

## Valuing Assets in Extractive Industries

Alexander Lopatnikov, ASA, RICS



Extractive industries showcase for an appraiser the importance of understanding the market, composition of assets of a mine, or oil and gas deposit, and their economic contribution to value of the project, or company they are part of. A brief introduction to valuation in extractive industries provided in the following sections addresses four major topics illustrated using mining industry as an example.

- *What is special about extractive activities*
- *Unit of valuation in extractive industries*
- *Challenges in valuing a mineral company*
- *Valuation best practices and international valuation standards for extractive industries*

The growing interest in valuation of extractive industries assets in recent years coincided with a so called golden age of commodities, largely driven by an unprecedented growth of China's economy, the world's largest producer and consumer of metals.

For appraisers, assets of extractive industries companies may be challenging to value due to their specific attributes and the fact that analysis of these assets involves use of methods from various valuation disciplines, and requires specific industry expertise. Interestingly, all new topics added to the latest 2011 edition of the authoritative MTS book<sup>1</sup>, are very relevant for valuation of assets in extractive industries, including valuation of process plants, appraising assets in groups, valuation for financial reporting, cost segregation studies, and international valuations. This breadth of knowledge and competencies required to value tangible assets of companies in extractive industries is reflected in the unit of valuation typically used by the mining industry - mineral asset<sup>2</sup>.

What is special about extractive industries may be seen by simply looking at their key investment attributes. Mineral properties evidence: global dislocation of mining assets and their consumers; typically owned by international investors; they are subject to specific regulation as host countries require a fair level of mineral rent; and, what could be appreciated by plant and machinery appraisers, they are very capital intensive and are subject to market risks, in other words change in value due to external factors, of which commodity prices are among most significant ones.

Another important consideration when analyzing mining industry assets is risk profile of projects in the industry that changes as mining project evolves from a prospect, to an exploration project, to a resource property, to an undeveloped reserves property, to a built and producing mine. During early stages such project is primarily a speculative undertaking with most costs representing intangible or information assets. Whereas at later stages it is primarily an indivisible combination of tangible assets, including plant and machinery, structures, mine development costs and value attributable to mineral reserves. Assigning values to individual items of plant and machinery for a developed and producing mine is essentially an allocation of value of a mine to specific elements, primarily required for purposes of financial reporting, or asset management.

It is worth nothing that unlike an industrial manufacturing plant, a mine, or an oil and gas deposit earns income by depleting (or liquidating) their core tangible asset, e.g. its mineral reserves. It is also important to remember that reserves estimates are not

“Mineral Assets means all property including but not limited to real property, intellectual property, mining and exploration tenements held or acquired in connection with the exploration of, the development of and the production from those tenements together with all plant, equipment and infrastructure owned or acquired for the development, extraction and processing of minerals in connection with those tenements”

Valmin

constant, and are changing depending on expected commodity prices. This makes reserves component of the tangible assets value of a mine to be more volatile than value of fixed assets in other asset heavy industries, say utilities.

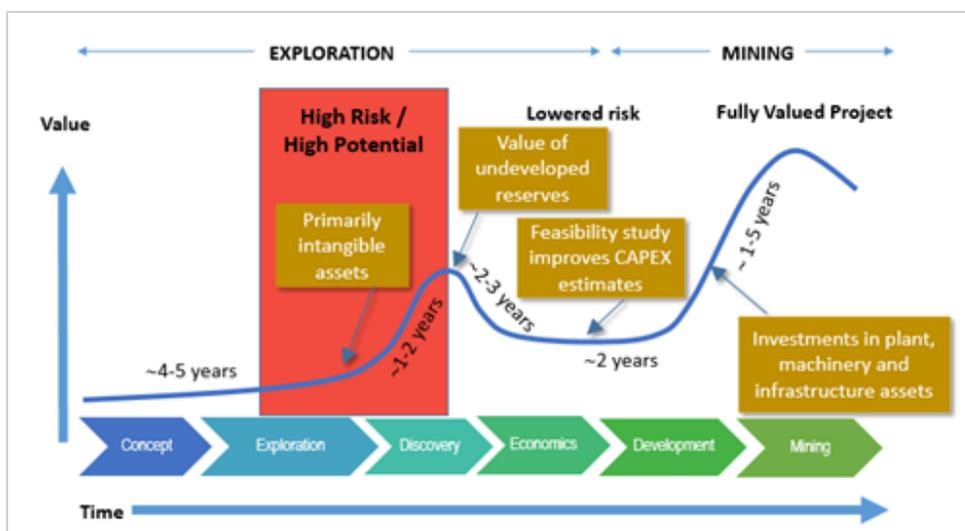
Any valuation due diligence starts with a question of what a mining company consists of? It generally will have all asset classes appraisers typically consider: land, buildings and structures, plant and machinery, communication and office equipment. There may also be some intangible assets, typically

related to exploration activities, such as maps, surveys, logs, drawings, samples, cores, packages of data on prospects or projects, and other costs related to unproved properties. At the end of mine's life its mineral assets turn into liability related to closure and site remediation costs. Financial reporting in extractive activities require both such obligations, called asset retirement obligations, or ARO, and a counterbalancing asset to be recognized and accounted.

