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BLAB

HANDOUTS

CORPORATE FINANCIAL REPORTING

-SECOND PARTIAL-

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Revenue recognition (IFRS 15)

IFRS 15: Revenue from Contracts with Customers -> It has been a joint project of the FASB (Financial Accounting Standard Board, the United States regulator for accounting standards) and IASB (we can say that it has been a successful project as there has been other tries for other unsuccessful projects), as the overall aim was to develop a single, principles-based revenue standard for U.S. GAAP and IFRS that would *apply to every industry* -> some industries will be affected more than others. If *industry-specific revenue recognition guidance is being used*, that entity is likely to be significantly affected by the new standard (e.g. software, construction, real estate and, more generally, U.S. GAAP companies, which are more industry specific). It has been issued in May 2014, but it became effective after 1st January 2018 (Early application is permitted and supersedes IAS 11 and IAS 18). US: Topic 606 (supersedes ASC 605) -> Effective for fiscal years beginning after December 15, 2017 (including interim periods). It is *excluded*:

- *Leases and insurance contracts*
- *Financial instruments*
- *Biological assets*

Why the Need for a New Standard? Both U.S. GAAP and IFRS were deficient:

- U.S. GAAP had complex, *highly detailed requirements* for specific industries or transactions ⇒ *different accounting for transactions that are economically similar*, which is a problem for comparability for investors and creditors that have lower information than managers (and accounting is meant to reduce this information gap, even though it depends by the quality of the information provided).
- The problem with IFRS was just the opposite: *not enough guidance* ⇒ its two main revenue recognition standards (IAS 11 and IAS 18) were somewhat vague and difficult to apply

Much of the problem stems from the inability of either regime to cope with changing business models (E.g. mobile phone contracts sold with a free phone, software sold with training and future upgrades). Business practices change fast, usually faster than how fast the regulation change.

What does the New Standard accomplish?

- *Provides a more robust framework* for addressing revenue recognition issues
- *Removes inconsistencies* from existing requirements
- *Improves comparability* across companies, industries, capital markets
- *Improves disclosure requirements*
- *Simplifies financial statement preparation* by streamlining the volume of guidance

➔ In general, IFRS 15 aims to give analysts and investors confidence that revenue is being presented on a consistent basis (so respecting the principle of comparability)

Revenue is "income arising in the course of an entity's ordinary activities" (so the activity that is commonly done by the company and the reason for which the company is born), which generally arises from the sale of goods or the provision of services to customers -> *excludes borrowings*, *amounts contributed by shareholders* (e.g. equity issues) and *gains* (e.g. gains on disposal of non-current assets). The core principle of IFRS 15: A business

should recognize revenue from contracts with customers *when it transfers promised goods or services to the customer* (and not when cash is paid). For example, we are a car dealer, and we decide on Monday to sell on Friday a car which will be paid in full in two weeks -> we have to recognise the revenue on Friday (even though the deal is concluded on Monday, we cannot recognize it on that day as the contract is not finalized = the good is not given yet to the customer -> in the meantime, there could be some accident that destroys the car), independently on the receiving on the cash (we are following the *accrual principle*, not the cash principle). In case the customer gives us a prepayment, we'll have to *recognise them as a liability on Monday* (as in case I'm not going to give the car I'll have to pay back the prepayment), but I still have to recognize the revenue on Friday (as, like before, the contract is not finalized yet) *for the amount of the consideration promised* (i.e. the transaction price) by the customer in exchange for the transferred goods or services -> in case the contract will be executed, we'll eliminate the liability and collect the difference on Friday (unless we have agreed differently). Otherwise, we'll have to pay back to our customer the prepayment.

Five step model

Step 1: Identify the Contract

A **contract** is "an agreement between two parties that creates enforceable rights and obligations". A contract with a customer should be accounted for only when:

- The *parties are committed to the contract* (so somehow, they have to sign it)
- *Each party's rights* under the contract *can be identified*
- *Payment terms can be identified* (the amount, the method of payment, the timing, if there is someone I can ask these money in case the customer doesn't pay me…)
- The contract *has commercial substance*
- *It is probable that the entity will collect the consideration* due for the goods or services transferred to the customer (so we are not selling to someone who is almost in bankruptcy, for example)

➔ Payments that are received from a customer *before* these conditions are satisfied must be recognised as a *liability* (we are in front of a prepayment)

Step 2: Identify the Performance Obligations

A **performance obligation** is "a promise in a contract with a customer to transfer to the customer good(s) or service(s)" -> if in the past it was something relatively easy (as, most of the time, contracts regarded the transfer of one single good/service), today it is a problem as in modern businesses there are *multiple products and services within the same deal* (such as selling a pc together with a personalized software) -> it is important to understand if two goods/services should be accounted distinctly or with a bundle, as it is going to affect how the company should disclose them and affect profitability. A good or service is *distinct* if:

- The customer could benefit from the good or service on its own; and
- The promise to transfer the good or service is separately identifiable within the contract

A company should *account separately* for performance obligations if the goods/services are distinct. If a promised good or service is not distinct, it must be *combined with other*

promised goods or services to form a *distinct "bundle"*. In this case, all of the goods or services promised in a contract might be *treated as a single performance obligation* (i.e. they are highly interrelated).

