



## **Applying Business Valuation Techniques to Determine Economic Obsolescence of Real Property and Personal Property Assets for the Purpose of Financial Reporting in Europe**

### **Overview**

Revaluation of assets for financial reporting in compliance with IFRS (International Financial Reporting Standards) is an important market for European appraisers. As USGAAP continues to converge to IFRS, it is expected that revaluation of assets for financial reporting will increase in the United States. This paper addresses the challenge of applying business valuation techniques and procedures to determine economic obsolescence of real and personal property assets (aka ‘fixed assets’) in compliance with IFRS using examples from European businesses.

### **Introduction**

An integral part of the auditing process, and a joint responsibility of the firm and its auditors, is to ensure that all tangible and intangible assets are reported in the company’s financial statements and maintained in its accounting records at an accurate fair value<sup>1</sup>. It is the responsibility of the appraiser to ensure that the Appraisal Report is prepared in full compliance with the requirements of IVS (International Valuation Standards) and IFRS, and that the Report contains sufficient data, information, calculation and analysis to render the valuation conclusion for each asset, reasonable, defensible and reproducible.

This article looks specifically at fixed assets. One particularly challenging aspect of fixed asset valuation is the application of business valuation (BV) techniques and procedures to determine economic obsolescence of individual assets (e.g. a building) or a group of similar assets (e.g. all buildings) or asset complexes – known as ‘cash generating units’ or CGU’s (the focus of this article).

### **Cash Generating Units**

A CGU is defined as “the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets”<sup>2</sup>. A company can be composed of a single CGU or a number of CGU’s. For example, a vertically integrated firm in the oil industry could have several hundred CGU’s, one for each oil deposit. A manufacturing plant may have separate CGU’s for each of its separate production lines, and so on.

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<sup>1</sup> For a definition and discussion of Fair Value see <http://eifrs.ifrs.org/eifrs/bnstandards/en/2014/ifrs13.pdf>

<sup>2</sup> IAS 36.6, Impairment of Assets, Definitions. See e.g. <http://www.iasplus.com/en/standards/ias/ias36> for an overview and summary of this standard. All IFRS and IAS standards can be found in full through <http://www.ifrs.org>



In some countries, (e.g. low income or emerging market countries) companies may have accounting systems that recognize only one CGU, requiring the accounting system to be modified so that the structure of accounting will more accurately reflect the structure of the company. It is often necessary for appraisers to work with a company and its auditors to determine how many CGU's can be accurately identified given the current system.

One challenge with valuation of assets within CGU's is how to allocate assets that may be in joint use by more than one CGU. A factory may have separate CGU's for each production line as well as shared assets for energy distribution such as a boiler house for heat or transformer power station for electricity. Another challenge concerns the proper allocation of administrative and other costs (e.g. sales or corporate overhead costs) that are shared between CGU's.

### **Determining Economic Obsolescence Using the Income Approach**

Fixed assets combined in a CGU exist for the purpose of generating adequate profitability, by which is meant that the sum of the CGU's risk-adjusted (discounted) annual net operating income (the 'value in use'<sup>3</sup> of the assets) exceeds the combined value of the assets as recorded in the company's accounting records, which are based on an appraisal of the Depreciated Replacement Cost (DRC) of each asset (as of a certain date) with allowance made for two forms of depreciation - physical and and/or functional depreciation.

Value in Use is determined by application of the income approach based on modified business valuation techniques and procedures. It is important to stress that application of the income approach to determine value in use of assets in any particular CGU (or an entire company valued as one CGU) *is not the same concept as business valuation*. Although the income approach for value in use relies upon similar techniques and procedures as BV, the assumptions made and the economic meaning of the results are entirely different; moreover the purpose of valuation is entirely different. The purpose of BV is to determine the value of a business whereas the purpose of determining value in use of assets in a CGU is to determine if these assets are generating net operating income that exceeds the DRC value of these assets. If value in use of assets is less than the total DRC value of assets, then profitability is deemed insufficient and these assets are recognized as being 'impaired'. In this case, the DRC values of assets are reduced by an amount that reflects the insufficient profitability (economic obsolescence) and recognized as an impairment loss.

