

Non-financial asset measurements

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Aim

- » The aim of this session is to provide an understanding of accounting for non-financial assets in accordance with IFRS Accounting Standards in the Ethiopian context.
- » *Note 1: in yesterday morning's session we explored the subclassification of non-financial assets; and*
- » *Note 2: tomorrow morning's session is dedicated to the impairment of non-financial assets.*

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Overview

- » Measuring historical cost
- » Measuring fair value
- » Contrasting the cost model, the fair value model and the revaluation model
- » Measuring depreciation
- » Measuring variable contractual consideration

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Many measurements for non-financial assets

	IFRS	Impairment necessary?
Historical cost	✓	✓
Modified historical cost	✓	✓
Fair value	✓	X
Fair value less costs to sell	✓	X
Value in use	✓	An impairment measurement
Net realisable value	✓	Typically, an impairment measurement
Other measurements	✓	✓

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Historical cost 'concept': an asset
source: Chapter 6 of the *Conceptual Framework*

- » Historical cost of an asset is the value of the costs incurred in acquiring or creating the asset, comprising:
 - » the consideration paid to acquire or create the asset; plus
 - » transaction costs.

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Historical cost conventions
sources: IAS 2, IAS 16, IAS 23 and IAS 38

- » Historical cost includes all costs directly attributable to bringing an asset to the location and condition necessary for it to be capable of operating as intended by management, including:
 - » transactions costs, non-refundable purchase taxes and professional fees
 - » costs of converting raw material into finished goods (including an allocation of fixed production overheads)
 - » qualifying borrowing costs
 - » obligations incurred for dismantling, removing and restoring the site
- » cost formula (FIFO or weighted-average) for similar items
- » If payment is deferred beyond normal credit terms the interest is computed and cost is net of that interest.

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Historical cost of an asset Example 1

» Today you exchange:

- » ETB1,100,000 (including ETB200,000 refundable purchase taxes collected from you by the dealer on behalf of the government) for a new delivery vehicle
- » ETB70,000 cash for modifications to be made to the vehicle to enable it to transport more safely the volatile chemicals that you manufacture
- » ETB10,000 cash for your branding to be embossed on the vehicle
- » ETB20,000 for mandatory environmental safety inspection and certification of the modified delivery vehicle for the transport of hazardous chemicals
- » ETB2,000 for diesel to fuel initial running of the vehicle

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Historical cost of an asset Example 1 *Summary of class discussion*

What is the historical cost of the delivery vehicle? 7) ETB990,000; or 9) ETB1,000,000. Depending on whether the branding embossed on the vehicle serves a purpose other than advertising

Cost is calculated as follows:

- » ETB900,000 (excluding ETB200,000 refundable purchase taxes collected from you by the dealer on behalf of the government)
- » + ETB70,000 cash for modifications to be made to the vehicle to enable it to transport more safely the volatile chemicals that you manufacture
- » + ETB10,000 cash for your branding to be embossed on the vehicle (note to include this cost the branding must serve a purpose other than advertising. If solely advertising then the amount would be excluded from cost)
- » + ETB20,000 for mandatory environmental safety inspection and certification of the modified delivery vehicle for the transport of hazardous chemicals
- » exclude ETB2,000 for diesel to fuel initial running of the vehicle (not part of the vehicle asset)

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Historical cost of an asset (inventory)
Example 2: allocating fixed production overheads
What do you think?

Fixed production overheads = ETB1,000,000

Normal capacity = 250,000 units.

How much fixed overhead is allocated to each unit produced?

- » **Scenario A:** 250,000 units produced.
- » **Scenario B:** 200,000 units produced.
- » **Scenario C:** 300,000 units produced.
- » **Is the basis of allocation the same in all three scenarios?**

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Historical cost of an asset (inventory)
Example 2: allocating fixed production overheads
Summary of class discussion

- » **Scenario A:** Allocation rate: $\text{ETB}1,000,000 \div 250,000$ units normal capacity = ETB4 per unit produced.
 - » Allocate to inventories asset: $\text{ETB}4 \times 250,000$ units = ETB1,000,000.
- » **Scenario B:** Allocation rate: $\text{ETB}1,000,000 \div 250,000$ units normal capacity = ETB4 per unit.
 - » Allocate to inventories asset: $\text{ETB}4 \times 200,000$ units = ETB800,000.
 - » Recognise as an expense ETB200,000 (ie ETB1,000,000 overheads less ETB800,000 allocated to inventories asset).

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Historical cost of an asset (inventory)
Example 2: allocating fixed production overheads
Summary of class discussion

Scenario C: Allocation rate: $\text{ETB}1,000,000 \div 300,000$ units actually produced = $\text{ETB}3.33$ per unit.

» Allocate to inventories asset: $\text{ETB}3.33 \times 300,000$ units = $\text{ETB}1,000,000$.

» **Why is the basis of allocation different in Scenario 2C?**
When actual production exceeds normal product fixed production overheads must be allocated on the basis of actual production otherwise the costs allocated to inventories would exceed the amount of costs incurred!

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Historical cost of an asset (inventory)
Example 3: allocating production costs to joint and by-products
What do you think?

Chemical manufacturer incurs production process costs $\text{ETB}2,000,000$ (including allocated overheads) to produce:

» **Scenario 1 (By-product):**

- » 100,000 litres of Product (sales value = $\text{ETB}4,000,000$); and
- » 1,000,000 litres of By-product (sales value = $\text{ETB}10,000$).

» **Scenario 2 (Joint Products):**

- » 100,000 litres of Product A (sales value = $\text{ETB}4,000,000$); and
- » 1,000,000 litres of Product B (sales value = $\text{ETB}1,000,000$).

How much of the $\text{ETB}2,000,000$ production process costs is allocated to each unit of A produced in each scenario?

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Historical cost of an asset (inventory)

Example 3 Scenario 1: allocating production costs—by-product

What do you think?

Production process costs = ETB2,000,000.

Scenario 1 (By-product):

- » 100,000 litres of Product (sales value = ETB4,000,000); and
- » 1,000,000 litres of By-product (sales value = ETB10,000).

What is the cost per litre of Product produced? Choose one of:

- 1) ETB20 (ie $\text{ETB}2,000,000 \div 100,000$ litres)
- 2) ETB19.9 (ie $(\text{ETB}2,000,000 - \text{ETB}10,000) \div 100,000$ litres)
- 3) ETB19.95 (ie $\text{ETB}2,000,000 \times \text{ETB}4,000,000 / \text{ETB}4,010,000 \div 100,000$ litres)
- 4) ETB1.82 (ie $\text{ETB}2,000,000 \times 100,000 / 1,100,000$ litres) $\div 100,000$ litres)

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Historical cost of an asset (inventory)

Example 3 Scenario 1: allocating production costs—by-product

Summary of class discussion

Scenario 1 (By-product).

What is the cost per litre of Product produced? Choose one of:

- 1) ETB20 (ie $\text{ETB}2,000,000 \div 100,000$ litres)
- 2) **ETB19.9 (ie $(\text{ETB}2,000,000 - \text{ETB}10,000) \div 100,000$ litres)**
- 3) **ETB19.95 (ie $\text{ETB}2,000,000 \times \text{ETB}4,000,000 / \text{ETB}4,010,000 \div 100,000$ litres)**
- 4) ETB1.82 (ie $\text{ETB}2,000,000 \times 100,000 / 1,100,000$ litres) $\div 100,000$ litres)

Note: 3) is conceptually the best answer (ie the most rational and consistent manner in which to allocate the joint costs between the Product and the By-product. 2) is a practical expedient.

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Historical cost of an asset (inventory)

Example 3 Scenario 2: allocating production costs—joint products

What do you think?

Production process costs = ETB2,000,000.

Scenario 2 (Joint products):

- » 100,000 litres of Product A (sales value = ETB4,000,000); and
- » 1,000,000 litres of Product B (sales value = ETB1,000,000).

What is the cost per litre of Product A produced? Choose one of:

- 1) ETB20 (ie $ETB2,000,000 \div 100,000$ litres)
- 2) ETB10 (ie $(ETB2,000,000 - ETB1,000,000) \div 100,000$ litres)
- 3) ETB16 (ie $ETB2,000,000 \times ETB4,000,000 / ETB5,000,000 \div 100,000$ litres)
- 4) ETB1.82 (ie $ETB2,000,000 \times 100,000 / 1,100,000$ litres) $\div 100,000$ litres)

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Historical cost of an asset (inventory)

Example 3 Scenario 2: allocating production costs—joint products

Summary of class discussion

Production process costs = ETB2,000,000.

Scenario 2 (Joint products):

- » 100,000 litres of Product A (sales value = ETB4,000,000); and
- » 1,000,000 litres of Product B (sales value = ETB1,000,000).

What is the cost per litre of Product A produced? Choose one of:

- 1) ETB20 (ie $ETB2,000,000 \div 100,000$ litres)
- 2) ETB10 (ie $(ETB2,000,000 - ETB1,000,000) \div 100,000$ litres)
- 3) **ETB16 (ie $ETB2,000,000 \times ETB4,000,000 / ETB5,000,000 \div 100,000$ litres) is the most rational and consistent manner in which to allocate the joint costs between the Product A and Product B.**
- 4) ETB1.82 (ie $ETB2,000,000 \times 100,000 / 1,100,000$ litres) $\div 100,000$ litres)

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Historical cost of an asset

Example 4 (if needed, assume a discount rate of 10% per year)

Summary of class discussion

Scenario A: On 01/07/2020 you exchange (pay) ETB100,000 for a passenger motor vehicle which you receive on 01/07/2020.

What is the historical cost of the passenger motor vehicle?

ETB100,000

Scenario B: On 01/07/2020 you exchange goods that you manufactured at a cost of ETB80,000 for a passenger motor vehicle which you receive on 01/07/2020. Had you paid cash for the vehicle you would have paid ETB100,000.

