CHAPTER 3

**MEASUREMENT**

## CHAPTER OBJECTIVES

How financial statement elements are measured affects income and key ratios significantly. Therefore, it is important to understand how companies measure and record transactions. Chapter 3 presents the tools and techniques that will help students understand how financial statement elements are measured.

## LEARNING OBJECTIVES

1. Use valuation techniques to measure financial statement elements.

2. Use IFRS 13 to measure fair value.

3. Understand and apply present value concepts.

4. Identify differences in accounting between ASPE and IFRS, and what changes are expected in the near future.

**CHAPTER REVIEW**

**Measuring Financial Statement Elements**

**Valuation Techniques**

1. **Income models** convert future amounts to current amounts using present value concepts. Inputs to income models include estimates of cash flows, the time value of money, and uncertainty or risk, which is reflected in either the cash flow estimates or the discount rate, but usually not both. The **discounted cash flow model** has two possible approaches: the traditional approach, sometimes referred to as the discount rate adjustment technique, in which the discount rate reflects all risks in the cash flows but the cash flows are assumed to be certain; and the expected cash flow approach, in which a risk-free discount rate is used to discount cash flows which have been adjusted for uncertainty.

**Market models** use prices and other information generated from market transactions, such as companies’ earnings multiples.

2. **Value-in-use** is an entity-specific measure that values assets based on how the entity plans to use them. A drawback of this technique is that that a company may at any point during an asset’s life change the way an asset is being used. This differs from an asset’s fair value, which is what a potential buyer in the market might pay to obtain it (and perhaps use the asset differently than the company currently using it).

3. Companies are required to determine at regular intervals whether assets have been impaired in value. Under IFRS, an asset is impaired if its carrying value on the statement of financial position is greater than its recoverable amount. The recoverable amount is the greater of the asset’s fair value less cost of disposal and its value-in-use. Both fair value and value-in-use can be determined using present value techniques.

4. A significant part of accounting is measurement. As so many judgements are involved with measurement, IAS 2 requires extensive note disclosure of sources of measurement uncertainty and accounting policies used. Such disclosures include but are not limited to assumptions made, sensitivity analyses, the range of possible outcomes, and any changes in assumptions from prior periods.

**Measuring Fair Value Using IFRS 13**

5. In order to measure fair value, an entity must determine (1) the item being measured; (2) how the item would be or could be used by market participants; (3) the market that the item would be (or was) bought and sold in; (4) if the model is being used to measure fair value, which model it is.

Determining how the item would be or could be used by market participants involves determining its **highest and best use**. This considers all possible uses that are physically possible, legally permitted, and financially feasible, regardless of how the asset is actually being used currently. In practice, however, current use is by default assumed to be highest and best, unless there is specific evidence otherwise.

**Valuation Technique/Model:**

In most cases, a liquid market for the item being measured will be available and this would best represent fair value. One example would be common shares that trade on the TSX. This would provide the best evidence of fair value. In other cases, however, a **valuation technique** or **model** would be used to value the item. Any time that pure market values are not used, you are essentially estimating the value using a model. Examples of models were included in Section 1. One additional model that can be used is known as the **cost model.** The cost model attempts to reflect the amount that would be required to replace the asset’s service capacity. The cost model is used to value older non-financial assets where there is no longer a market for the assets, perhaps because it is obsolete.

Estimating fair value using models introduces measurement uncertainty. IFRS 13 attempts to offset this by using good-quality input information. Inputs are classified into three categories based on their quality. Level 1 inputs reflect quoted market prices for identical assets or liabilities in active markets and are therefore easily observable and least subjective. Level 2 inputs are not directly observable for the items in question but can be determined indirectly from similar assets and liabilities. Level 3 inputs are not observable because no markets exist and are most subjective, and require more detailed disclosure.

