are significantly higher (two to three times) for underground mines compared to surface mines. This is an issue that will require careful scrutiny because of the limited data on relevant

Table D.40: Costing for "typical" African underground diamond mining operations of different sizes and types

	Underground Mine					
	250— SLOS-Adit		**6000— SLC-Adit**		**14500— BC-Shaft**	
Total Mine Annual OPEX	**$3,077,100**		**$57,564,000**		**$56,271,600**	
Supplies and consumables	$530,100	17%	$17,107,200	30%	$4,750,200	8%
Labour and equipment operation	$1,413,900	46%	$23,349,600	41%	$34,660,800	62%
Administration	$853,200	28%	$11,880,000	21%	$11,745,000	21%
Other	$279,900	9%	$5,227,200	9%	$5,115,600	9%
Total Mine CAPEX	**$24,343,900**		**$64,406,900**		**$104,674,400**	
Equipment purchases and installation	$11,872,900	49%	$25,123,700	39%	$28,931,700	28%
Preproduction and site preparation	$2,053,800	8%	$9,198,400	14%	$30,942,100	30%
Facilities and buildings	$4,093,200	17%	$9,087,900	14%	$14,563,000	14%
Engineering & management	$3,063,400	13%	$7,789,000	12%	$9,676,800	9%
Sustaining and working capital	$1,458,600	6%	$6,218,500	10%	$13,117,100	13%
Other	$1,802,000	7%	$4,581,800	7%	$7,443,700	7%

arm's length prices for administration fees, which are often provided by offshore related MNE's subsidiaries or by the head office.

Looking at the initial capital expenditures that would be required for these mines, the component associated with the purchase of equipment and installation is the highest expense. The category where mispricing is the hardest to detect, i.e., specialized engineering and management services, falls in a narrow band of 9–13% of CAPEX.

Appendix C.1

Detailed Listing of Financial Line Items of Information Ideally Required for Profitability Analysis and Ratios Generation and Their Sources

(Modified from the spreadsheet supporting the ATO/OECD's training module 'Transfer Pricing Issues in the Extractive Industries: Case Studies: Background Information, 2013')

PROFIT AND LOSS STATEMENT

Operating revenue

Sales revenue

Gross sales revenue
Less: sales discounts
Net sales revenue

Cost of goods sold

Opening stock
Add: Purchases
Fuel, power and water
Salaries and wages
Contractors
Other expenses
Less: Closing stock
Total cost of goods sold (COGS)

Gross profit

Other operating revenue

Rent revenue
Discount received

Total operating revenue

Operating expenses
General and administration expenses
Corporate office expenses
Fees paid to auditors
Other expenses
Salaries and wages
Contractors
Depreciation and amortisation
Loss on disposal of assets
Net exchange losses
Transport and handling
Lease payments
Royalty expenses
Rent expenses
Repairs & maintenance
Exploration and evaluation (where immediately expensed)
Prototyping
Marketing expenses
All other expenses
Total operating expenses

Operating profit/loss

Nonoperating income
Interest received
Royalties received
Gross dividends received
Net exchange gain
Swap income
Insurance proceeds
Other nonoperating income
Total nonoperating income

Nonoperating expenses
Swap payments
Interest expense
Lease finance charges
Amortised borrowing costs
Total nonoperating expenses

Total expenses

Earnings before interest and tax (EBIT)

Net profit/loss before tax

Taxation
Add: Nondeductible expenses
Other assessable income
Accounting depreciation
Net capital gain

Less: Nonassessable income
Other deductible expenses
Tax depreciation

Taxable income

Before carried forward losses
Current year losses to carry forward
Taxable income
Carried forward losses used in current year
Total losses carried forward
After carried forward losses

Tax paid

Corporate income tax @ applicable % rate
Dividends withholding tax paid
Interest withholding tax paid
Royalty withholding Tax paid
Total tax paid

Effective tax rate

Net profit after tax

STATEMENT OF FINANCIAL POSITION (BALANCE SHEET)