Example 1

A company licenses customer relationship management software to a customer (first product). In addition, it promises to provide consulting services (second services) to customize the software for total consideration of €600.000. The company is providing a significant service of integrating the goods and services (the license and the consulting services) into the combined item for which the customer has contracted, as there is a customization. The software is significantly customized by the entity in accordance with the specifications negotiated with the customer -> *could the customer use the software independently from the consulting services?* It seems not, because there is the customization.

➔ The company would account for the license and consulting services together as one performance obligation. Revenue for that performance obligation would be *recognized over time* by selecting an appropriate measure of progress towards complete satisfaction of the performance obligation

We said before that making this distinction is important as *it affects profitability*, but in what way? Let's assume that the price of the software is 400.000€ and the price of the consulting services, which lasts 2 years, is 200.000€. If the company has the classic reporting period (1y from 1/1 to 31/12), how much of the 600.000€ should be recognised at the end of the different years? In a first moment, we might think that we should consider the 400.000€ for the software and divide just the price of the consulting services between the 2 years, for a total amount of 500.000€ during the first year and just 100.000€. In reality, because the text tells us that they are the same product we cannot account them separately, so we'll have to split the total amount of 600.000€ between the two years -> different solution different revenues different profitability.

Example 2

A company enters into a contract to design and build a hospital. Also, the company is responsible for the overall management of the project, including site clearance, procurement, installation of equipment and finishing etc. The company is providing a significant service of integrating the above goods and services into the combined item (i.e. the hospital). The goods or services are significantly modified and customised to fulfil the contract.

➔ The company would account for the bundle of goods and services as a single performance obligation because these are highly interrelated. Revenue for that performance obligation would be recognized over time by selecting an appropriate measure of progress towards complete satisfaction of the performance obligation.

We have to be careful as the additional services and goods could be *purchased with different entities*, meaning the company will have different contracts, which causes different performance obligations and, in the end, different revenues accounted.

Another example. Let's assume we have sold an elevator and, together with that, 2 years of ordinary maintenance -> these two performances are strictly bounded, so the revenues will be accounted as a single performance. If, together with these 2 years, the company gives to the customer the possibility to renew the maintenance service for other 2 years, the company will account this separately, as the contract is not completed yet. In addition, we can consider also the possibility that the maintenance services are provided by different companies.

Step 3: Determine the Transaction Price

Transaction price is "the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer". The *transaction price may vary both upward and downward* because of items such as *discounts* (such as in case the dealer delivers the product earlier), *refunds*, *incentives*, *penalties* etc. -> the dealer has to make predictions about the behaviour of the customer, which implies a high level of discretionality to managers. In these circumstances, the amount of the variable consideration should be estimated using either:

a) The *"expected value" method*
b) The *"most likely amount" method*
➔ The chosen method should be the one that best predicts the amount of the consideration

Example 1

A company enters into a contract to construct an asset for a customer. The agreed price is €500,000 and the specified delivery date is 30 September 2017. However, if the asset is delivered after this date, the company will suffer a late delivery penalty of €20.000 for each week between 30 September 2017 and the actual date of delivery -> the dealer need to make estimates about the capability of the customer to respect the deadlines, usually by *looking at the past*, *how competitors have dealt with similar products* (in particular in case the company is not very old and it does not have enough historical data), and the *most relevant and current macroeconomic trends* (as they influence the supply chain). The company estimates that the probability of the asset being delivered on time is 80%. But there is a 10% probability that the asset will be delivered one week late and a further 10% probability that the asset will be delivered two weeks late -> we have to calculate the *expected price*:

$$500{,}000 * 80\% + 480{,}000 * 10\% + 460{,}000 * 10\% = 494{,}000$$

This is an estimate, which will be allocated differently in case the company decides to account it over time or upon the conclusion of the building. At the end of the project, the company will have to verify the actual timing of delivery and verify if the deadline have been respected or not.

Example 2

A company which is building an asset for a customer will receive an incentive bonus of €100.000 if the asset is completed by the end of 2017. However, this bonus will not be paid if the completion date is any later than this (even by a single day). The bonus is in

addition to the agreed price of €1m. and the company estimates the probability of completion by the end of 2017 to be 95% -> we have to consider the *most likely amount*:

$$1{,}000{,}000 + 100{,}000 = 1{,}100{,}000$$

➔ It is possible to argue about how much should be the probability that we have to consider *very likely* -> high level of judgement given to management

Step 4: Allocate the Transaction Price

The **transaction price** is allocated between performance obligations according to the stand-alone selling price of each obligation. If the transaction price is less than the sum of the stand-alone selling prices of each performance obligation, the customer is receiving a *discount* for purchasing several goods or services together. Such a discount is allocated usually proportionately amongst performance obligations (but it depends on the specifics of the contract).

Example: A company enters into a contract with a customer to sell products A, B and C for €36. The entity regularly sells products A, B and C separately for €9, €11 and €20 respectively -> Because the sum of the standalone prices is 40€, but we have sold these 3 items together for a price of 36€, there is a discount of 4€. The entity regularly sells products A and B together for €16 and regularly sells product C for €20.