What is the historical cost of the passenger motor vehicle?

Choose one of: 1) ETB80,000; or **2) ETB100,000.**

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Historical cost of an asset

Example 4 (if needed, assume a discount rate of 10% per year)

Summary of class discussion

Scenario C:

» On 01/07/2020 you exchange a promise to pay ETB121,000 on 30/06/2022 for a passenger motor vehicle which you receive on 01/07/2020.

» On 30/06/2022 you pay ETB121,000 to settle the claim against you.

What is the historical cost of the passenger motor vehicle?

Choose one of: **1) ETB100,000;** or 2) ETB121,000.

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Historical cost of an asset

Example 4 (if needed, assume a discount rate of 10% per year)

What do you think?

Scenario D:

» On 01/07/2020 you exchange (pay) ETB100,000 for a promise to receive a motor vehicle on 30/06/2022 (ie 2 years later).

» On 30/06/2022 you exchange the promise to receive the motor vehicle for the motor vehicle when the fair value of the motor vehicle is ETB150,000.

What is the historical cost of the motor vehicle? Choose one of: 1) ETB100,000; 2) ETB121,000; or 3) ETB150,000.

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Historical cost of an asset

Example 4 (if needed, assume a discount rate of 10% per year)

What do you think?

Scenario D: What is the historical cost of the motor vehicle? Choose one of: 1) ETB100,000; 2) ETB121,000; or 3) ETB150,000.

This issue has been deliberated by the IFRS Interpretation Committee who are yet to issue an interpretation in this matter (if issued such an interpretation would codify a convention). Until then, IFRS is yet to codify a convention for measuring cost in respect of a prepayment in a contract with a supplier. Consequently, an entity must specify its accounting policy and apply it consistently to all of its contracts with suppliers.

In the meantime, some argue that:

(a) the cost is in accordance with IAS 16 in fact 3) ETB150,000 because either (i) the prepayment is a monetary item and consequently must be remeasured to ETB150,000 before its exchange for the vehicle; or (ii) the exchange of the promise to receive the motor vehicle is an exchange of non-monetary items that has commercial substance and consequently the exchange must be measured at fair value.

(b) by analogy to IFRS 15 *Revenue from Contracts with Customers* (even though the measurement basis in IFRS 15 is customer consideration NOT cost) cost is 1) ETB100,000 because the contract includes significant financing.

(c) Cost is ETB100,000 because that is what was paid for the vehicle.

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Historical cost of an asset

Example 4 (if needed, assume a discount rate of 10% per year)

Summary of class discussion

Scenario E:

- » On 01/07/2020 you exchange chemicals you manufactured at a historical cost of ETB80,000 (with a market value/fair value = ETB100,000) for a promise to receive a motor vehicle on 30/06/2022 (ie 2 years later).
- » On 30/06/2022 you exchange the promise to receive the motor vehicle for the motor vehicle when the fair value of the motor vehicle is ETB150,000.

What is the historical cost of the motor vehicle? Choose one of: 1) ETB80,000; 2) ETB96,800; 3) ETB100,000; 4) ETB121,000; or 5) ETB150,000.

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Fair value

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Fair value: an asset *the concept*

- » The fair value of an asset is:
 - » the price that would be received to sell an asset (exit price)
 - » in an orderly transaction (not a forced sale)
 - » between market participants (market-based view)
 - » at the measurement date (current price) (IFRS 13 *Fair Value Measurement*)

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Fair value *measurement objective*

- » **Objective** of fair value measurement: **estimate the price** at which an orderly transaction to sell an asset would take place between market participants at the measurement date under current market conditions (paragraph B2 of IFRS 13)
- » The objective **provides focus** to fair value measurement
 - » **Market participant perspective**: consequently, the entity's intention to hold an asset is not relevant when measuring fair value.

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Fair value *market participants*

- » Characteristics of market participants (ie buyers and sellers in principal market (or most advantageous market)):
 - » independent
 - » knowledgeable
 - » diligent
 - » use all available information
 - » willing to transact for the asset or liability
 - » able to transact for the asset or liability
- » Assumption: market participants act in their economic best interest

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Measuring the fair value of non-financial assets

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Fair value: market participant perspective

application guidance: how to measure fair value

- » To measure the fair value of an immovable property asset:
 - » determine all characteristics of the asset being measured (exclude things that are not characteristics of the asset or liability);
 - » apply the valuation premise;
 - » determine the highest and best use;
 - » determine the principal (or most advantageous) market;
 - » determine the appropriate valuation technique/s and inputs that **market participants would use** when pricing the asset
 - » determine the level of the fair value hierarchy within which the inputs are categorised.

Source: paragraph B2 of IFRS 13

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Fair value: market participants' viewpoint

application guidance: characteristic of an asset or liability

- » Fair value measurement is for a **particular** asset
 - » it captures all characteristics of the asset or liability being measured that **market participants would take into account** when pricing the item
 - » location
 - » condition
 - » restrictions on use or sale that are a characteristic of the item
 - » it excludes things that are not characteristics of the asset or liability
 - » transactions costs
 - » restrictions on use or sale that are not a characteristic of the item

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Fair value: is location a characteristic of the asset?

Summary of class discussion

- » You recently won a tender to explore for gold in the Northern Greenstone Belt of Ethiopia.
- » On 30 November 2022 you:
 - » buy a **mineral exploration rig** for ETB20 million in the US
 - » incur buying agent commission of ETB2 million
 - » pay ETB1 million for the rig to be transported safely from the US to your exploration site
- » The seller of the drill incurs ETB2 million selling costs.
- » The market at which you purchased the rig is your principal market (should you choose to sell the rig).
- » **What is the fair value of the rig at 31 December 2022? Fair value = ETB19 million because LOCATION is a characteristic of an asset therefore must TAKE ACCOUNT of the cost of transporting the rig back to the principal market. BUT transaction costs are irrelevant to fair value measurement therefore ignore selling commission.**

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Fair value: are transaction costs a characteristic of the asset?

Summary of class discussion

- » 31/12/2022:
 - » Market price = ETB100 billion;
 - » Transaction costs = ETB10 billion
- » What is the fair value of the asset? Choose one of:
 - » ETB110 billion;
 - » **ETB100 billion;** or
 - » ETB90 billion.

IGNORE transactions costs when measuring fair value (ie fair value is before transactions costs because transactions costs are not a characteristic of the asset). Moreover, fair value is a market price, it is not indicative of an intention to sell.

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Fair value of biological assets: characteristics of the asset

Example: Summary of class discussion

When measuring the fair value of a beef farmer's cow, which of the following, if any, are characteristics of the cow that market participants would take into account when pricing the cow with reference to the selling price of beef cows observed in the Addis Ababa market? Choose one or more of:

- 1) None, ie use the reference price without adjustment.
- 2) The farmer's cow is 20 kms from the Addis Ababa market.
- 3) The farmer's cow is heavier than the reference price cows.
- 4) The breed of the farmer's cow is different from the reference price cows.
- 5) The farmer has identified the cow for delivery to a customer under a fixed-price sale contract entered into 3 months ago that requires physical delivery of 20 cows 6 months later.

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Fair value of land and buildings: characteristic of the asset?

Example 1: restriction on use

- » You own land use rights to Plot A that is **zoned 'green belt'**—which prohibits the construction of buildings on that land.
- » Similar neighbouring plots' with the same land use rights and subject to the same restrictions sold recently:
 - » for ETB950,000 on 30 October 2022 (Plot B); and
 - » for ETB30,000,000 on 31 December 2022 (Plot C).
- » The difference in the selling price of Plots B and C is attributable primarily to the press leaked confidential government dossier setting out the government's plans for **proposing an amendment to the law to allow for the construction of high-rise buildings** on some (but unspecified which) green belt land.

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Fair value of land and buildings: characteristic of the asset?

Example 1: restriction on use

What do you think?

You employ a reputable property valuation expert to value the land use rights to Plot A at 31/12/2022 under each of the following hypothetical scenarios:

- » **Scenario 1:** the land is rezoned allowing for the construction of a high-rise building: ETB100,000,000
- » **Scenario 2:** market participants believe there is no prospect of the zoning laws changing: ETB1,000,000

What is the fair value of the land use rights to Plot A at 31/12/2022? Choose one of: 1) ETB950,000; 2) ETB1,000,000; 3) ETB30,000,000; 4) ETB100,000,000; or 5) another amount.

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Fair value of land and buildings: characteristic of the asset?

Example 1: restriction on use

Summary of class discussion

What is the fair value of the land use rights to Plot A at 31/12/2022? Choose one of: 1) ETB950,000; 2) ETB1,000,000; 3) ETB30,000,000; 4) ETB100,000,000; or 5) another amount.

At 31/12/2022 fair value of your land right most likely approximates = ETB30,000,000 (Plot C (a similar asset) was sold in the market at the measurement date, assuming not a forced sale, assuming the rights to Plot C the same as the rights to Plot A, etc). Fair value measurement takes account of everything that market participants; take account of.

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Fair value of land and buildings: characteristic of the asset?

Example 2: restriction on use (subject to operating lease)

Summary of class discussion

» 01/01/2023 in a business combination you acquire land that is subject to an operating lease (acquiree is the lessor) that is ETB2 billion (fair value) favourable to the lessor when compared with market terms.

» Without the lease market participants would pay ETB98 billion (fair value) for the land.

» **At 01/01/2023 what is the fair value of the land classified as IAS 40 Investment Property?** Choose one of: 1) ETB96 billion; 1) ETB98 billion; **3) ETB100 billion**; or 4) another amount

Note: an IFRS rule (see paragraph B42 of FRS 3 *Business Combinations*) specifies that one must take into account the terms of the lease in measuring the acquisition-date fair value of the land and consequently, not recognise a separate asset for the favourable (or unfavourable) terms of the operating lease (from the lessor's perspective) when compared with market terms.