Current assets

Cash and cash equivalents
Trade and other receivables
Inventories (closing stock)
Other financial assets
Current tax assets
Other
Total Current Assets

Noncurrent assets

Trade and other receivables
Other financial assets
Property, plant and equipment
Intangibles
Goodwill
Deferred tax assets
Derivatives
Other
Total noncurrent assets
Total assets

Current Liabilities

Trade and other payables
Interest bearing liabilities
Current tax liabilities
Provisions
Other financial liabilities
Other
Total current liabilities

Noncurrent Liabilities

Trade and other payables
Interest bearing liabilities
Finance lease

Deferred tax liabilities
Provisions
Other financial liabilities
Other
Total noncurrent liabilities
Total liabilities

Net assets

Equity

Contributed equity
Redeemable preference shares
Reserves
Retained profits
Total equity

Other Information

Related party sales revenue
Related party expenditure
Risk free rate of return
Interest rate
Fixed costs
Variable operating costs
Dividend payment
R&D

FINANCIAL RATIOS (ATO/OECD training analytical model)

Ratios

Gross margin = Gross profit/Net sales
Markup ratio = Net sales/COGS
Royalties/sales = Royalty expenses (both local and overseas)/Net sales
Operating profit/sales = (Gross profit – expenses)/Net sales
Operating profit/assets = (Gross profit – expenses)/Total assets
Net profit/assets = Net profit (before tax)/Total assets
Net profit/shareholders' funds
EBIT/sales = Net profit (before tax and interest)/Net sales

Other Ratios

Operating ratio = (COGS + other expenses)/Total assets
Net profit ratio = Net profit (before tax)/Net sales
Berry ratio = Gross profit/Operating expenses
Adjusted berry ratio = Gross profit/(Operating expenses + accounting depreciation)
Operating expense ratios:
  Cost of goods sold/net sales
  Expenses/net sales
Dividend ratio (times earnings) = Operating profit/Annual dividend
Interest ratio
Gearing ratios:
  External liabilities/equity
  Current liabilities/equity
  Long term liabilities/equity
  Interest bearing liabilities/equity

Current ratio = Current assets/Current liabilities
Liquid ratio = (Cash +marketable securities + net account receivable)/Current liabilities
Equity ratio = Total shareholders' equity/Total assets
Cash ratio = (Cash +marketable securities)/Current liabilities
Asset/equity ratios:
  Current assets/equity
  Fixed assets/equity
Return on total assets = Operating profit/Total assets
Return on total equity = Profit after tax/Total equity
Turnover of fixed assets = COGS/Fixed assets
Turnover of total assets = COGS/Average stock
Debtors turnover (average to collect) = Accounts receivable * 365/Net sales
Sales to total assets = Net sales/Average total assets
Average rate of discount on sales = Discount on sales/Total sales

OECD GUIDELINES (Chapter 5) PROFIT LEVEL INDICATORS

Return on assets (ROA) = operating profit/operating assets (normally, only tangible assets)
Return on capital employed (ROCE) = operating profit/capital employed (which usually computes as the total assets minus cash and investments)
Operating margin (OM) = operating profit/sales
Gross margin (GM) = gross profit/sales
Return on total cost (ROTC) = operating profit/total costs
Return on cost of goods sold = gross profit/COGS
Berry ratio = gross profit/operating expenses

Appendix C.2

Factors Influencing Tax Administration Internal Structure to Deal with Transfer Pricing Issues in the Mining Sector

Internal structural and design decisions for tax administrations will be influenced by a range of factors including:

- **Existing internal structure** and design of the relevant tax administration. The most commonly used organizational structures are:
  - **Market based**—This means the tax administration is likely to have a large business, small and medium business and micro business work areas. In the large business area there may be other subspecializations such as financial, energy and mining, and manufacturing industries, as well as a variety of technical specializations.