Because products A and B are transferred at the same time the company accounts for only two separate performance obligations: one for products A and B combined and another one for product C. Because the company regularly sells products A and B together for €16 (i.e. at a €4 discount) and regularly sells product C for €20, the company has observable prices as evidence that the €4 discount in the contract should be allocated only to products A and B. Hence, the entity allocates the transaction price of €36 as follows:

a) products A and B € 16
b) product C € 20
➔ Total €36

Step 5: Satisfaction of Performance Obligations

Revenue is recognised when (or as) a performance obligation is satisfied by transferring a good or service to the customer. The amount of revenue recognised is the amount which was allocated to that obligation. A good or service is transferred only when the customer *obtains control* of that good or service:

- If a performance obligation is satisfied "*at a point in time*" revenue is recognised when the obligation is satisfied (in our example of the car dealer, on Friday at 2p.m. -> we have to be able to identify the exact moment of satisfaction).
- If a performance obligation is satisfied "*over time*", revenue is recognised according to the progress made towards complete satisfaction of the obligation (in the example of the creation of the hospital, during its creation).

For performance obligations satisfied over time, progress may be measured using either:

- *Output methods*: Progress is *measured on the basis of direct measurement of the goods and services transferred to date* (e.g. units delivered, time elapsed)

- *Input methods*: Progress is measured *on the basis of the entity's inputs to date* (e.g. hours spent, costs incurred*) relative to the total inputs required to satisfy the performance obligation*

➔ The chosen method should faithfully depict the entity's progress, depending on the information collected during the process

Contract costs

The costs incurred by an entity towards fulfilling a performance obligation are recognised as a "**contract asset**" until the obligation is satisfied, if:

- The *costs relate directly to the specific contract*
- The *costs generate resources* expected to be used
- The costs are *expected to be recovered*

These costs are then transferred to the Statement of Comprehensive Income as an expense (as they have to be amortized) and are matched against the revenue which is recognised when the obligation is satisfied.

Example: A company enters into a contract to outsource a customer's information technology data centre for five years. The company incurs selling commission costs of €10.000 to obtain the contract (like paying the lawyer, consulting advice, market research…). The customer promises to pay a fixed fee of €20.000 euros per month.

➔ The €10.000 incremental costs of obtaining the contract are recognised as an asset (as, if the company would not have paid these costs, the company would not have the future economic benefits represented by the revenues). The asset is amortised over the term of the contract (i.e. five years) and every time the revenue is recognized, in order to match expenses with revenues.

Presentation

If an entity has performed an obligation by transferring goods or services to a customer and the customer has not yet paid for these goods or services, the entity should present a "contract asset" or a *receivable in the Statement of Financial Position*, depending on the nature of the entity's right to consideration.

- A *contract asset* is recognised when the *entity's right to consideration is conditional on something other than the passage of time*, e.g. future performance of the entity.
- A *receivable* is recognised when the *entity's right to consideration is unconditional except for the passage of time*.

A "*contract liability*" should be presented in the Statement of Financial Position if payment is made before the entity transfers the goods or services to the customer.

Main disclosure requirements

IFRS 15 requires that entities should **disclose**:

- The amount of revenue for the period, analysed into appropriate categories
- Any impairment losses recognised in the period in relation to contract assets or receivables arising from contracts with customers

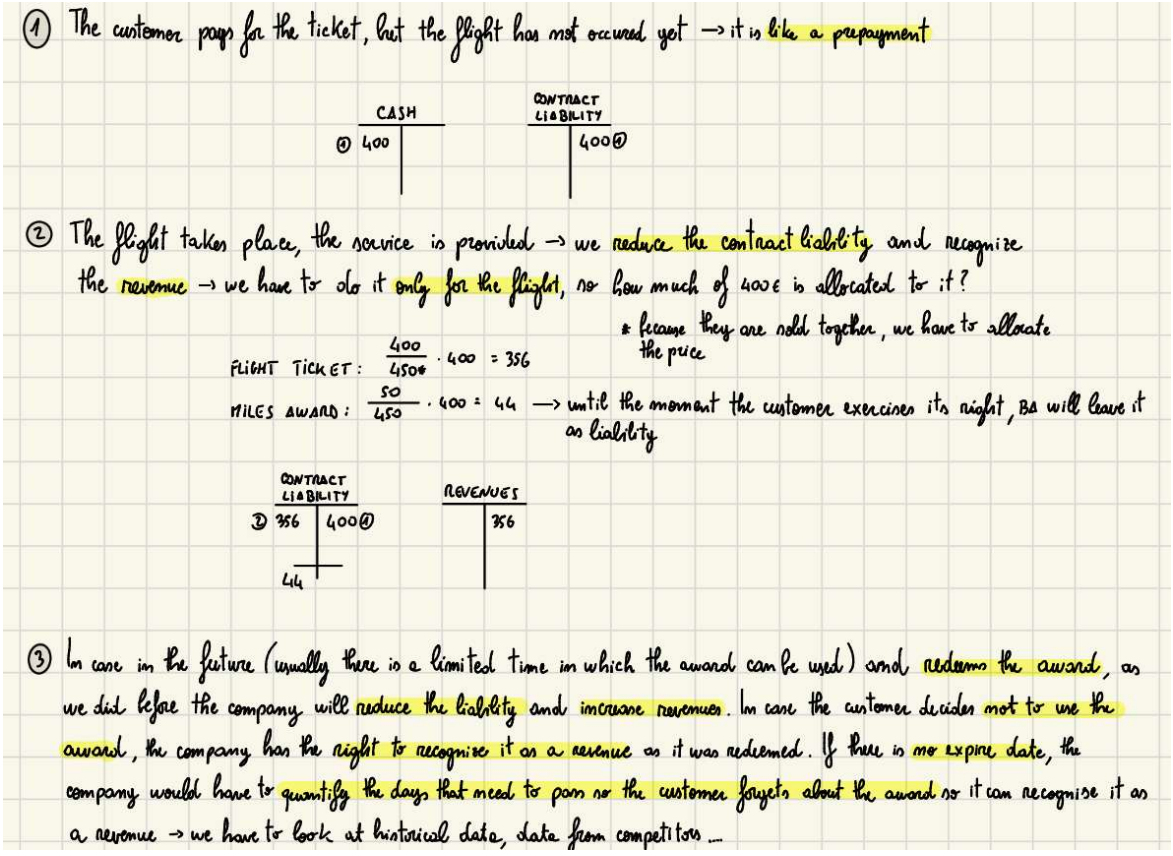
- The opening and closing balances of contract assets and contract liabilities, together with an explanation of significant changes during the period
- The amount of revenue allocated to performance obligations that are unsatisfied at the end of the period
- Significant judgements made by the entity in applying the requirements of IFRS 15