Many companies report tangible assets of a mine as one mining asset, but most also separately show value of plant and machinery assets, primarily for accounting or asset management purposes. Most plant and machinery assets used by mining companies are purpose built to produce specific commodity in a remote location. This implies that plant and machinery delivered to the site would have no alternative use value (other than some pieces of equipment and vehicles, that could have

some secondary market). A debate on whether value of mineral rights is an intangible, or tangible asset has been settled by Financial Accounting Standards Board, or FASB, which instructed that for accounting purposes they should be considered tangible assets<sup>3</sup>.

The asset that is very rarely seen on a mining company's balance sheet is goodwill. Although there is no explicit prohibition to reporting goodwill in extractive industries, it is generally believed not to be present at the level of a mine, or be immaterial. The logic may be understood by analogy with real estate properties, which derive value from unique location, and supply and demand situation, rather than some going concern element, or unique synergies of several assets that are traditionally captured by goodwill. In those very rare instances were companies reported large goodwill as a result of acquisitions these were typically followed by write-offs of goodwill in subsequent reporting periods. One will often find it explained by external factors, i.e. deterioration of market conditions, price corrections and costs inflation. However, in no small part it is a result of incorrect valuations and exuberant optimism of buyers often resulting in overpayments. Kinross Gold acquisition of Red Back in 2010



A rare and instructive example of significant goodwill reported in a mining acquisition. All goodwill was written off in just two years after the purchase.

Asset	2010 (acquisition)
Cash and cash equivalents	\$742.6
Accounts receivable and other assets	\$27.0
Inventories	\$115.2
PPE (including mineral interests)	\$1,765.8
Accounts payable and accrued liabilities	\$(103.4)
Future income and mining tax liabilities	\$(311.5)
Other long-term liabilities	\$(34.3)
Non-controlling interest	\$(3.9)
<b>Goodwill</b>	<b>\$5,161.1</b>
<b>Total purchase price</b>	<b>\$ 7,358.6</b>

Source: Kinross Gold Annual Report 2011

which resulted in recognition and subsequent write-off of some \$5bn of goodwill well explains reluctance of the extractive industries to consider goodwill a relevant element of value of a mineral asset.

That said, the fact that extractive industries are dominated by complex and specialized assets, as well as their endemic cyclicality means that extensive risk-return analysis is mandatory in order to understand value of their assets. In appraisers' parlance this means these assets are prone to functional and economic obsolescence. Where and when this is the case, it brings an interesting and sometimes confusing question - what class of assets the related economic obsolescence loss, if present, should be applied? Or more specifically, should value of the mineral reserves be adjusted before any loss is allocated to plant and machinery assets?

Since extractive industries are special and issues confronting appraisers are many, it may be expected that there have to be special standards to guide valuation in extractive industries? Unfortunately, there are none provided by either ASA, or IVSC (International Valuation Standards Council). Some may remember that from 2005 until 2011 IVSs included, what we believe was a quite meaningful Guidance Note #14 "Valuation of Properties in the Extractive industries". However, it was later removed from IVS (International Valuation Standards) to be improved and updated by a group of international experts<sup>4</sup>, including the author of this publication. Sadly, subsequent changes in IVS and discontinuation of extractive industries project by International Accounting Standards Boards or IASB, resulted in a situation where instead of possibly an imperfect guidance, appraisers now have no guidance at all developed by the international valuation industry.

Absent international valuation standards produced by IVSC most practitioners use or refer to the mining standards developed in Australia, Canada and South Africa, known as Valmin<sup>5</sup>, Cimval<sup>6</sup> and Samval<sup>7</sup>, respectively. A cautionary note for an appraiser of plant and machinery – these industry specific standards have been largely developed by geologists, so they may not be fully consistent with the International Valuation Standards, USPAP, or financial reporting standards, such as US GAAP, or IFRS (International Financial Reporting Standards). The most controversial to many valuers is, so called, technical value - an unobservable and subjective indication that these standards consider as a major basis of value.

At the same time, it goes without saying that every mining valuation is reliant on resources, or reserves statements prepared by a competent person, a geologist, in accordance with some national or internationally recognized code, such as JORC<sup>8</sup>, NI43-101<sup>9</sup>, or Samrec<sup>10</sup>. Appraisers undertaking valuation of assets in extractive industries need to understand the requirements of the above reporting codes, the definitions used, including the difference between exploration results, resources and reserves.