    International organizations advising countries (e.g., UN/IMF/WBG/OECD) frequently recommend that such **large business units** be set up. An example of a large business unit is that established by the South African Revenue Service (SARS) described in Box C.1. This type of unit can bring much needed focus on MNEs, however, it can lead to the area becoming isolated from the rest of the organization because it is often vertically integrated to include all business functions within the unit. This vertical integration can lead to duplication in the organization and a possible fiefdom culture with a noticeable tendency towards internal promotion.
  - **Tax type**—This means the tax administration is likely to have vertically integrated structures dealing separately with each type of tax (e.g., VAT/Income Tax/Excise, etc.). This type of unit can bring strong focus on the peculiar differences that exist between tax types, because for instance VAT is a transactional tax, whereas income tax is based on aggregated transactions over a period of time.

    Taxpayers often behave differently for different types of taxes, for example, VAT can be treated as a 'pass through' tax, as compared to income tax which is borne by the shareholder, and therefore a greater incentive may exist to avoid or minimize income tax.
  - **Functional**—This means the tax administration is likely to have Advice, Risk and Intelligence, Audit, Litigations, and perhaps Policy work areas that perform these functions across all taxes and markets.

    There may be specialist units within these functional areas, dealing for example with particular industry sectors or particular areas of the law. This functional approach can build capability quickly as it allows for a natural skilling pathway for staff, for example, from simple advice to complex advice, and from simple audits to complex audits.
- **Organizational culture** of the tax administration. There may be historical reasons and preferences for particular structures and there may be commonly acceptable ways for

different sections and/or officers to deal with each other internally. For example, the style of leadership may result in the organization being strongly competitive between units or alternatively to work very cooperatively together for particular outcomes.

- **Business and economic characteristics** and distribution of taxpayer population, as well as the nature of the most common interactions they have with the tax administration.

Appendix C.3
Transfer Pricing Databases

(Modified from the OECD's training module 'Transfer Pricing Issues in the Extractive Industries: Case Studies: Background Information, 2013')

Function/Product	Database	Content
General industry analysis	IBISworld	Australian company reports, USA company reports, ratio analysis, industry reports, company and industry risk scores.
	KOMPASS	Global database
	Several additional databases available. Helpful is also the industry information provided in the credit rating methodologies from Moody's and S&P.	
Commodities (Usually used for CUP analyses)	Bloomberg	Pricing information on traded commodities, financial products, etc. Detailed descriptions of 300,000 companies worldwide with dividend, earnings, shareholder and accounting data. Media information, credit ratings, analysis from brokers and independent research houses. Worldwide bonds, interest rates, etc.
	Platts	Energy and metals information including price assessments & indices (oil, coal, shipping, petrochemical, metals).
	Metal Bulletin	Comprehensive database on base metal, coal, iron and related alloying minerals, minor metals and industrials. Extensive information about related mining companies.

Function/Product	Database	Content
Benchmarking returns for "routine" functions within the value chain. E.g. • Service provision, • Sales services, • Contract manufacturing, • Toll manufacturing, • Engineer services, • Contract R&D, etc. Used for • Gross margin, • Net margin (TNMM), • C+, • Resale price minus, • Routine return in RPS-Analyses (residual profit split), etc. Based on • Whole of entity financials, or • Segmented financials for the specific routine function	ORBIS (Bureau van Dijk)	Information on 147 million listed and unlisted companies worldwide in three modules: • Europe—80M • Americas—40M and • Asia-Pacific—27M Provides a search interface with SIC-Codes, financial screening options, keywords, independence criteria, etc.
	OSIRIS (Bureau van Dijk)	Information on 50,000 global listed companies including European companies.
	ORIANA (Bureau van Dijk)	Comprehensive financial information on 22 million companies in 40 countries in the Asia-Pacific region.
	Company 360 (Dun and Bradstreet)	50,000 leading Australian private and public companies, company financial reports, financial ratios and analysis, structure and shareholders.
	EdgarStat	Online database of listed global company financial information, annual reports. For US listed companies: 10-K, 10-Q, and 8-K SEC filings.
	AMADEUS (Bureau van Dijk)	Pan-Europe companies
	FAME (Bureau van Dijk)	United Kingdom and Irish companies
	ISIS (Bureau van Dijk)	Ratios, ratings and ownership for 11,700 insurance companies around the world.
	KISLINE	South Korea
	Several additional regional and industry specific databases from Bureau van Dijk.	
Royalty & license fees	RoyaltyStat	Royalty rates and licensing agreements worldwide compiled from the United States Securities and Exchange Commission.
	World Intellectual Property Organisation (WIPO)	IP services, valuation and licensing.