EXERCISES

Services 1 (Steps 2, 3 and 4)

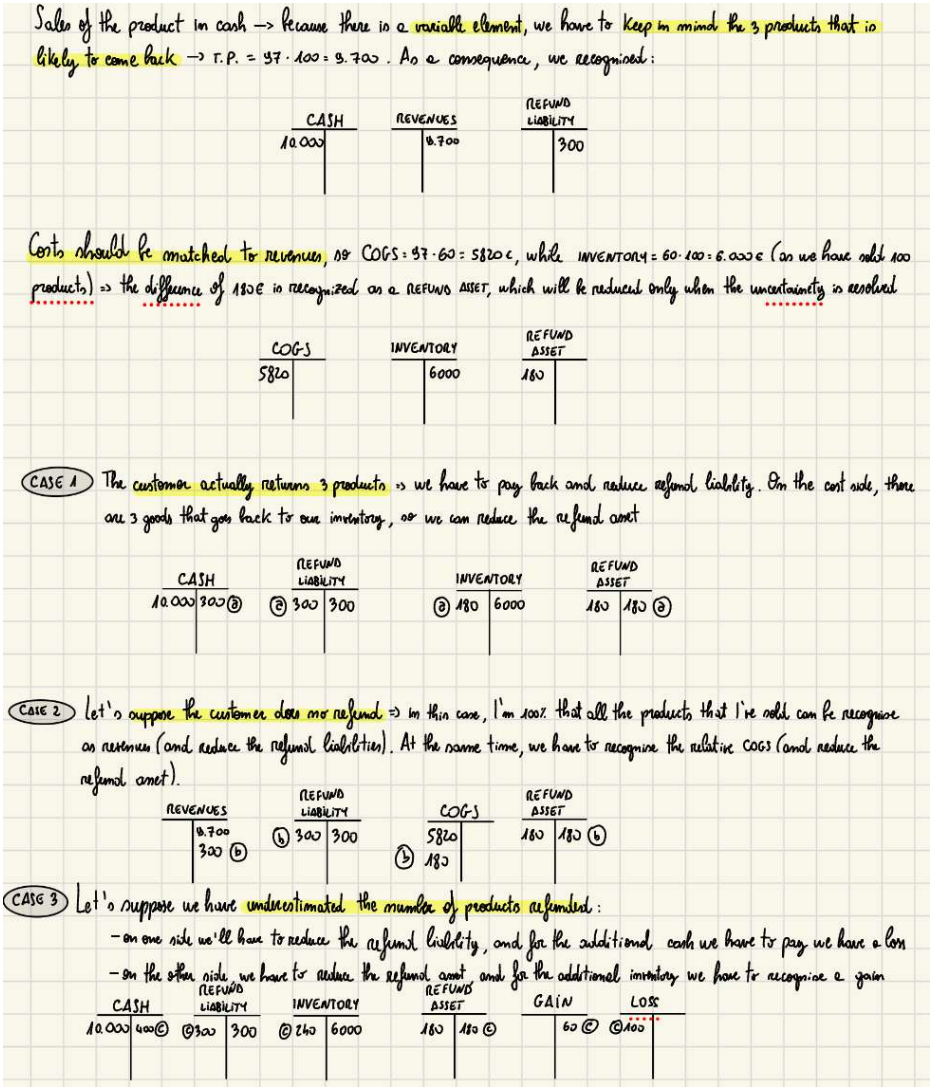
British Airways (BA) sells a round trip ticket from London to New York for €400 (stand-alone selling price). The customer also receives 5.000 award miles with an estimated stand-alone selling price €50. Discuss when BA should recognise revenue, along with any unique issues that the company may face in the recognition of expenses, according to IFRS 15. What are the relevant accounting entries? What are the implications for BA's Income Statement?