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Fair value of land and buildings: characteristic of the asset?

Example 4: restriction on use (easements)

Summary of class discussion

» You own a plot of land that is subject to easements—specified utility companies have the right to run water pipes, gas pipes, electricity lines and broadband cables across the land.

» The easements are specific to the land and, if the land were to be sold the easements would necessarily transfer to the buyer.

» You employ a reputable land valuation expert to value your land at 31/12/2022 under each of the following scenarios:

» **Scenario 1 (hypothetical):** the land without being subject to any easements: ETB100 billion.

» **Scenario 2:** the land subject to the specified easements: ETB90 billion.

» **What is the fair value of the land at 31/12/2022?** Choose one of: **1) ETB90 million**; 2) ETB100 million; or 3) another amount.

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Fair value of land and buildings: characteristic of the asset?

Example 3: donor-imposed restriction on use

- » 01/01/2000, you receive **farmland** by way of donation. This farmland is subject to a **donor imposed restriction that prohibits you from using the land for any purpose other than grazing animals on it.**
- » In 2010 agricultural practices in the region evolved in response to climate change and management determine that **it would now be significantly more profitable to grow intensive annual crops** on the land.
- » By 2022 the land bordering your farmland had been developed into **upmarket domestic housing** in response to the tourism industry unexpectedly booming in the region.

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Fair value of land and buildings: characteristic of the asset?

Example 3: donor-imposed restriction on use

What do you think?

- » Periodically you employ a reputable property valuation expert to measure the current value of your farmland if restricted to the following uses:

Measurement-date	Grazing	Cropping	Housing
01/01/2000	ETB1 billion	ETB0.5 billion	ETB0.1 billion
31/12/2010	ETB1.5 billion	ETB2.5 billion	ETB0.2 billion
31/12/2022	ETB2 billion	ETB5 billion	ETB10 billion

- » **What is the fair value of the land at 01/01/2000?** Choose one of: 1) ETB0.1 billion; 2) ETB0.5 billion; 3) ETB1 billion; or 4) it depends (specify...)
- » **What is the fair value of the land at 31/12/2010?** Choose one of: 1) ETB0.2 billion; 2) ETB1.5 billion; 3) ETB2.5 billion; or 4) it depends (specify...)
- » **What is the fair value of the land at 31/12/2022?** Choose one of: 1) ETB2 billion; 2) ETB5 billion; 3) ETB10 billion; or 4) it depends (specify...)

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Fair value of land and buildings: characteristic of the asset?

Example 3: donor-imposed restriction on use

Summary of class discussion

- » What is the fair value of the land at 01/01/2000? 4) it depends:
 - » ETB1 billion only if the condition does not transfer to the buyer.
 - » If the condition transfers to the buyer then fair value is likely less than ETB1 billion albeit that grazing is currently highest and best use. The discount would depend on the extent to which market participants would factor into their pricing the limitation if highest and best use were to change.
- » What is the fair value of the land at 31/12/2010? 4) it depends. ETB2.5 billion only if the condition does not transfer to the buyer.
- » What is the fair value of the land at 31/12/2022? 4) it depends. ETB10 billion only if the condition does not transfer to the buyer.

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Fair value of a non-financial asset

application guidance: highest and best use

- » Fair value measurement logically assumes that a market participant would put a non-financial asset to its **highest and best use** because that maximises the value of the asset.
- » The highest and best use must be:
 - » physically possible;
 - » legally permissible; and
 - » financially feasible.

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Fair value of land and buildings

Example 1: highest and best use

- » Your factory is built on Plot 900 in a recently developed industrial development zone on the outskirts of Addis Ababa where the land that is divided into one hundred two acre plots that before their further development were essentially homogenous. Factories, like yours, are the highest and best use for the land rights.
- » On 31/12/2022 two of the plots adjoining your plot were sold (ie sale of the land rights and the buildings, if any, constructed thereon):
 - » Plot 901 sold for **ETB30 million**: land rights with a similar factory of the same age, same condition and same floor area as yours.
 - » Plot 899 sold for **ETB10 million** because it is undeveloped (yet to be built on).

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Fair value of land and buildings

Example 1: highest and best use


Summary of class discussion

On 31/12/2022 what is the fair value of your land rights (ie excluding the factory building)? Choose one of: 1) ETB0; **2) ETB10 million;** 3) ETB20 million; 4) ETB30 million; 5) ETB70 million; 6) ETB80 million; 7) ETB100; million; or 8) another amount.

On 31/12/2022 what is the fair value of your factory building (ie excluding the land rights)? Choose one of: 1) ETB0; 2) ETB10 million; **3) ETB20 million;** 4) ETB30 million; 5) ETB70 million; 6) ETB80 million; 7) ETB100; million; or 8) another amount.

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Fair value of land and buildings
Example 2: highest and best use
What do you think?

Facts are the same as Example 1. A decade later on 31/12/2032:


» **high-rise commercial development** is now the highest and best use for your land rights because the rapidly expanding financial district of Addis Ababa has grown to the boundary of plots 899, 900 and 901.

» Plots 899 and 901 each sell for ETB100 million.

On 31/12/2032 what is the fair value of your land rights (ie excluding the factory building)? Choose one of: 1) ETB0; 2) ETB10 million; 3) ETB20 million; 4) ETB30 million; 5) ETB70 million; 6) ETB80 million; 7) ETB100; million; or 8) another amount

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Fair value of land and buildings
Example 2: highest and best use
What do you think?

On 31/12/2032 what is the fair value of your factory building (ie excluding the land rights)? Choose one of: 1) ETB0; 2) ETB10 million; 3) ETB20 million; 4) ETB30 million; 5) ETB70 million; 6) ETB80 million; 7) ETB100; million; or 8) another amount

Does your estimate of the fair value of your factory building (ie excluding the land rights) depend on which model you use for your land rights (cost model or revaluation model)?

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Fair value of land and buildings

Example 2: highest and best use

Summary of class discussion

On 31/12/2032 what is the fair value of your land rights (ie excluding the factory building)? Choose one of: 1) ETB0; 2) ETB10 million; 3) ETB20 million; 4) ETB30 million; 5) ETB70 million; 6) ETB80 million; **7) ETB100; million;** or 8) another amount.

On 31/12/2032 what is the fair value of your factory building (ie excluding the land rights)? Choose one of: **1) ETB0;** 2) ETB10 million; 3) ETB20 million; 4) ETB30 million; 5) ETB70 million; 6) ETB80 million; 7) ETB100; million; or 8) another amount

Does your estimate of the fair value of your factory building (ie excluding the land rights) depend on which model you use for your land rights (cost model or revaluation model)? **Answer: No**

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Fair value of land and buildings

Example 3: highest and best use

Summary of class discussion

- » Facts are the same as in Example 1, except in **Example 3** there have been no recent sales of similar assets (ie Plots 899 and 901 are unsold). **How could the fair value of the land use and the factory on Plot 900 be measured at 31/12/2022?**
- » **Use a different model to estimate the fair value of the land and buildings. For example, a DCF model using market participant inputs, ie market participant cash flows.**
- » **What judgements would be made in measuring such a Level 3 fair value?**
 - » **Identifying the relevant market participants (for example, factory owners if current use is highest and best use);**
 - » **Identifying the model market participants would use to estimate fair value (for example, DCF model for the land and the building in its highest and best use (likely current use);**
 - » **Estimating the model inputs from the market participant perspective (including, if a DCF model for the land, the a notional cash flows for the current market rentals for the land use and the market participant discount rate/s.**

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Fair value of land and buildings

Example 4: highest and best use

Summary of class discussion

- » Facts are the same as in Example 2, except in **Example 4** there have been no recent sales of similar assets (ie Plots 899 and 901 are unsold). **How could the fair value of the factory building on Plot 900 be measured at 31/12/ 2032?**
- » Use a different model to estimate the fair value of the land. For example, a DCF model using **market participant inputs**, ie market-participant cash flows (including notional cash flows = current market rentals for the land use).
- » Fair value of the building is likely nil because logically it would be replaced with a high-rise building).
- » **What judgements would be made in measuring such a Level 3 fair value?**
 - » Identifying the relevant market participants (for example, high-rise property developers);
 - » Identifying the model market participants would use to estimate fair value (for example, DCF model for the land.
 - » Identifying/estimating the model inputs from the market participant perspective (including, if a DCF model for the land, the cash flows to remove the factory building and to build a high-rise building, then over the economic life of the high-rise building: rental income and high-rise building maintenance expenses etc and the market participant discount rate/s.

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Fair value of immovable property

application guidance: appropriate valuation technique/s and inputs

- » Fair value is measured using the valuation technique/s and inputs that **market participants would use** when pricing the asset.
- » The **level of the fair value hierarchy** within which the inputs are categorised must be determined because:
 - » Unadjusted Price x Quantity rule applies to Level 1 fair value measurement.
 - » To achieve a reliable measurement (faithful representation) different disclosures are specified for each level of the fair value measurement hierarchy.

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Fair value of an intangible asset Appropriate valuation approaches

TABLE 1: Intangible Valuation Approach Summary

ASSET	PRIMARY	SECONDARY	TERTIARY
Patents	Income	Market	Cost
Technology	Income	Market	Cost
Copyrights	Income	Market	Cost
Assembled workforce	Cost	Income	Market
Internally developed software	Cost	Market	Income
Brand names	Income	Market	Cost
Customer relations	Income	Cost	Market

Source: Chartered Global Management Accountant (CGMA) Three approaches to valuing intangible assets (p6)

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FVM valuation approaches and methods/techniques reportedly common use examples for intangible assets

Market approach (suitable for few intangibles)	Income approach (appropriate technique/s for many intangibles)	Cost approach* (suitable for few intangibles)
<ul style="list-style-type: none"> Some standardised cryptoassets (e.g. Bitcoin) Some standardised agricultural produce quotas Some standardise licences Some standardized carbon emission trading certificates (e.g. EU ETS) 	<ul style="list-style-type: none"> Customer and vendor relationships & enabling technology: multi-period excess earnings method (MPEEM) For trade names, brands and technology assets: relief-from-royalty method For non-compete agreements and customer relationships: with-or-without method For long-lived government issued licences that are fundamental to the business: greenfield method 	<ul style="list-style-type: none"> Internally developed and used software Assembled workforce (because it is a necessary input for multiple-period excess earnings method)

* the 'logic' of the cost approach is that an investor will pay no more for an asset than the cost to buy or construct a substitute asset of comparable utility.