Certain restrictive assumptions are made when using the income approach to determine value in use, two of the most important being (1) that profitability is based on using only existing assets and cannot include any additions to the asset base; (2) capital investment

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<sup>3</sup> For IAS/IFRS definitions of all terminology relevant to IAS 36 Asset Impairment, see *ibid*



is restricted to only that required to maintain the capacity of existing assets and cannot include modifications that increase asset capacity.

### **Allocating Economic Obsolescence/Impairment Losses to the Value of Assets**

If value in use for a single CGU is less than the sum of DRC of the assets comprising the CGU and the difference is recognized as asset impairment (economic obsolescence), the question then arises as to how to allocate these impairment losses among the assets comprising the CGU. IFRS does not include a directive concerning how impairment losses are to be allocated; it is an accounting policy decision taken by a company in consultation with its auditors working with the appraisers. Two opinions are prevalent: (1) losses can be allocated according to the relative value of each asset based on the sum of DRC value for all assets in the CGU: e.g. a single asset representing 15% of total DRC asset value would be allocated 15% of the total impairment loss, or (2) Identify the assets that are the main cause of the economic obsolescence and allocate losses mostly to those assets: e.g. if a certain piece of equipment has a capacity to operate at 100 hours per week but is only used 50 hours per week and all other assets are utilized at capacity, then the underutilized asset would be allocated most of the loss. A more complex example is a company with three CGU's but sharing common infrastructural assets. Economic obsolescence in, for example, one CGU would not only reduce the DRC value of that CGU's assets but would also reduce the DRC value of the common infrastructure assets; the reduction amount would depend on the relative size of that CGU's DRC value of assets and the amount of economic obsolescence in that CGU.

Another example of an allocation challenge is a branch office of a bank – a CGU which is composed of an office with a clearly identifiable market value and a group of specialized assets such as a safe, security systems and specialized bank operating systems. If value in use for this CGU is less than the market value of the building plus the DRC value of specialized assets, then the impairment loss is applied *only* to the specialized assets. No impairment loss is allocated to the building because it has market value. Therefore, if market value of the building is \$100 and DRC value of specialized assets is \$20 (\$120 in total) and value in use is \$80, the DRC value of specialized assets is reduced to \$0 but the *market value* of the building remains at \$100, with no impairment loss allocated to it.

### **Challenges to Determining Value in Use in Various Countries**

Europe is composed of States that are high income, middle income and low income and States with highly developed market economies and those best characterized as emerging market economies. In the lower income and emerging market economies, application of the income approach for purpose of determining value in use for CGU's is challenging owing to a general deficiency in quantity and quality of data and information. For example, it is more difficult to determine an appropriate discount rate (owing to inadequate equity markets, the need to use proxies based on other countries, or interest rate volatility) and it is more difficult to forecast annual cost and revenue (owing to currency instability or inflationary expectations).



## Conclusions

Valuation of fixed assets for the purpose of financial reporting according to IFRS requires application of the income approach using modified BV techniques and procedures to estimate value in use for CGU's in order to identify and, if required, to allocate economic obsolescence (insufficient profitability or impairment) to the DRC value of individual assets within a CGU. Various challenges exist to determining value in use and allocating any impairment losses.

## About the Author

Ms. Simonova, President of IRE (Ukraine) L.L.C. is a Certified Ukrainian Appraiser and a founding member of the Ukrainian Society of Appraisers and Chair of the Methodology and Standards Committee. She is also a Senior Accredited Member of the American Society of Appraisers (ASA) and Vice President for Ukraine in the ASA European chapter. She holds a Candidate of Technical Sciences (Ph.D.) degree in Civil Engineering. She specializes in fixed asset appraisal for international audits and business valuations of companies and investment projects. During the last twenty years she has personally worked on over large 200 appraisal projects.

Ms. Simonova regularly teaches professional seminars, drafts methodological procedures and advises the Ukrainian Government on regulations and the development of the appraisal industry in Ukraine. She is the author of numerous articles and reports, for publication in Ukraine and presentation at international conferences, on problems of valuation in transitional economies, including the article in The Appraisal Journal, Spring 2009 - "Market Prices and Capitalization Rates for Commercial Real Estate in Ukraine"; and the Ukrainian chapter in the book "Real Estate Valuation in Global Markets", Second Edition, published by the Appraisal Institute. She was co-developer of two advanced international appraisal courses developed for the U.S. Appraisal Institute: (1) Valuation in Challenging Markets and (2) International Financial Reporting Standards for the Real Property Appraiser.

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