Let's consider the step 2, how many performance obligation are there? There are two separate performance obligation, as the customer might buy the ticket (and therefore the award) but not use it and keep the award for the future. The Transaction Price (T.P.) = 400, as there is no variable element that could affect it.



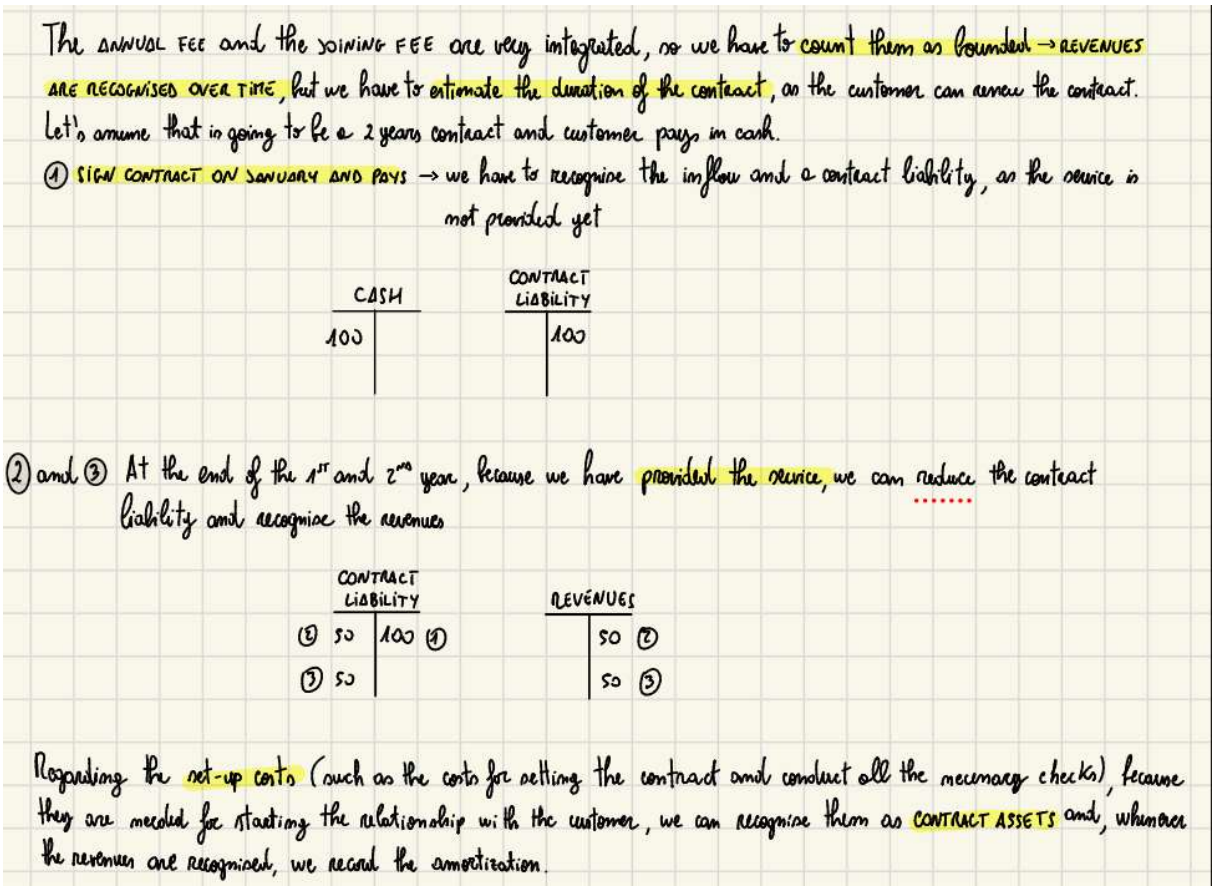
Right of Return (Step 3)

An entity sells 100 products for €100 each. The entity's customary business practice is to allow a customer to return any unused product within 30 days and receive full refund. The cost of each product is €60. To determine the transaction price, the entity decides that the approach that is most predictive of the amount of consideration to which the entity will be entitled is the most likely amount. Using the most likely amount, the entity estimates that three products will be returned. The entity's experience is predictive of the amount of consideration to which the entity will be entitled. Determine the transaction price according to IFRS 15. What are the relevant accounting entries?



Non-Refundable Up-Front Fees (Steps 2, 5 and Contract Costs)

A health club enters into a contract with a customer for one year of access to any of its health clubs. The entity charges the customer a non-refundable joining fee of €100 in part as compensation for the initial activities of registering the customer. The customer can renew the contract each year without paying the joining fee. Should the above fee be recognised as revenue? And if yes, when? How should the entity account for the initial set-up contract costs of €70? In your answers, consider IFRS 15.



Services 2 (Step 5)

During 2005 Company A enters a fixed price contract for the provisions of services for €600.000. At the end of 2005, the contract is assessed as being one third complete, with costs incurred and paid to date of €250.000 and a reliable estimate of €200.000 for costs to complete. When should the company recognise revenue? How much should it recognise? Assuming the customer pays €300.000 in cash by the end of 2005, what are the relevant accounting entries? In your answers, consider IFRS 15.

TP = 600,000€ and total estimated costs for the project 450,000€.