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Mini-case study: observed regulatory practice in measuring the fair value of non-financial assets

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Examples—fair value measurement *applying the fair value measurement principle*

- » Fair value measurement **principle**: estimate the price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants at the measurement date under current market conditions (ie an exit price at the measurement date from the perspective of a market participant that holds the asset or owes the liability). (paragraph 2 of IFRS 13)
- » **Judgements** include, has the registrant: (i) used an appropriate model? (ii) used appropriate model inputs? (iii) taken account of all factors market participants would consider in measuring fair value? (iv) applied the model properly (without material error)?

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Regulatory mini-case study 1: FRC (UK)
Anglo-Eastern Plantations Plc at 31 December 2010
What do you think? (slide 1 of 2 slides)

Anglo-Eastern Plantations Plc at 31 December 2010

- » “The Conduct Committee’s Financial Reporting Review Panel (FRRP) considered the company’s use of historical rather than current data to estimate the fair value of palm oil trees, recognised in the balance sheet as biological assets.
- » In its 2010 accounts the company valued its plantation estates using a **discounted cash flow technique** by estimating future sales proceeds of palm oil, deducting from this the estimated cash costs of production and discounting these estimated net cash flows. **The company used historical percentages to allocate the plantation estate values between land, palm oil trees and equipment.** (emphasis added)
- » **Does an allocation on this basis achieve fair value for the biological asset?**

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Regulatory mini-case study 1: FRC (UK)
Anglo-Eastern Plantations Plc at 31 December 2010
Summary of class discussion (slide 1 of 2 slides)

Anglo-Eastern Plantations Plc at 31 December 2010

- » “The Conduct Committee’s Financial Reporting Review Panel (FRRP) considered the company’s use of historical rather than current data to estimate the fair value of palm oil trees, recognised in the balance sheet as biological assets.
- » In its 2010 accounts the company valued its plantation estates using a **discounted cash flow technique** by estimating future sales proceeds of palm oil, deducting from this the estimated cash costs of production and discounting these estimated net cash flows. **The company used historical percentages to allocate the plantation estate values between land, palm oil trees and equipment.** However, an allocation on this basis **does not achieve fair value** for the biological asset, as required by IAS 41 ‘Agriculture’.” (emphasis added)

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Regulatory mini-case study 1: FRC (UK)
Anglo-Eastern Plantations Plc at 31 December 2010
What do you think? (slide 2 of 2 slides)

- » “In its 2012 accounts, whilst the FRRP’s enquiries were on-going, the company changed its valuation method to value land and biological assets separately and recorded its first prior year restatement. **Land was valued by reference to market prices.** The fair value of **palm oil trees was valued using a similar discounted cash flow technique** to the plantation estate method. However, **the estimated cash costs of production** used historical, rather than current data, to estimate the cost of using the land on which the palm oil trees are planted.
- » **Does estimating the cash costs of production using historical data to estimate the cost of using the land on which the palm oil trees are planted achieve fair value for the biological asset?**

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Regulatory mini-case study 1: FRC (UK)
Anglo-Eastern Plantations Plc at 31 December 2010
Summary of class discussion (slide 2 of 2 slides)

- » “In its 2012 accounts, whilst the FRRP’s enquiries were on-going, the company changed its valuation method to value land and biological assets separately and recorded its first prior year restatement. **Land was valued by reference to market prices.** The fair value of **palm oil trees was valued using a similar discounted cash flow technique** to the plantation estate method. **However, the estimated cash costs of production used historical, rather than current data, to estimate the cost of using the land on which the palm oil trees are planted. As a consequence, the fair value of biological assets was over-stated.**
- » **Following further discussion with the FRRP, the company has used current market data to estimate the cost for the use of land in its discounted cash flow. This has given rise to a second prior period restatement, announced by the company today, that reduced the value of its biological assets at December 2012 by \$37 million from \$245 million to \$208 million. Profit after tax for the year ended 31 December 2012 was reduced by \$1.6 million. There was no impact on cash.” (emphasis added)**

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Regulatory mini-case study 2: JSE (South Africa)

Fair value of investment properties

In this matter, **investment properties** were the most significant assets for the issuer. In their 2020 interims (issued in the midst of the **covid-19 pandemic**) the **issuer stated** that:

“Investment properties were last revalued at (the previous financial year end). Caution needs to be exercised by the user of this announcement, bearing in mind that the valuations were performed without the covid-19 impact”.

The issuer **initially asserted that there was no reliable information available** with which to prepare valuations at the interim reporting date. IAS 34.41 notes that the preparation of interim results will generally require a greater use of estimation than for AFS.”

Source: REPORTING BACK ON PROACTIVE MONITORING OF FINANCIAL STATEMENTS IN 2021

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Regulatory mini-case study 2: JSE (South Africa) *Summary of class discussion*

- 1. Is it appropriate to temporarily suspend fair value measurement in a pandemic because there is widespread disruptions to markets? Choose one of: 1) Yes; or 2) No. The property-by-property cost model impracticability exception can only be triggered at initial recognition (paragraphs 53 and 55 of IAS 40).**

Note: the JSE observed that “Heightened uncertainty about the future does not justify the non-application of IFRS to determine the fair value at the interim date. This was confirmed by the IASB in their document ‘Applying IFRS standards in 2020-impact of covid-19’ which highlights that an increase in uncertainty is not a reason to “freeze” estimates.”

Source: REPORTING BACK ON PROACTIVE MONITORING OF FINANCIAL STATEMENTS IN 2021

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Regulatory mini-case study 2: JSE (South Africa)
Summary of class discussion

- 2. Can an SOE rectify inappropriate accounting policies either by disclosure of the accounting policy used or by notes or explanatory material? Choose one of: 1) Yes; or 2) No.**

“An entity cannot rectify inappropriate accounting policies either by disclosure of the accounting policy used or by notes or explanatory material.” (paragraph 18 of IAS 1)

Source: REPORTING BACK ON PROACTIVE MONITORING OF FINANCIAL STATEMENTS IN 2021

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Regulatory mini-case study 2: JSE (South Africa)
Summary of class discussion

- 3. In instances of widespread disruptions to markets (such as the covid-19 pandemic) how could the fair value of investment property be measured?**

The JSE observed that “In instances of widespread disruptions to markets (such as the covid-19 pandemic) reliance is placed on unobservable inputs applied in a valuation technique. Unobservable inputs can be developed using the best information available about the assumptions that market participants would use when pricing the asset.”

Source: REPORTING BACK ON PROACTIVE MONITORING OF FINANCIAL STATEMENTS IN 2021

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Regulatory mini-case study 2: JSE (South Africa) *Summary of class discussion*

“IFRS 13.B23 describes the expected **present value technique** as a possible valuation approach. In so doing it describes as a starting point the use of a set of cash flows that represents the probability-weighted average of all possible future cash flows. It later caveats this (IFRS 13.B28) by noting that it might be possible to develop a limited number of discrete scenarios and probabilities that capture the array of possible cash flows. IFRS 9.B5.5.41 and B5.5.42 (applied by analogy) also explain that estimates are neither a worst-case scenario nor an estimate of a best-case scenario but rather an estimation that reflects a range of possible outcomes. A similar requirement for estimates of future cash flows is drawn in IFRS 17.B37, noting that the objective of estimating future cash flows is to consider the full range of possible outcomes. A caveat is again provided in B39 of IFRS 17 in that, in practice, explicit scenarios may be unnecessary if the resulting estimate is consistent with the measurement objective of considering all reasonable and supportable information available.”

Source: REPORTING BACK ON PROACTIVE MONITORING OF FINANCIAL STATEMENTS IN 2021

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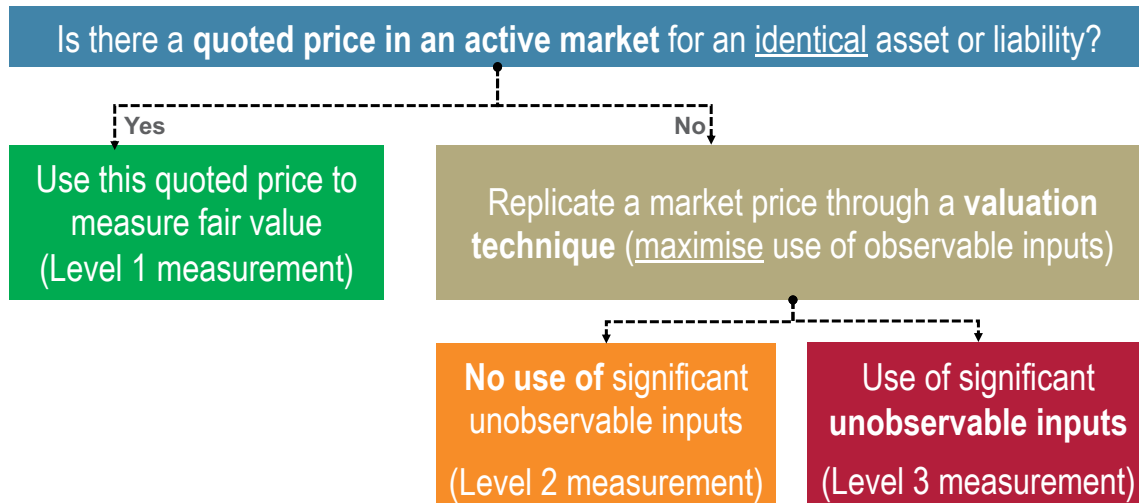
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Fair value measurement hierarchy

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Fair value hierarchy application guidance: Levels 1, 2 and 3



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Fair value measurement hierarchy judging the boundaries of the artificial constructs

- » Boundary between **levels 1 & 2**—do transactions in the market in which the **identical item** trades (and that the entity can access at the measurement date) take place with **sufficient frequency and volume** to provide pricing information on an ongoing basis? (Appendix A to IFRS 13)
- » By definition an active market cannot exist for a unique intangible asset. Active markets exist only for a few standardised intangible assets.