With their remote location and lack of alternative use most and often all of plant and machinery deployed at a mine are typically considered specialized assets. In such situations the appraiser often relies on historical costs and data from feasibility studies, or project design documentation. These costs however need to be reviewed critically and require additional due diligence. A common belief of the mining industry (as well as many other asset heavy industries) that feasibility studies are a good proxy of project replacement costs is unfortunately not supported by evidence with many mining projects facing significant time and budget overruns.

### Components of the Cost Overrun of a Mining Project

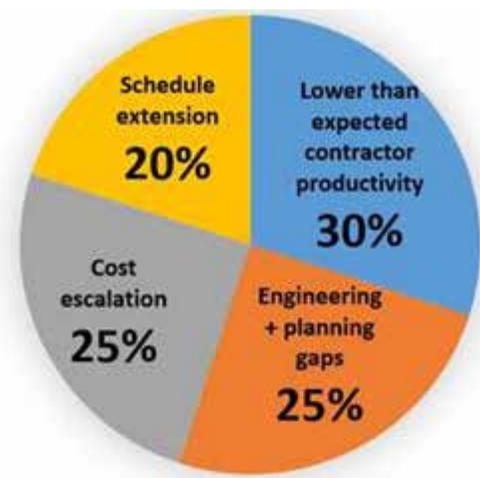
Evolution of cost estimates for Pascua-Lama Project

2001 - \$950 million (initial estimate)

2009 - \$3bn (go ahead decision was made)

2013 - \$8bn-\$8.5bn (including 25% contingency)

The key factors contributing to the capital cost increase:



Source: Barrick-2012-Second-Quarter-Report

Location and access differences, geological and mining peculiarities, as well as other salient attributes of mining projects make their comparison extremely difficult, which has long been recognized in the industry often claiming that no two mines are similar.

When reviewing replacement costs of a mining project an appraiser should also mind significant difference in parameters of specific equipment, its manufacturer and origin, as well as currency the costs are nominated in. It would not be unusual to see a large difference in costs for what may seem very similar mining equipment provided by manufacturers from different countries. There is also a significant impact on the project's costs of the local currency exchange rate to the US dollar, which in major mining countries tends to correlate with the price of commodity produced in and exported from that country. The latter includes currencies of not only emerging economies, but currencies of developed countries with a significant mining sector, such as Australia, or Canada.

In most cases a mine could be considered as a separate business, or cash generating unit (or CGU – terminology widely used in IFRS), it would not be unusual to see several mines delivering run of mine to a common beneficiation plant, or a mill owned and operated by an unrelated third party. When the industry enters a downturn phase of the economic cycle, estimation and allocation of economic obsolescence to mine and mill may become tricky and will require professional judgement and industry expertise.

## Conclusion

This very brief introduction was intended to give a feel of complexity and challenges related to valuation of assets in extractive industries, as well as the need to promote best practices and develop valuation guidance for the industry. For further information, interested appraisers are advised to refer to various publications which discuss numerous specific questions related to valuation of mining and oil and gas companies.

## About the Author

Alexander Lopatnikov ASA, RICS is a managing director of American Appraisal in Russia and the CIS focused at providing valuation opinion and advisory services to publicly listed and private mining companies.

Mr. Lopatnikov is a frequent speaker at international conferences. His recent speeches and publications addressed emerging issues in mineral economics, mining finance, international valuation and reporting standards for extractive activities.

He is a member of the group of international experts developing international valuation standard for extractive industries and the groups that developed various guidance notes for International Valuation Standards Committee (IVSC) and RICS.

He is also a member of ASA, RICS, and a deputy chairman of the Mineral Economics chapter of the Russian Natural Resources Experts Association (OERN).

<sup>1</sup>American Society of Appraisers (2011). Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets.

<sup>2</sup>Valmin is a set of valuation standards for mineral and petroleum assets developed in Australia and used in many other countries.

<sup>3</sup><http://www.fasb.org/cs/BlobServer?blobkey=id&blobnocache=true&blobwhere=1175820903901&blobheader=application/pdf&blobcol=urldata&blobtable=MungoBlobs>

<sup>4</sup><http://www.valmin.org/code2015.asp>

<sup>5</sup>[http://web.cim.org/standards/documents/Block487\\_Doc69.pdf](http://web.cim.org/standards/documents/Block487_Doc69.pdf)

<sup>6</sup><http://www.samcode.co.za/codes/category/8-reporting-codes>

<sup>7</sup>[http://www.jorc.org/docs/JORC\\_code\\_2012.pdf](http://www.jorc.org/docs/JORC_code_2012.pdf)

<sup>8</sup><http://web.cim.org/standards/MenuPage.cfm?sections=177,181&menu=229>

<sup>9</sup><http://www.samcode.co.za/codes?download=120:10082016-samrec>