(continued)

Function/Product	Database	Content
Debt pricing	Moody's Riskcalc	Credit rating tool.
	Moody's Losscalc	Model to determine loss given default (LGD).
	Bloomberg	(see above)
	Standard and Poors	Credit research relating to companies, industries and market issues including market updates, credit ratings and risk analytics.
	Compustat	North America
	Global Village	Global database usually Latin America & Asia-Pacific
	Thomson Reuters LoanConnector (including Dealscan)	Source for comprehensive, reliable historical deal information on the global loan markets, high yield bond and private placement data covering 110,000 transactions.
	KV RiskCalc	US, UK, Europe, Australia, Asia (credit rating)
	Thomson.One Banker (Thomson Reuters)	Global news, pricing and current consensus estimates, M&A, equity/ loan/bond activity.
	Different packages	Information on deals—M&A, equity issues, bond issues, syndicated loans and project finance.
		Credit analysis module

Appendix C.4
Transfer Pricing Software

There are a number of companies that offer software focused on transfer pricing and claim that its use can make the life of multinational tax managers much easier. Below are some of the leading transfer pricing software packages and links to their providers' websites.

Company	Product Software
Deloitte	Transfer Pricing Architect
KPMG	Interpreter Transfer Pricing Software
Kamakura Corp.	KRM Risk Manager—Transfer Pricing
Oracle	Oracle Transfer Pricing Software (for financial institutions)
Tax Technologies Inc.	Tax Series (Transfer Pricing Software)
EdgarStat LLC	EdgarStat Interactive Transfer Pricing Valuation Database
RoyaltyStat LLC	RoyaltyStat Subscription Database of Royalty Rates and Licensing Agreements (for intangible property transfer pricing)
TP Catalyst (Bureau van Dijk)	Seamlessly locates and analyzes comparable companies and transactions, including IP from BvD's databases, e.g., Amadeus, Orbis, Oriana and Osiris
Thomson Reuters (OneSource)	ONESOURCE Transfer Pricing
ATO/OECD	Excel-based spreadsheet model generating a range of profitability measures and ratios (under development)
TP Expertise	FinApp Suite
Transfer Pricing for Hyperion/ PebbleAge Ltd.	Transfer Pricing for Hyperion
Intra Pricing Solutions	TP-Genie
Alder & Sound	[X] View

Appendix C.5

Examples of Royalty Value Bases Definitions in Western Australian Iron Ore Special Mining Agreements

Iron Ore (Goldsworthy-Nimingarra) Agreement Act 1972

An Act to ratify an agreement relating to the exploration for, and development of, iron ore in certain areas in the Northwest of the State, and for incidental and other purposes.

"f.o.b. revenue" means the price for ore from the mineral lease the subject of any shipment or sale which is payable by the ultimate purchaser or the person smelting the ore to the Joint Venturers or an associated company, less all export duties and export taxes and all costs and charges properly incurred and paid by the Joint Venturers to a third party after the departure of the ship on which the ore is loaded from the Joint Venturers' wharf to the time the same is delivered and accepted by the ultimate purchaser or the person smelting the ore, including—

1. ocean freight;
2. marine insurance;
3. port and handling charges at the port of discharge;
4. costs incurred in delivering the ore from the port of discharge to the ultimate purchaser or the person smelting the ore;
5. all weighing, sampling, assaying, inspection and representation costs at the port of discharge;
6. shipping agency charges;
7. all import taxes by the country of the port of discharge; and
8. such other costs and charges as the Minister may in his discretion consider reasonable in respect of any shipment or sale.