Example: Tesla (2022) 10K Annual Report, (p63)

“We determine the fair value of our digital assets on a nonrecurring basis ..., based on quoted prices on the active exchange(s) that we have determined is the principal market for such assets (Level I inputs).”

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Fair value measurement hierarchy judging the boundaries of the artificial constructs


» Boundary between **level 2 and level 3**—significant unobservable inputs?

Example **entity-specific policy**—HSBC (2020) financial statements, p292:

- » “significant unobservable inputs if, in the opinion of management, a significant proportion of the instrument’s inception profit or greater than 5% of the instrument’s valuation is driven by unobservable inputs
- » ‘Unobservable’ in this context means that there is little or no current market data available from which to determine the price at which an arm’s length transaction would be likely to occur. It generally does not mean that there is no data available at all upon which to base a determination of fair value (consensus pricing data may, for example, be used)”

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Regulatory mini-case study: JSE (South Africa) Fair value of investment property

» In its proactive monitoring of 2016 financial statements, the JSE observed issuer-owned **investment property incorrectly classified at level 2** fair value.

» it is highly unlikely that property in the South African market will meet the criteria for a level 2 fair value classification (ie no significant unobservable inputs).

» Another issuer incorrectly determined the fair value of the investment property as ‘fair value less costs to sell’ per IFRS 5 when IFRS 13, is applicable to determining the fair value of investment property, even if it is subsequently transferred to non-current assets held for sale (ie in the scope of IFRS 5).

Source: REPORTING BACK ON PROACTIVE MONITORING OF FINANCIAL STATEMENTS IN 2016

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Fair value of land and buildings

Quiz: summary of class discussion

- » Which level of the fair value measurement hierarchy do you believe appropriate for an issuer owned fully let high-end multi-storey building in Addis Ababa that is classified as investment property? Choose one of: 1) Level 1; 2) Level 2; or **3) Level 3.**
- » Which level of the fair value measurement hierarchy do you believe appropriate for an issuer owned unlet partly constructed multi-storey building in Addis Ababa that is classified as investment property? Choose one of: 1) Level 1; 2) Level 2; or **3) Level 3.**
- » Which level of the fair value measurement hierarchy do you believe appropriate for a 50-year land use right in Oromia that is classified as the PPE by a coffee farmer (the issuer)? Choose one of: 1) Level 1; 2) Level 2; or **3) Level 3.**

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Mini-case study: observed practice in measuring the fair value of standing timber

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Fair value of a biological asset

Observed practice: approaches for standing timber

- » **Market approach** used by 3 of 25 companies
- » **Income approach** (DCF methods) used by 21 of 25 companies
- » **Cost model exception from fair value measurement** used by 1 company
 - » The company, with natural tropical rain forest, concluded that cost represents the only option for certain areas with **diverse indigenous species**, where there are **less well-known growth patterns** and where there are **no track records of reliable, quoted prices**.
- » **Multiple approaches** (to measuring fair value) used by a few companies due to nature of their various standings.
 - » **Cost approach** (to measuring fair value) used by 7 of 25 companies for **newly planted trees**.

Source: PwC, *Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber*, 2011, (p11)

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Fair value of a biological asset

Observed practice: approaches for standing timber

- » **Market approach** used by 3 of 25 companies
 - » **plantations** with relatively **short rotation periods** (typically 5-20 years) that are classified as **mature** when reaching a certain stage in their rotation.
 - » This type of **standing timber could be sold at reliable market prices**.

Source: PwC, *Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber*, 2011, (p11)

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Measuring fair value less costs to sell of standing timber

Example 1: Mondi Group (1 of 6 slides)

Extract from Note 35 Accounting Policies to Mondi's consolidated financial statements for the year ended 31 December 2022 (emphasis added)

"Agriculture – owned forestry assets (note 14)

Owning forestry assets are biological assets measured at fair value less costs to sell, calculated by applying the expected selling price, less costs to harvest and deliver, to the estimated volume of timber on hand at each reporting date. The fair value less costs to sell is determined **using a market-based approach**. The estimated **volume of timber** on hand is determined based on the maturity profile of the area under afforestation, the species, the geographic location, climate and other environmental considerations and excludes future growth. The product of these is then **adjusted for risks associated with forestry assets**.

Changes in fair value are recognised in the consolidated income statement within other net operating expenses. At point of harvest, the carrying value of forestry assets is transferred to inventory and recorded as a felling cost reduction to the fair value of forestry assets. Directly attributable costs incurred during the year of biological growth and investments in standing timber are capitalised and presented within cash flows from investing activities."

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Measuring fair value less costs to sell of standing timber

Example 1: Mondi Group (2 of 6 slides)


Extract from Note 14 Forestry Assets to Mondi's consolidated financial statements for the year ended 31 December 2022

14 Forestry assets

€ million	2022	2021
At 1 January	348	372
Investment in forestry assets	49	45
Fair value gains/(losses)	169	(7)
Felling costs	(78)	(62)
Currency movements	(3)	-
At 31 December	485	348
Mature	309	217
Immature	176	131

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Measuring fair value less costs to sell of standing timber

Example 1: Mondi Group (3 of 6 slides)

Extract from Note 14 Forestry Assets to Mondi's consolidated financial statements for the year ended 31 December 2022 (emphasis added)

"The Group has 252,857 hectares (2021: 253,680 hectares) of owned and leased land available for forestry activities, all of which is in South Africa. 80,227 hectares (2021: 80,854 hectares) are set aside for conservation activities and infrastructure needs. 1,045 hectares (2021: 1,044 hectares) relate to non-core activities. The balance of 171,585 hectares (2021: 171,782 hectares) are under afforestation, which forms the basis of the valuation set out above.

Mature forestry assets are those plantations that are harvestable, while **immature** forestry assets have not yet reached that stage of growth. Timber is harvested according to a rotation plan, once trees reach maturity. The maturity period ranges from 6.5 to 14.5 years, depending on species, climate and location.

The fair value of forestry assets is a **level 3** measure in terms of the fair value measurement hierarchy, consistent with prior years. ...

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Measuring fair value less costs to sell of standing timber

Example 1: Mondi Group (4 of 6 slides)

Extract from Note 14 Forestry Assets to Mondi's consolidated financial statements for the year ended 31 December 2022 (emphasis added)

"The following assumptions have a significant impact on the valuation of the Group's forestry assets:

- » The **net selling price**, which is defined as the selling price less the costs of transport, harvesting, extraction and loading. The net selling price is **based on third-party transactions and is influenced by the species, maturity profile and location of timber**. In 2022, the net selling price used ranged from the South African rand equivalent of €14 per tonne to €47 per tonne (2021: €14 per tonne to €44 per tonne), with a weighted average of €33 per tonne (2021: €24 per tonne).
- » The **conversion factor**, which is used to convert hectares of land under afforestation to tonnes of standing timber, is dependent on the species, the maturity profile of the timber, the geographic location and a variety of other environmental factors, such as the anticipated impact of climate change on water scarcity and fire risks. In 2022, the conversion factors ranged from 7.9 to 23.9 (2021: 8.3 to 24.1). ...

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Measuring fair value less costs to sell of standing timber

Example 1: Mondi Group (5 of 6 slides)

Extract from Note 14 Forestry Assets to Mondi's consolidated financial statements for the year ended 31 December 2022 (emphasis added)

» “The **risk premium** on immature timber of 12.5% (2021: 12.9%) is based on an assessment of the risks associated with forestry assets in South Africa and is applied for the years the immature timber has left to reach maturity. A risk premium on mature timber of 4.0% (2021: 4.0%) was applied. The risk premium applied to immature and mature timber include factors for the **anticipated impact of climate change on water scarcity and fire risks**. An increase in the severity and frequency of extreme weather events, such as higher temperatures, changes in rainfall patterns and drought conditions, may result in higher timber losses in future years caused by stronger winds, erosion, fires, pests and diseases.

The valuation of the Group's forestry assets is determined in South African rand and converted to euro at the closing exchange rate on 31 December of each year.

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Measuring fair value less costs to sell of standing timber

Example 1: Mondi Group (6 of 6 slides)

Extract from Note 14 Forestry Assets to Mondi's consolidated financial statements for the year ended 31 December 2022 (emphasis added)

Management has performed sensitivity analyses of **reasonably possible changes** in the significant assumptions and the EUR/ZAR exchange rate. The sensitivity table is based on historical experience; however, the estimates may vary by greater amounts. Therefore, the Board considers the forestry assets valuation to be a significant accounting estimate. The reported value of owned forestry assets would change as follows should there be a change in these underlying assumptions on the basis that all other factors remain unchanged:

€ million	2022	2021
Effect of €5/tonne increase in net selling price	75	71
Effect of 1% increase in conversion factor (hectares to tonnes)	5	3
Effect of 1% increase in risk premium	(7)	(5)
Effect of 10% increase in EUR/ZAR exchange rate	(44)	(32)

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Fair value of a biological asset

Observed practice: approaches for standing timber

- » PwC study: **income approach (DCF models)** used by most (21 of 25 companies) for both **managed natural forests and plantations**. DCF methods used because **lack active markets for large plots of forest land**, implying no reliable quoted market prices for standing timber.
 - » However, since the PwC study, evidence from **Sweden** finds the price of forest land in a number of larger forest land deals showing that the value of larger forest assets per hectare or per cubic metres of forest generally lie at the same level as for smaller or medium forest assets.
 - » Consequently, some Nordic companies (eg Sveaskog) now use market-based valuations for forest assets (land and trees).
 - » Nonetheless, Sveaskog uses DCF model to measure the fair value of trees (IAS 41) with the residual forest assets under IAS 16's revaluation model.
- » PwC study: concludes **most important assumptions** used in the DCF-modelling include: (i) harvesting plans; (ii) timber prices; (iii) forestry costs; (iv) growth rates; and (iv) discount rates.