Assuming we are using the output method, at the end of 2005 we should recognise only 1/3 of the revenues, so 200,000€. For the costs, we should split them accordingly to the revenues -> 450,000/3 = 150,000€. Because the customers pay us 300,000€ as a prepayment, we should account cash for 300,000€, revenues for 200,000€ and for the remaining 100,000€ as contract liabilities. Regarding the costs, they have to reduce cash for 250,000€ as that's the amount we have paid, expenses for 150,000€ and for the remaining 100,000€ as prepayment asset (the company has paid more for the furniture, that it is going to receive in the future). Obviously, for the following years we'll have to recognise revenues and costs accordingly to the percentage of the output we have concluded.

Leases (IFRS 16)

Leases is a very important instruments for companies, as statistics affirms that lease transactions are worth a couple of billions of dollars around the world. It is a form of borrowing money -> instead of collecting money from equity, bonds or banks, *they do leases by paying periodically a quote*. Why do companies do leases?

- *100% financing at fixed rates* -> Banks usually offer to lend a fraction of the total cost of the
  property, while *lease agreements require no down payment* (like a deposit required by banks) and payments often remain fixed
- *Protection against obsolescence* -> *Under some lease agreements the lessee has the right to return the asset at any time* (if new models come out, making the old asset less valuable, the company can replace the old model with the new one) -> protection against technological changes. The lessee saves time and resources needed to get rid of the old asset
- *Flexibility* -> Lease agreements may contain *less restrictive provisions than other debt agreements* (e.g. debt covenants, such as a minimum level of interest coverage ratio, a certain level of leverage, how much dividends companies are allowed to pay)

IFRS 16 -> IASB and FASB worked jointly on this project which has supersedes IAS 17. Effective January 2019; early application permitted for companies also applying IFRS 15. US: Topic 842 (supersedes ASC 840, effective for fiscal years beginning after December 15, 2018 (including interim periods).

➔ U.S. GAAP vs. IFRS -> Both standards ensure that leases cannot be used to keep items off the balance sheet, but the former retain the dual model whereas the latter adopts the single lease accounting model

Basic concept

Definition: A lease is a contract between a *lessor* and a *lessee* that gives the lessee the *right to use a specific asset,* owned by the lessor, *for a period of time* in exchange for (typically) periodic cash payments (rents). To be a lease, a contract must *convey the right to control the use* of an identified asset, which means the lessee has the right, during the period of use, to:

- Obtain substantially all of the economic benefits from the use of the asset
- Direct how and for what purpose the assets is used

IFRS 16 vs. IAS 17

IAS 17 (FASB Topic 840) -> Classic case of *economic substance vs. legal form* -> this is a debate that is different from country to country, as it depends by the legal system present:

- common law countries (such as UK, US, Canada…) are more focused on the substance
- code law countries (such as Italy, France, Spain, Germany…) are more focused on legal form.

➔ This has affected the evolving of accounting rules and financial reporting rules

With IAS 17, for the accounting treatment of lease we used the *dual model*, which means that, according to the case, we have to treat the lease as an *operating* or a *finance* lease. In order to make this distinction, we have to answer some questions, such *as are the risks and rewards of ownership of the leased asset transferred? Is lease economically similar to purchasing the underlying asset (so doing the financing by lease of the asset)? Main indicators*:

- If leased asset *is expected to use the asset for the majority of the lifetime of the asset*
- Is the *PV of the lease payments* roughly *90% of the fair value of the asset*
- Does the lessee have the *right to purchase the asset at a deeply discounted price*?

Depending on the answers we have

- If yes ⇒ *finance (capital) lease* -> the lease has to show the asset and the liability in the BS
- If no ⇒ *operating lease* -> it does not go to the BS but it is just an operating expense in the IS

➔ It influences the accounting treatment

The rules of the time *incentives the companies to avoid showing leases in the BS* (for example. Signing a contract of leasing for half of the lifetime of the asset with the possibility of renewing it for the other half).

IFRS 16 -> *Single model* ⇒ No lease classification test, *everything goes to BS* (few exceptions). A lessee should recognise a liability to make lease payments (the lease liability) and a right-of-use (ROU) *asset representing its right to use the asset* (the underlying asset) for the lease term. No substantial changes to lessor accounting, just more disclosures (lessor required to disclose additional information about how it manages the risks related to its residual interest in assets subject to leases).

Why the change?

- *Leases create assets and liabilities*. Prior literature suggests that operating leases behave like debt. *Investors appear to capitalise off-balance sheet operating leases in assessing the riskiness of a firm* -> Couple of papers that shows positive relationship between operating leases and equity risk
- *Removes the need for (noisy) adjustments* (they were made, but they were reduces) -> Investors and analysts frequently adjust lessees' balance sheets and some adjust the income statement:
  - Common practice: lease liability = 8*lease expense
  - Common practice: interest expense = 1/3*lease expense

  Credit rating agencies and banks also make adjustments:
  - Wilkins and Zimmer (1983): survey to lending officers who are found to perceive term loans, recognised capital leases and footnoted leases to be similar when making lending decisions
  - Altamuro et al. (2014): bank loan spreads are better explained by financial ratios adjusted for the capitalisation of operating leases

  - Kraft (2014): capitalisation of operating leases is one of the most frequent adjustments made by Moody's when assigning credit ratings
- *The new lease accounting rules*: Facilitate faithful representation, enhance comparability, mitigate opportunities for accounting manipulation

Impact of the Change

Impact on the capital markets -> means how investors and creditor perceived the change of the rules.