For the purposes of this definition—

a. the expression "export duties and export taxes" shall refer to taxes payable by the Joint Venturers to the Commonwealth directly relating to the export of ore but excluding any State taxes, duties or charges and any taxes, duties or charges levied by the Commonwealth for or on behalf of the State;
b. a cost or charge shall be deemed to be properly incurred if the Minister in his discretion so determines and in making his determination the Minister may have regard to such matters as the parties to and the *bona fide* nature of the transaction, resulting in the cost or charge;

IRON ORE (Marillana Creek) State Agreement Act 1991

"f.o.b. value" means—

i. in the case of iron ore shipped and sold by the Company, the price which is payable for the iron ore by the purchaser thereof to the Company or, where the Minister is not satisfied that the price payable in respect of the iron ore represents a fair and reasonable market value for that iron ore assessed at an arm's length basis, such amount as is agreed or determined, less all export duties and export taxes payable to the Commonwealth on the export of the iron ore and all costs and charges properly incurred and payable by the Company from the time the iron ore shall be placed on ship at the loading port to the time the same is delivered and accepted by the purchaser including—
   1. ocean freight;
   2. marine insurance;
   3. port and handling charges at the port of discharge;
   4. all costs properly incurred in delivering the iron ore from port of discharge to the smelter and evidenced by relevant invoices;
   5. all weighing sampling assaying inspection and representation costs;
   6. all shipping agency charges after loading on and departure of ship from the loading port;
   7. all import taxes by the country of the port of discharge; and
   8. such other costs and charges as the Minister may in his discretion consider reasonable in respect of any shipment or sale;

ii. in all other cases, the deemed f.o.b. value.

For the purpose of subparagraph (i) of this definition, it is acknowledged that the consideration payable in an arm's length transaction for iron ore sold solely for testing purposes may be less than the fair and reasonable market value for that iron ore and in this circumstance where the Minister in his discretion is satisfied such consideration represents the entire consideration payable, the Minister shall be taken to be satisfied that such entire consideration represents the fair and reasonable market value;

Appendix C.6

Information Required for Transfer Pricing Risk Assessment and Audit within the Mining Sector

Information generally required in transfer pricing audits within the mining sector includes:

1. Copy of the formal Transfer Pricing Policy Document setting out all related-company transactions
2. Details of any business restructurings including:
   a. Organizational structures both pre- and post-restructuring if applicable;
   b. Explanations pertaining to restructurings;
   c. Explanations pertaining benefits post restructure;
   d. All legal documentation relating to the restructuring; and
   e. Director Board minutes and tax opinions relating to the restructuring.
3. Tax returns of both local and international related parties
4. Statutory Annual Financial Statements of the foreign related parties to the intra-group transactions (such information may be easily accessible for example if the foreign related parties are controlled foreign companies)
5. MNE's Annual Report (which is generally publicly available) and of individual related parties dealing with the mining subsidiary (which are generally hard to get)
6. Segmented financial information where the related party is involved in distributing various suppliers' products
7. Company registration documents for each of the related parties
8. Agreements between the related parties in the supply chain as well as between related parties and end customers; these may include:
   a. Sale and purchase agreements;
   b. Cession agreements if applicable;
   c. Guarantee agreements;
   d. Agency agreements;
   e. Procurement agreements;
   f. Marketing agreements;
   g. Customer agreements;
   h. Stockpile agreements;
   i. Shipping agreements;
   j. Services agreement;
   k. Royalty agreements; and
   l. Finance agreements.
9. Payments
   a. Provisional and Final Commercial Invoices,
   b. Letters of Credit, and
   c. Tax invoices.