Source: PwC, *Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber*, 2011, (p11&12)

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Fair value of a biological asset

Observed practice: approaches for standing timber

- » PwC study: differences between preparers' modelling assumptions **could reflect economic differences**. For example, **different species, different environments** (geographic location), etc logically different.
 - » However, PwC also observe **counterintuitive differences** in modelling assumptions, **notably the basis of timber prices**.

Source: PwC, *Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber*, 2011, (p11&12)

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Fair value of a biological asset

Observed practice: standing timber price modelling assumptions

- » Some companies base their assumptions on **current market prices** for timber.
 - » **Plantations** in regions with **faster rotation species** (except Chilean companies), there appears to be less of a need for adjusted price assumptions, as **current timber prices** are considered sufficiently reliable for modelling fair values.
- » Others companies use **adjusted current market prices** to **smooth out short-term volatility** in the market prices for logs.
 - » Nordic regions, mainly **natural forests**, have considerably **longer growth cycles**
- » Disclosures about timber prices modelling assumptions are **generally inadequate**.
 - » Some companies make extensive disclosures, which supports transparency in the financial statements.

Source: PwC, *Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber*, 2011, (p12)

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Measuring fair value less costs to sell of standing timber

Observed practice example 1, Sveaskog 2022 Annual Financial Statements (p67) (**emphasis added**) (1 of 4 slides)

Note 1 Accounting policies ... Judgements and estimates in the financial statements (**emphasis added**)

"In order to calculate the fair value of the biological asset, standing timber, the **estimated cash flow from future revenue from timber extractions less felling costs has been discounted to a present value**. ...

One production cycle for standing timber is estimated by Sveaskog to amount to an average of 100 years in northern Sweden and 80 years in southern Sweden. **Cash flows are calculated on the basis of felling volumes** according to Sveaskog's current felling plan and assessment of future price and cost development. **Prices are based on a rolling ten-year average** (2013–2022). Regarding the **cost development, the current normal cost is applied**, i.e. an average of the previous year's cost as well as the cost for the year and the next year's budget. The inflation assumptions in the model are based on estimated future development during the valuation period. Cash flow before tax is **discounted at an interest rate of 4.5 per cent** (4.5). Sveaskog's Board of Directors assesses that this interest rate **corresponds to the long-term cost of capital for an investment in forest assets** and that is not affected by short-term fluctuations in market rates. According to current felling estimates, which date from 2022 and are based on a forest optimisation model, felling will amount to approximately 5.1 million m³sub per year (6.3). This level is estimated to **increase steadily until 2033, to then remain at a level of approximately 6.8 million m³sub until 2037**. The level is **then estimated to decrease slightly to approximately 6.3 million m³sub (7.2–7.9)**. In 2022, approximately 53 per cent (54) of Sveaskog's own forest volume was sold as **sawlogs to sawmills** and 43 per cent (42) comprised **pulpwood** which was sold to the pulp and paper industry. **Other volumes consisted of, for example, biofuel in the form of rejected branches and treetops, which are primarily used as fuel wood; this volume is not included in the valuation.**"...

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Measuring fair value less costs to sell of standing timber
Observed practice example 1, Sveaskog 2022 Annual Financial Statements
(p82) (emphasis added) (2 of 4 slides)

Note 14 Total forest assets – Biological assets and forest land ... Biological assets model assumptions (emphasis added)

“Revenue (**timber prices**) is based on **prices from a ten-year average (2013–2022)** and thereafter on estimated development during the valuation period **with a nominal price increase of 2.0 per cent (1.75) per year**. This estimated development is adjusted when the company forecasts a different development in their long-term plans.

For the production costs (**felling costs**), a current normal cost is applied that corresponds to the **average of three years** (outcome for the current year, the previous year and the budget for the coming year). These costs are based on an estimated development during the valuation period of 2.0 per cent (2.0) per year.

Sveaskog has set aside areas of productive forest land as nature conservation areas. These areas are not included in the value of forest assets.”

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Measuring fair value less costs to sell of standing timber
Observed practice example 1, Sveaskog 2022 Annual Financial Statements
(p82) (3 of 4 slides)

Note 14 Total forest assets – Biological assets and forest land ...

Summary model assumptions – Forest assets – biological assets and forest land

Summary of model assumptions¹	2022	2021
Valuation price per cubic metre of forest in SEK	5-year average	5-year average
Timber stocks per million cubic metres of forest	Forest registers as of October 2022	Forest registers as of October 2021
Discount rate	4.50%	4.50%
Revenue	10-year average	10-year average
Nominal price increase	2.00% per year	1.75% per year
Costs	Normal cost ¹	Normal cost ¹
Nominal cost increase	2.00% per year	2.00% per year

1) Normal cost = outcome for the current year and the previous year as well as budget for the coming year.

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Measuring fair value less costs to sell of standing timber

Observed practice example 1, Sveaskog 2022 Annual Financial Statements (p82) (emphasis added) (4 of 4 slides)

Note 14 Total forest assets – Biological assets and forest land ... Sensitivity analysis based on key measurement parameters and their impact on Sveaskog's forest assets (emphasis added)

TOTAL FOREST ASSETS

Valuation price per cubic metre of forest in SEK A reduction in the market value of SEK 5 per cubic metre of forest lowers the value of forest assets by approximately MSEK 1,300 (1,300). An increase in the market value of SEK 5 per cubic metre of forest increases the value of forest assets by approximately MSEK 1,300 (1,300).

Timber stocks per million cubic metres of forest A reduction in timber stocks of 5 million cubic metres of forest lowers the value of forest assets by approx. MSEK 1,700 (1,600). An increase in timber stocks of 5 million cubic metres of forest raises the value of forest assets by approx. MSEK 1,700 (1,600).

BIOLOGICAL ASSET

Discount rate A decrease in the discount rate by 0.5 percentage points will increase the value of the biological asset by approx. MSEK 8,500 (7,400). An increase in the discount rate by 0.5 percentage points will reduce the value of the biological asset by approx. MSEK 6,800 (5,900)

Revenue (timber prices) A decrease in the annual price increase by 0.5 percentage points will reduce the value of the biological asset by MSEK 13,700 (12,700). An increase in the annual price increase by 0.5 percentage points will increase the value of the biological asset by approx. MSEK 17,200 (15,700).

Expenses (felling, forest management, road and joint costs) An increase in the annual cost increase by 0.5 percentage points will reduce the value of the biological asset by approx. MSEK 8,900 (8,400). A decrease in the annual price increase by 0.5 percentage points will increase the value of the biological asset by approx. MSEK 7,100 (6,700).

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Fair value of a biological asset

Observed practice: approaches for standing timber

Cost approach used by 7 of 25 companies in PwC study to measure the fair value of **newly planted trees**.

Source: PwC, *Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber*, 2011, (p11)

Extract from Note 16 Biological Assets to Smurfit Kappa's consolidated financial statements for the year ended 31 December 2022 (emphasis added)

The age threshold for young pine plantations is 96 months and for young eucalyptus plantations is 48 months. As young plantations are not available to sell or harvest, the **cost approach** is used to measure their fair value. **The cost approach is based on the published index by the Colombian government which details the cost of establishing and maintaining a hectare for each species across various age brackets. The number of hectares planted is recorded in the Group's Forestry Information System. ...**

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Comparing measurement models: asset whose service potential is consumed through use

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Cost model: a non-financial asset

- » Initial measurement = historical cost.
- » Subsequently, modified measurement to reflect, when relevant:
 - » the **consumption of its service potential** (called depreciation or, if an intangible asset, amortisation); and
 - » that part of the historical cost of the asset is no longer recoverable because of **impairment** due to, for example
 - » deterioration of the asset quality; or
 - » a decline in its economic value.

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Revaluation model: a non-financial asset

- » Initial measurement = historical cost.
- » Thereafter, accounting policy by class of PPE/intangible:
 - » cost model or **revaluation model**. However, the revaluation model is available only for items of PPE whose fair value can be measured reliably and intangibles that trade in an active market.
- » At the end of a reporting period a revalued item's carrying amount cannot differ materially from its fair value (triggers another revaluation)
- » Revaluation increases and decreases presented in OCI (no 'recycling')
 - » nevertheless, impairments and reversals of impairments are presented in profit or loss.
- » The revaluation model maps closely to economics because it separates:
 - » the **consumption** of the assets service potential (measured at current market value); from
 - » the effect of **price changes** of the item in the period.

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Fair value model: a non-financial asset

- » Initial measurement = historical cost.
- » Thereafter accounting policy by class of investment property: cost model or **fair value model**.
- » At the end of a reporting period the item's carrying amount = its fair value (sometimes called mark-to-market) with change in fair value presented in profit or loss of the period in which fair value changed.
- » No impairment testing!
- » Although accounting financial position maps closely to economics, unlike the revaluation model, in financial performance the fair value model does not distinguish between/separate:
 - » the consumption of the assets service potential (measured at current market value); from
 - » the effect of price changes of the item in the period.