Academic Research, Recognition (so showing the value in the statements) vs. Disclosure (amounts that are just discussed in the Nots) -> Extensive research compares the extent to which recognised vs. disclosed numbers can explain variation in stock prices and returns (as the whole point of accounting is provide information to investors to make decisions) -> Investors typically find recognised values more relevant than disclosed values, as it is just a myth that investors have the time and resources to read and fully understand Notes. Investigated settings:

- *Stock option expense* (Aboody 1996)
- *Post-retirement benefits* (Davis-Friday et al. 2010)
- *Derivative financial instruments* (Ahmed et al. 2006)
- *Fair value of investment properties* (Muller et al. 2015)

Will the change in **lease accounting rules have any real effects**? It refers to the business practices, so on the way businesses operate. SFAS 13 required all finance leases to be reported as assets and debt (from footnote disclosures to the B/S)

➔ Imhoff and Thomas (1988): substitution from finance leases to operating leases and non-lease sources of financing -> *reduction in leverage ratios*

SFAS 123 required companies to expense stock options

➔ Core et al. (2003): many companies decreased or eliminated the use of stock options, and increased the use of restricted stock or LTIPs, in their employee compensation plans

Lease capitalization rules (i.e. rules that require firms to report all finance leases as assets and debt) may also be costly and have unintended consequences

➔ Chen et al. (2023): the introduction of the new rules leads to a decrease in firm-level investment (because we have increased leverage, the company is riskier, so it is more difficult to collect funds for making investments), profitability and employment, which have impact at macrolevel. These effects are stronger for lease-intensive firms as well as for financially distressed firms

Recognition

All leases must be capitalised asset and liability on B/S -> Exception: *Short-term leases* (12 months or less) and *low-value leases* (e.g., €5,000) -> no asset and liability on B/S. *Lease payments* treated as *expense on a straight-line basis* over the lease term.

The new rules may incentivize companies to negotiate shorter leases with frequent renewal options. For this reason, the new standard contains *anti-avoidance provisions* that

require the lease term to include:

a) Periods covered by an option to extend the lease if the lessee is reasonably *certain to exercise that option*
b) Periods covered by an option to terminate the lease early if the lessee *is reasonably certain not to exercise that option*

Initial measurement

The *lease liability* is measured initially at the present value of all lease payments (due after the commencement date). The *right-of-use asset* is measured initially at cost -> composed of the following elements:

a) *The amount of the initial lease liability*
b) *Any lease payments made at or before commencement*
c) *Any initial direct costs incurred by the lessee*
d) *The estimated costs of restoring the underlying asset* to the condition required at the end of the lease

Subsequent Treatment: Right-of-Use Asset -> The right-of-use asset is subsequently measured at cost (so, no revaluation method is allowed). The right-of-use asset is *depreciated according to IAS 16* (for a period of time equal to the duration of the contract if that is equal to the useful life of the asset or the smallest between the duration of the contract and the useful life). *The right-of-use asset is subject to impairment testing according to IAS 36*

Lease Liability

Each *lease payment* is split between the interest expense (finance charge) and the amount reducing the outstanding liability. IFRS 16 requires that interest on the lease liability should be calculated so as to produce "*a constant periodic rate of interest on the remaining balance of the lease liability*". The interest rate applied should be the same as the discount rate which was used when measuring the lease liability initially.