**Present Value Concepts**

6. Time value concepts are widely used when preparing financial statements under both IFRS and ASPE. It is important to have an understanding of how to do complex measurement calculations and how the effects of time value concepts are incorporated into financial statement measurements. When money is borrowed or invested, interest is usually paid. This section touches on the different tools available for doing these present value calculations, including formulas, present value tables, calculators, and spreadsheets.

In all cases, three variables are involved; the **principal** amount borrowed or invested, the **interest rate**, usually stated as an annual percentage of the outstanding principal; and the **time or number of periods** (in years or fractions thereof) that the principal remains outstanding.

The dollar amount of interest will be larger with larger principal amounts, higher interest rates, and/or longer time periods.

**Differences in Accounting between ASPE and IFRS**

7. Financial statements prepared under ASPE do not include Other Comprehensive Income (OCI), Accumulated Other Comprehensive Income (AOCI) and Revaluation Surplus (OCI) accounts.

The main difference in the accounting for measurement issues is that IFRS has a well-developed framework for measuring fair values, whereas ASPE does not. Under IFRS, most of the guidance is in IFRS 13, which provides a standardized definition and guidance.

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**LECTURE OUTLINE**

### 1. Valuation Techniques to Measure Financial Statement Elements.

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| **TEACHING TIP**  Use **Illustration 3-1** to demonstrate examples of the three measurement categorizations.  Emphasize that there are many techniques that may be used to measure value. Two common types of valuation techniques are:  (1) Market Models – uses prices and other information generated from market transactions involving identical or similar transactions.  (2) Income Models – convert future amounts (such as future cash flows to be generated by an asset) to current amounts (that is, amounts adjusted for the time value of money). |

### 2. Differences in Accounting Between ASPE and IFRS

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| **TEACHING TIP**  Use **Illustration 3-2** to demonstrate major differences between the accounting standards under IFRS and ASPE regarding the measurement of fair values.  Emphasize that often several differences exist between ASPE and IFRS and an understanding of these differences is important.  Emphasize further that the IASB has issued a revised conceptual framework. This conceptual framework has considerably increased coverage regarding measurement issues. |

## ILLUSTRATION 3-1

## USE VALUATION TECHNIQUES TO MEASURE FINANCIAL STATEMENT ELEMENTS

|  |  |  |
| --- | --- | --- |
| **Cost-based measures (for example, historical cost)** | **Hybrid measures (for example, those that have some attributes of cost-based and current value)** | **Current value measures (for example, fair value measures)** |
| Property, plant, and equipment carried at cost or net book value (depreciated cost) | Impaired property, plant, and equipment measured at the recoverable amount (higher of the value in use and fair value less costs of disposal) (under IAS 36) | Financial instruments including investments carried at fair value (under IFRS 9) |
| Financial instruments carried at cost or amortized cost using the effective interest or straight-line methods to amortize premiums and discounts | Inventory measured at the lower of cost and net realizable value (under ASPE 3031 and IAS 2) | Biological assets (IAS 41) |
| Inventory using various cost flow assumptions, such as weighted average and FIFO | Impaired notes receivable measured using management best estimates of revised cash flows discounted at the original historical discount rate (under IAS 36) | Investment properties (option to measure at fair value under IAS 40) |

**ILLUSTRATION 3-2**

## DIFFERENCES IN ACCOUNTING BETWEEN ASPE AND IFRS

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| --- | --- | --- | --- |
|  | **IFRS – Conceptual Framework for Financial Reporting, IFRS 13** | **Accounting Standards for Private Enterprises (ASPE) – CPA Canada Handbook, Part II, Section 1000** | **Reference to related illustrations and select brief exercises** |
| **Measurement of fair value** | **Guidance is concentrated in IFRS 13** | **Guidance is spread throughout the ASPE standards** | **The guidance in ASPE is not inconsistent with IFRS 13, although there is significantly less detail.**  **Specific differences in measurement as they relate to financial statements and elements will be covered in subsequent chapters** |

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