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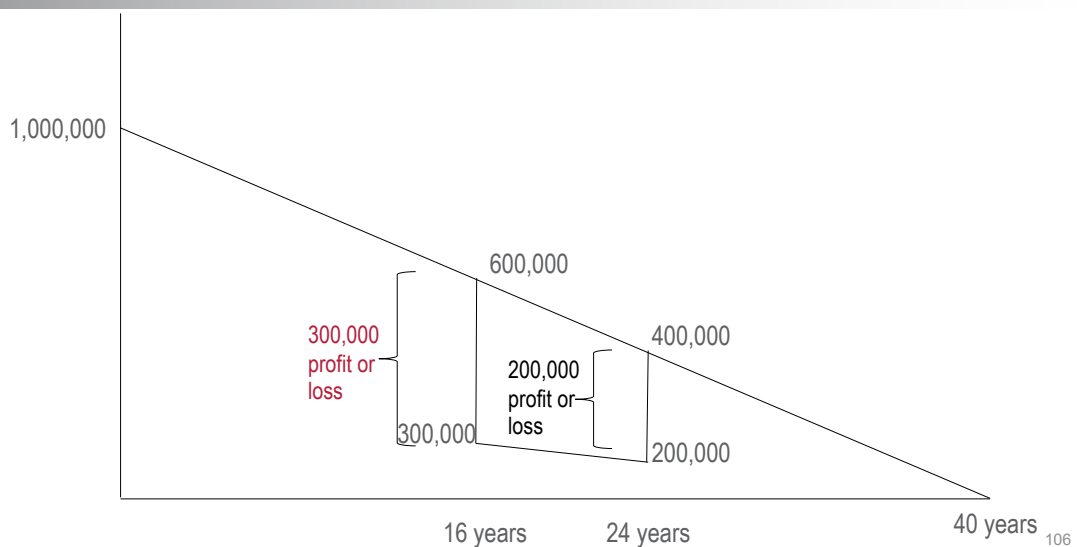
Example comparing cost model, revaluation model and fair value model: item's service potential consumed entirely through use and evenly over time

- » 1 January 2011 you pay \$1 million and gain control of a building
 - » estimated useful life = 40 years
 - » depreciation method = straight-line
 - » nil residual value
- » 31 December 2018: fair value = \$1.2 million
- » 31 December 2026: fair value (= recoverable amount) = \$300,000
- » 31 December 2034 fair value (= recoverable amount) \$800,000

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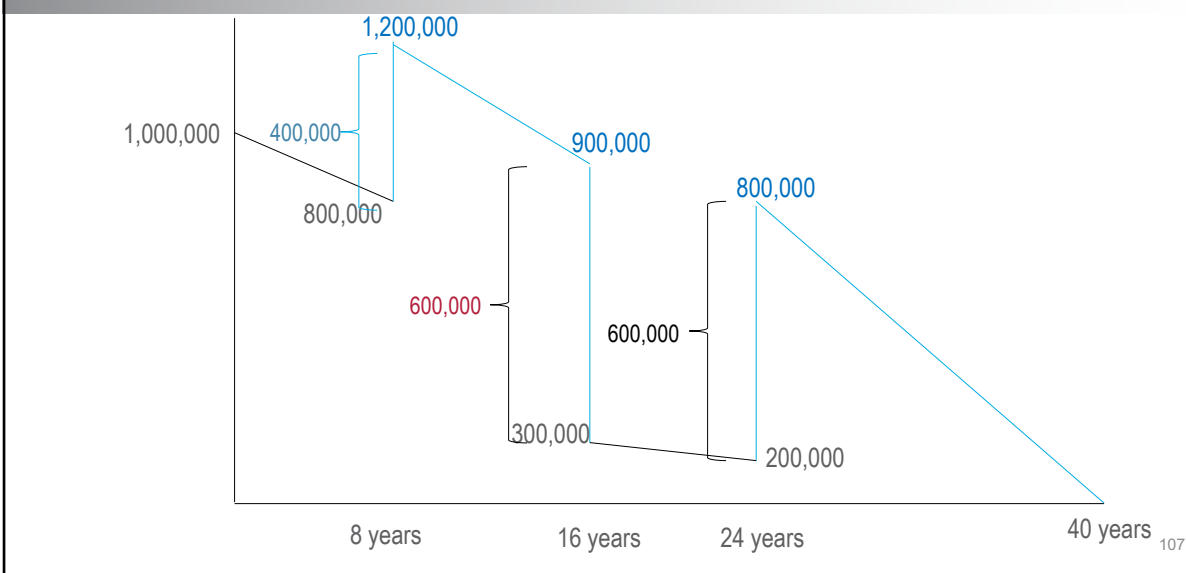
Cost model: item's service potential consumed entirely through use and evenly over time



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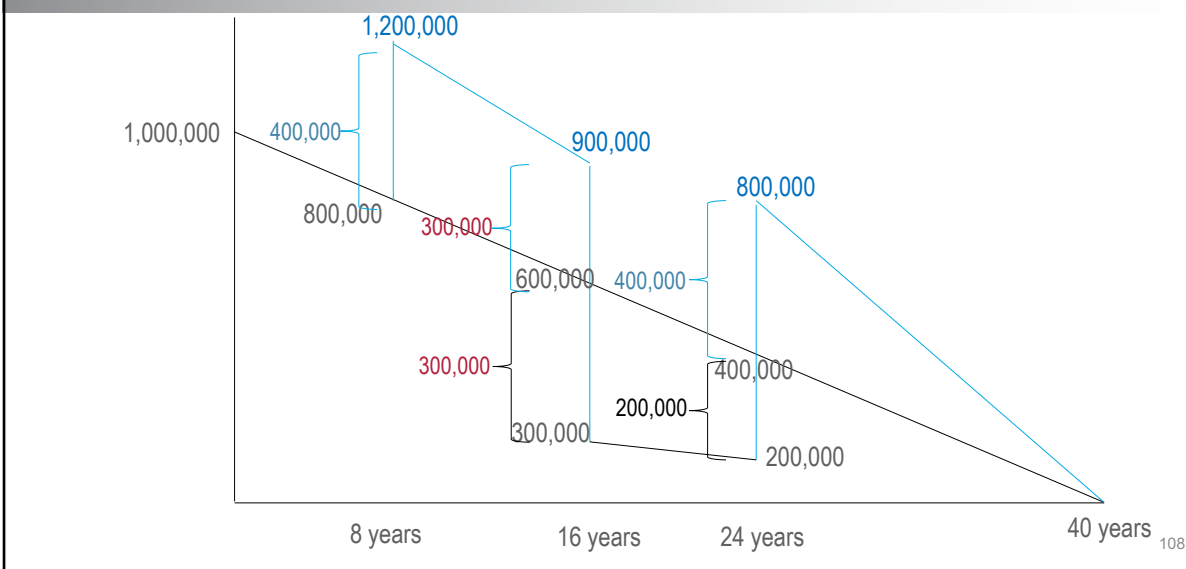
106

Fair value model: item's service potential consumed entirely through use and evenly over time



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Revaluation model: item's service potential consumed entirely through use and evenly over time



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Comparing cost model, revaluation model and fair value model
reporting performance: asset consumed entirely through use

2011 to 2050 (40 years)	Cost model	Revaluation model	Fair value model
Profit or loss	(1,000,000)	(1,500,000)	(1,000,000)
- depreciation	(900,000)	(1,400,000)	
- impairment	(300,000)	(300,000)	
- impairment reversal	200,000	200,000	
- fair value change income			1,000,000
- fair value change (expense)			(2,000,000)
Other comprehensive income		500,000	
- revaluation		800,000	
- revaluation decrease		(300,000)	
Comprehensive income	(1,000,000)	(1,000,000)	(1,000,000)

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Comparing cost model, revaluation model and fair value model
reporting performance: asset consumed entirely through use then sold

Assume the entity sold the building on 31/12/2022 for \$1,050,000.

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Comparing cost model, revaluation model and fair value model reporting performance: asset partly consumed through use and then sold

2011 to 2022 (12 years)	Cost model	Revaluation model	Fair value model
Profit or loss	50,000	(350,000)	50,000
- depreciation 2011 to 2022	(300,000)	(350,000)	
- profit on sale of PPE in 2022	350,000		
- fair value change income in 2018			400,000
- fair value change (expense)			(350,000)
Other comprehensive income		400,000	
- revaluation in 2018		400,000	
Comprehensive income	50,000	50,000	50,000

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Comparing cost model, revaluation model and fair value model summary of class discussion

- » Which model provides the most relevant (decision-useful) information by mapping most closely to the economics of the building over time? Choose one of: 1) cost model; 2) revaluation model; or 3) fair value model.
- » Which model gives management most flexibility in reporting profit or loss for the period? Choose one of: 1) cost model; 2) revaluation model; or 3) fair value model.
- » Which model reports least profit or loss over the life of the asset? Choose one of: 1) cost model; 2) revaluation model; or 3) fair value model.

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Comparing cost model, revaluation model and fair value model summary of class discussion

- » If building is classified as investment property, could the accounting policy for investment property likely be change from the cost model to the fair value model? Choose one of: 1) Yes; or 2) No.
- » If building is classified as investment property, could the accounting policy for investment property likely be change from the fair value model to the cost model? Choose one of: 1) Yes; or 2) No.
- » If building is classified as PPE, could the accounting policy for buildings classified as PPE likely be change from the cost model to the revaluation model? Choose one of: 1) Yes; or 2) No.
- » If building is classified as PPE, could the accounting policy for buildings classified as PPE likely be change from the revaluation model to the cost model? Choose one of: 1) Yes; or 2) No.