10. Third party customer lists
11. Industry analysis, where some factors to consider may be:
    a. Worldwide suppliers;
    b. Competitor information;
    c. Uses of mineral;
    d. Value in use of the mineral;
    e. Pricing of the mineral and pricing structures applied in the supply chain;
    f. Supply and demand; and
    g. Applicable commodity index, and movement on index.
12. Board Minutes Review—always request to see the originals
    a. Board packs,
    b. Board minutes, and
    c. Information from various internal committees, e.g., the Tax Committee, Executive Committee.
13. Employee information pertaining to each related party within the supply chain:
    a. Number of employees per entity;
    b. Qualifications of relevant employees;
    c. Job descriptions;
    d. Key performance indicators;
    e. Remuneration;
    f. Duration of employment;
    g. Employee secondment; and
    h. Country of residence.
14. Travel information pertaining to each related party within the supply chain:
    a. Travel schedules of all international business travel;
    b. Relevant persons travelling and their designation;
    c. Frequency of travel;
    d. Destination; and
    e. Purpose of travel.
15. Pricing information
    a. Supporting information to be provided by the taxpayer explaining the reason for adopting a particular pricing method.
16. Insurance agreements:
    a. Relevant risk covered,
    b. Duration of cover, and
    c. Extent of cover.
17. Shipping/transport agreements which may include:
    a. Which entity (if separate) performs this function;
    b. Contracts of affreightment;
    c. Chartering agreements;
    d. Shipping service agreements;
    e. Aviation agreements;
    f. Pipelines; and
    g. Inter-group terms.
18. Customs documentation which may include:
    a. Bill of Lading;
    b. Exchange Control Declaration;
    c. Customs Declaration form;
    d. General Sea Waybill; and
    e. Voucher of Correction: Bill of entry export.

19. Financing Information which may include:
    a. Loan agreements;
    b. Hedging agreements;
    c. Cross currency swaps; and
    d. Exchange control documentation.
20. Benchmarking studies performed by taxpayer
21. Perform own benchmarking study
22. Other relevant documents:
    a. Signing Authority Framework per entity with regard to agreements, invoices, etc.

Appendix C.7
Tax Administration Codes of Conduct

Some tax administrations have published codes of conduct as to what taxpayers can expect during engagement with the tax administration. By way of example, the South African Revenue Service has a Service Charter and the IRS has a Taxpayer Bill of Rights. Such practices are important to the preservation of fair and ethical enforcement by a government body and includes inter alia a commitment to:

- High standards of professionalism and ethical behavior;
- Act at all times within the law and give effect to taxpayer's rights;
- Exercise the tax administration's powers and duties in a fair and equitable manner and within the ambit of the law;
- Apply the law consistently, in an unbiased way and impartially;
- Be polite, courteous, helpful and readily accessible in dealings with the MNE, and at all times treat the MNE as a valued client who is entitled to receive the highest standard of service;
- Recognise the MNE's right to access of information excluding that information that is specifically protected by law;
- Good governance and access to mediation;
- Preserve the confidentiality and secrecy of the tax authority's confidential information or taxpayer information as required by any statute that imposes confidentiality obligations.

Appendix C.8

Three Broad Categories of Tactics That May Be Used to Disrupt Transfer Pricing Audits

1. **Deny**—Where the responses of the MNE are aimed at inappropriately convincing the tax administration that:
   - There is no material transfer pricing problem, or
   - That they should not be looked at. Reasons asserted sometimes are based on there being other taxpayers with worse transfer pricing cases and/or issues for the administration to look at and/or that the tax administration is being discriminatory.

   Some MNEs may seek to deflect the focus away from the risks identified by the auditor. Information may be provided on issues of minor importance rather than the material issues that are the focus of the audit. It is important that the auditor stay focused on the material issues and, if necessary, put the minor issues to one side to be looked at later in the audit or addressed on a 'go forward' basis.

   Some MNEs may maintain that the issue is not as important or as big as the auditor suspects or knows it really is. For example, the MNE may say that even if the marketing hub were shifting profits, the tax problem would be minimal as the profits would come within the ambit of the controlled foreign company regime or be comparably taxed in the other jurisdiction. Such claims should be thoroughly investigated by the auditor maintaining appropriate professional skepticism and not just be accepted at face value. If the MNE's claims are found not to be correct, they should be refuted and the examination of the issues should proceed.