An entity can change voluntarily an accounting policy only if the new policy results in **more relevant** information (paragraph 14(b) of IAS 8) “it is highly unlikely that a change from the fair value model to the cost model will result in a more relevant presentation” (paragraph 31 of IAS 40) “With the passage of time, cost-based measurements become increasingly irrelevant.” (paragraph B33(b) of the Basis for Conclusions on IAS 40)

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Depreciation

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Depreciation *the concept*

- » Depreciation/amortisation expense represents the consumption of the economic resource that constitutes the asset
 - » put another way, depreciation represents the **consumption of the asset's service potential**
- » Information about an entity's financial performance in a period, reflected by changes in economic resources (eg a manufacturing plant asset) is useful in assessing the entity's past and future ability to generate net cash inflows (Conceptual Framework)
- » expenses are decreases in economic benefits during an accounting period in the form of depletions of assets... (Conceptual Framework)

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Depreciation: the concept *Summary of class discussion*

When is land depreciated? Choose one of:

- 1) never—its service potential does not reduce with time/use
- 2) always—its service potential always reduces with time/use
- 3) when its recoverable amount declines below its unmodified historical cost (for example, when market prices decline)
- 4) when its service potential is consumed through use (for example, when used as a landfill site)
- 5) when its service potential is consumed with time (for example, a 99 year right to use the land)
- 6) **both 4) and 5) above**

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Depreciation estimates

- » Allocating depreciation requires judgement to
 - » determine the appropriate depreciation method
 - » identify components of an item that must be depreciated separately
 - » estimate the useful life of an item
 - » measure the residual value of an item
- » Note
 - » depreciation judgements apply equally to the cost model and the revaluation model
 - » measuring residual value is akin to measuring the fair value of an older item

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Depreciation: principle and selected application guidance

- » **The principle:** depreciation is the systematic allocation of the depreciable amount of an asset over its useful life
- » **Application guidance:**
 - » The **depreciation method** must closely reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity.
 - » Significant parts (called **components**) of a depreciable item with materially different consumption patterns must be depreciated separately to more faithfully represent the consumption of the asset's service potential. (see, for example, paragraph BC26 of the Basis for Conclusions on IAS16)

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Depreciation: selected application guidance

» **Depreciable amount** =

- » If cost model: historical cost less residual value
- » If revaluation model: fair value less residual value

» **Residual value** = the amount that the entity would currently obtain from disposal of the asset (less estimated disposal costs) if the asset was already of the age and in the condition expected at the end of its useful life

» **Useful life** (entity specific) = either

- » the period over which the asset is expected to be available for use by the entity; or
- » the number of production or similar units expected to be obtained from the asset by the entity.

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Depreciation example: a furnace


» A furnace used to fire a porcelain manufacturer's crockery cost ETB100 million:

- » ETB60 million for the 'permanent' basic structure
- » ETB20 million for the electronics (replace after 6 years)
- » ETB19.8 million for the protective lining (replace every 3 years)
- » ETB0.2 million health and safety certification (required every 2 years)

» Management expect to continuously use the furnace for its entire 12-year economic life.

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Depreciation example: a furnace

Summary of class discussion

Must any components of the furnace be depreciated separately?

Choose one of:

- 1) No, depreciate the furnace as a whole evenly over 12 years
- 2) Yes, 4 components—(i) basic structure; (ii) electronics; (iii) lining; and (iv) health and safety inspection
- 3) Yes, 3 components—(i) basic structure; (ii) electronics; and (iii) lining (ie health and safety inspection component need not be depreciated separately)
- 4) Yes, 2 components—(i) basic structure; and (ii) combined electronics and lining component (ie health and safety inspection component need not be depreciated separately)

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Depreciation example: executive jets

A business buys 2 identical executive jets:

- » **Jet1** is used to provide executive air travel services to discerning clients. Management expect to sell Jet1 after it has travelled 2,000,000 air-miles.
- » **Jet2** is for the exclusive use of the airline's Directors and Executive Management. As part of their remuneration package they each have the exclusive use of the jet for 30 days per year. The airline expects to:
 - » replace Jet2 three years after acquiring it (irrespective of the distance Jet2 has travelled)
 - » donate Jet2 to an international disaster relief programme when it is three years old.

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Depreciation example: executive jets
Summary of class discussion

Which depreciation method must be used for the jets?

Choose one of:

- 1) straight-line method for both jets
- 2) units of production method (based on air-miles travelled) for both jets
- 3) revenue-based depreciation for both jets
- 4) straight-line for Jet1 and units of production (based on air-miles travelled) for Jet2
- 5) **straight-line for Jet2 and units of production (based on air-miles travelled) for Jet1**
- 6) management is free to choose a depreciation method

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Depreciation example: executive jets
Summary of class discussion

The useful life of each jet is? Choose one of:

- 1) Jet1 and Jet2 = three years
- 2) Jet1 and Jet2 = 2,000,000 air-miles
- 3) **Jet1 2,000,000 air-miles and Jet2 three years**
- 4) Jet1 three years and Jet2 2,000,000 air-miles

The residual value of Jet2 is? Choose one of:

- 1) nil
- 2) **the amount that the airline could sell Jet2 for today (the measurement date) if Jet2 was already three years old and in the condition that the airline expects it to be in after using it for three years.**
- 3) another amount

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Depreciation example: coffee plantations
Summary of class discussion

Which method of depreciation best reflects how a coffee farmer expects to consume the service potential of its growing coffee plants? Choose one of:

- 1) the straight-line method
- 2) the double-declining-balance method
- 3) **the units-of-production method on the basis of total expected fruit to be produced by the coffee plant over its useful life**
- 4) another method (specify)
- 5) management is free to choose whatever depreciation method it likes

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Depreciation example: coffee plantations
summary of class discussion

When should a coffee grower begin depreciating a growing coffee plant (sometimes referred to as the 'point of maturity')?

Choose one of:

- 1) when the coffee plant is planted
- 2) **when the first fruit is harvested (say 2 years after planting)**
- 3) **when the first fruit yield of commercial value is harvested**
- 4) when the first fruit yield of maximum yield is harvested (say 5 years after planting)

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Variable consideration mini-case study

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Variable consideration IFRS 3 *Business Combinations* *Summary of class discussion*

Recognition: element **existence**.

What do you think? Choose one of: **1) principle;** 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

Measurement: at initial recognition, acquisition-date fair value; and subsequently (unless classified as equity and consequently not remeasured), measurement date **fair value**.

What do you think? Choose one of: **1) principle;** 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

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Variable consideration

IFRS 9 *Financial Instruments* (for example, a derivative)

Summary of class discussion

Recognition: element **existence**.

What do you think? Choose one of: 1) principle; 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

Measurement: at initial recognition (when first become party to the contractual arrangement) fair value; and subsequently, at measurement date **fair value**.

What do you think? Choose one of: 1) principle; 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

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Variable consideration

IFRS 15 *Revenue from Contracts with Customers*

Summary of class discussion

Recognition: when it is probable (more likely than not) that the entity will collect the amount of consideration to which it will be entitled when the uncertainty relating to that condition is resolved. In particular assess only: (i) the ability (ie financial capacity) of the customer to pay; and the intention of the customer to pay. (see paragraphs 9(e) and BC42 to BC46). However, **variable consideration** is recognised only to the extent that it is **HIGHLY PROBABLE** that a significant reversal will not occur (see paragraphs 56 through 59 and BC203 through BC219)

What do you think? Choose one of: 1) principle; 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

Measurement (paragraph 53):

» expected value when large number of contracts with similar characteristics; or

» single most likely amount when contract has only two possible outcomes.

What do you think? Choose one of: 1) principle; 2) artificial construct/notion; 3) rule; or 4) a combination of a principle and a rule (explain).

» What is the judgement mindset? **What are the necessary judgements?**

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Variable consideration

IFRS 16 *summary of class discussion*

Recognition: short-term lease exception assessment applied without an optional lease renewal period unless the lessee is '**reasonably certain**' to extend the lease beyond the non-cancellable period.

What do you think? Choose one of: 1) principle; 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

Measurement: the present value of the lease payments includes optional lease payments only when the lessee is '**reasonably certain**' to extend the lease beyond the non-cancellable period

What do you think? Choose one of: 1) principle; 2) artificial construct/notion; or 3) rule.

» What is the judgement mindset? **What are the necessary judgements?**

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Variable consideration in complex supplier arrangements

Multiperiod conditional supplier rebates

What do you think?

» What are the necessary judgements and judgement mindset/s?

» What disclosures are affected entities required to make?

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**Variable consideration
complex supplier arrangements**
Summary of class discussion

- » A convention (or conventions) for variable consideration in contracts with suppliers of inventories, PPE, intangible assets, investment properties etc is yet to be codified in the relevant Standards (ie IAS 2, IAS 16, IAS 38, IAS 40).
- » Consequently, diversity in practice likely as other IFRSs (relevant when applying the IAS 8 hierarchy) use a range of treatments. However:
 - » enhanced disclosures apply (paragraphs 17(c), 122 and 125 of IAS 1)
 - » regulatory action, for example, UK FRC regarding Tesco and thereafter focussing on others too.

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**Variable consideration
complex supplier arrangements**
Summary of class discussion

- » Paragraph 11 of IAS 2 specifies that trade discounts, rebates and other similar items are deducted in determining the cost of inventories.
- » The IFRIC clarifies that the following discounts received by a purchaser of goods should be deducted from their cost:
 - » cash discounts (August 2002)
 - » prompt settlement discounts (November 2004)
 - » other rebates and discounts (November 2004) unless the rebate specifically and genuinely refunds selling expenses

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Variable consideration
complex supplier arrangements
Summary of class discussion

- » Some of the biggest accounting firms provide the following recognition application guidance:
 - » if it is **probable** that the contractual rebate or volume discount will be earned and the amount can be measured reliably, then the discount should be recognised as a reduction in the purchase price of inventory when it is first recognised
 - » If **not probable** then recognised inventory at the gross amount (ie before rebate) until the rebate becomes probable
 - » p585 and p586 of KPMG's Insights into IFRS 2015/2016
 - » p674 and p675 of Deloitte's iGAAP 2015 (by analogy to IAS 34 *Interim Reporting*)

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Thank you for actively participating
in the session!

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