   Other things that auditors should be on the lookout for include:
   - Omission of important information or facts that would change the view of the arrangements,
   - Statistics that may be open to manipulation or misrepresentation, or
   - Difficult to understand answers that may be long winded and/or overly technical

   If an auditor has any doubt in the truth of what is presented or said, they should insist that it be backed up with evidence.
2. **Delay**—Where the responses of the MNE may slow the audit process down so that any statutory period of limitation expires or may compromise any adjustment to the tax payable.

   Many MNEs in the mining sector go through restructuring and merger and acquisition activities from time to time and this may make it difficult to locate historical information needed for a transfer pricing audit. Host country MNE officers may also claim that they do not have authority to deal with the request for information and that it needs to be passed up the chain for further instructions. These problems, however, should not be accepted as a reason for noncompliance with the request. The reality of MNE organizational change needs to be factored into compliance activities making it all the more important for risk assessments, audits and accompanying requests for information to be made in a timely way (see section 8.2.4).

   Audits may also be delayed by a late staged request by the MNE for a ruling or other interpretative view. While the request needs to be properly considered, the fact gathering

activities in the audit should proceed in the meantime. Alternative means of resolving the interpretation should also be explored, such as both parties agreeing to move quickly to litigation and determination by a court at the conclusion of the audit. This would be especially suitable if a ruling or interpretation could not be provided quickly as may frequently be the case for transfer pricing interpretative matters. There is a risk that the internal workings of the tax administration can be disrupted by audit stage ruling requests if it leads to competing pressures between their advice/rulings and audit areas.

Experience has shown that one of the most common reasons for mining transfer pricing audits to be slowed down is the delay in auditors getting the information they need from MNEs. In recent years it has become more common for auditors to informally request information rather than make a formal request under legislative provisions. Some MNEs prefer informal requests as it minimizes the risk of penalties (which are sensitive issues for MNEs) that may come with formal requests. Formal requests may also be interpreted narrowly by MNEs with the risk that the auditor will not get the information they were expecting. There is some merit to these positions and it is suggested that the auditor should discuss with the MNE the required information and documents that it needs to better understand what may be available and when. In practice there have been cases where years have gone past with some information being provided while other important information is not. Each delay rarely seems individually unreasonable, but collectively they can significantly impact on the time taken and resources used in the audit. Good audit practice means outstanding informal information requests should be crystallized into formal requests from time-to-time. Even with formal requests, significant delays can occur where the MNE requests, and is granted, repeated extensions of time to provide the information. Reasons for delay include inadequate MNE resources or officers taking leave. It is suggested these are matters that should be managed by the MNE and not exceptional circumstances which would warrant further extensions of time.

3. **Defeat**—Occasionally action is taken that risks the cessation of a transfer pricing audit and adjustment to the tax payable.

   Occasionally actions are taken of such a magnitude that they threaten individual tax officers, the tax administration as an organization or even the economy of the country. These may include, for example, threat of legal action against an auditor, threats that a mine will be closed down or that functions or entities will abandon the jurisdiction.

   When faced with such a threat it is important to understand what can actually be done in the circumstances. For example, a quick check with legal counsel may show that there is no case if legal boundaries have not been stepped over. It is also important to keep lines of communication open by briefing relevant stakeholders, such as senior tax and other government officials.

While tax administrations generally cannot publicly disclose information about particular taxpayers, they can disclose broad information. It is important that tax administrations let the public know what they are faced with when they are dealing with the major transfer pricing issues. This may be done, for example, in the tax administrations annual report, through media releases or during parliamentary enquiries or hearings. Public disclosure may prevent or clear up potentially ruinous media articles and also garner appropriate support from the community for the difficult work of dealing with transfer pricing in the important mining sector.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