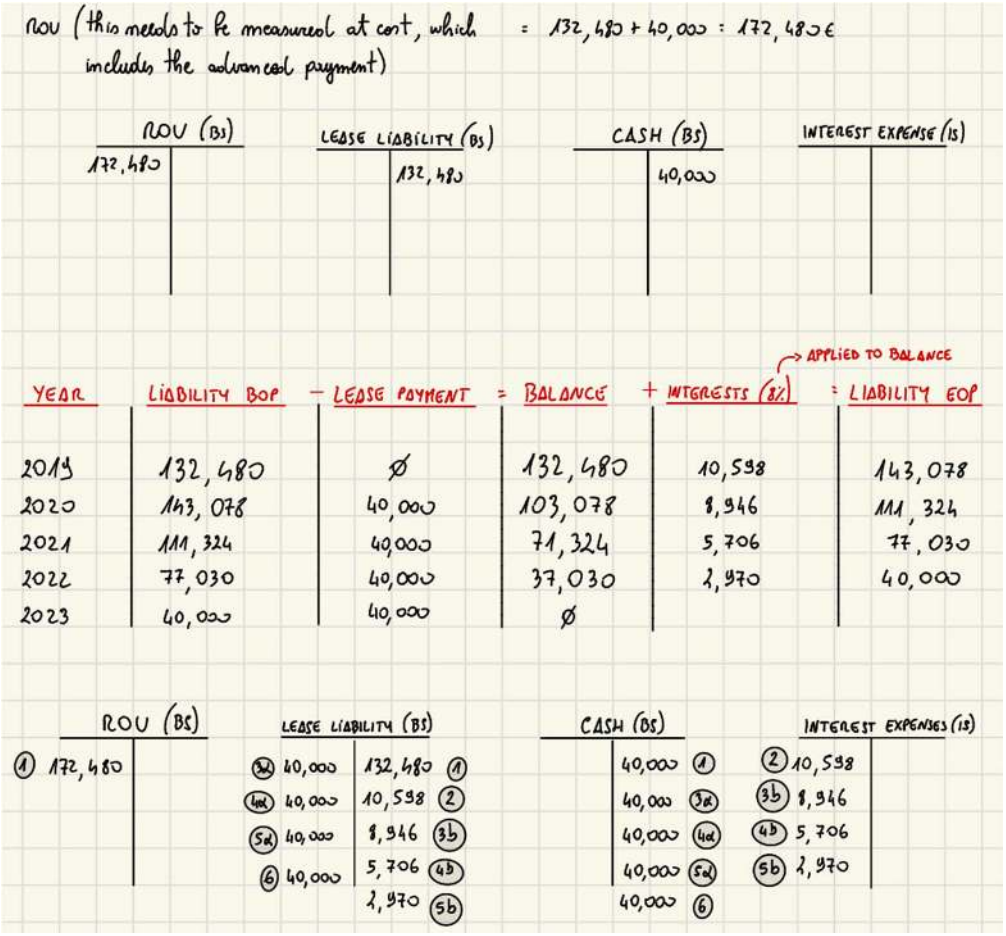
Example

On 1 January 2019, a company which prepares accounts to 31 December enters into a 5-year lease (which is very small compared to the real useful life of the asset -> with the old rule it would have put off-balance) of a building from a property developer. Lease payments are €40.000 per annum, payable in advance on 1 January in each year. The rate of interest implicit in the lease is 8% per annum. Explain how this lease should be accounted for by the company in accordance with the requirements of IFRS 16.

As we said before, the lease liability that the company has to register is equal to the present value of the payments the company has to do during the year, except for the first one (as it has been paid in advance). The total lease liability is going to be:

$$PV = Amount * \frac{1-(1+r)^{-n}}{r} = 40{,}000€ * \frac{1-(1+0.08)^{-4}}{0.08} = 132{,}480€$$

How do we treat subsequently the lease payments?



Presentation

- *BS* -> The rights-of-use assets (lease liabilities) are either presented separately from the other assets (liabilities) or *disclosed separately in the notes* (disclose the line items in which they are included)
- *Profit and Loss Statement* -> Depreciation expense (because of the presence of the ROU) and interest expense (because of the lease payments) cannot be combined in the income statement
- *Cash Flow Statement*:
    - Payment of the principal portion of the lease liability ⇒ *cash flows from financing activities*
    - Payment that represents interest portion of the lease liability ⇒ either *operating cash flows or financing cash flows* (in accordance with the entity's accounting policy regarding the presentation of interest payments)

Lease Accounting by Lessors

Substantially unchanged -> Classify all leases using the same principles (IAS 17), so they have to distinguish between operating and finance leases:

- Operating lease -> Lessor continues to recognize the asset and recognises *lease income* (straight-line basis)
- Finance lease -> *Lessor derecognizes the asset* and recognizes a *lease receivable* (equal to the net investment in the lease) and recognises *interest income* and *reduces the lease receivable* for payments received

Financial Statement Effects

The **impact** of these reforms is clear **on all 3 financial statements**:

- *Balance Sheet* -> it increases the assets (as, differently from IAS 17, all the leases need to be recorded within the assets) and the liability (as we have to consider the financing of this activity)
- *Income Statement* -> The EBITDA increases (as we do not anymore recognise an operating expense), but if the contract is properly balanced, we are just replacing the operating expense with other expenses (which take the form of depreciation and financing costs) -> the profit before taxes doesn't change, but it changes the values in the middle
- *Cash Flow Statement* -> as before, we have an inflow caused by the reduction in the operating activity, but at the same time we have an outflow caused by the increase in the financing activity (as now the outflows need to be accounted as so).

- **Balance Sheet**
  ↑ Assets
  ↑ Liabilities
- **Income Statement**
  ↑ EBITDA
  ↑ Depreciation and financing costs
  ↔ Profit before tax
- **Cash Flow Statement**
  ↑ Cash from operating activities
  ↓ Cash from financing activities
  ↔ Total cash flow

Outside of the overall impact on the 3 financial statements, these reforms have some **impact on several financial ratios**, such as:

Ratio	Effect
Asset turnover	↓
Current ratio	↓
ROA	↑↓
ROE	↑↓
Leverage	↑
Interest coverage	↑↓

- *Asset turnover* -> because this formula compares revenues with the total assets (which has the purpose to tell us how efficiently the company uses her assets to generate revenues), because the assets increases as we have seen before, the overall effect is a reduction in this financial ratio
- *Current ratio* -> current assets/current liabilities -> the portion of the lease liability that is going to be paid in the following period increases the current liabilities (while the remaining part is the long-term liability) -> the overall ratio reduces
- *ROA* -> we have to compare the increase in the EBITDA and the increase in the asset, and see which one has increased more
- *ROE* -> In this case, it depends on which component is going to affect the most the overall profit
- *Interest coverage* -> In this case, it depends if the impact of the reduction of operating expenses (which influences the EBIT) is higher or lower than the increase in interests.

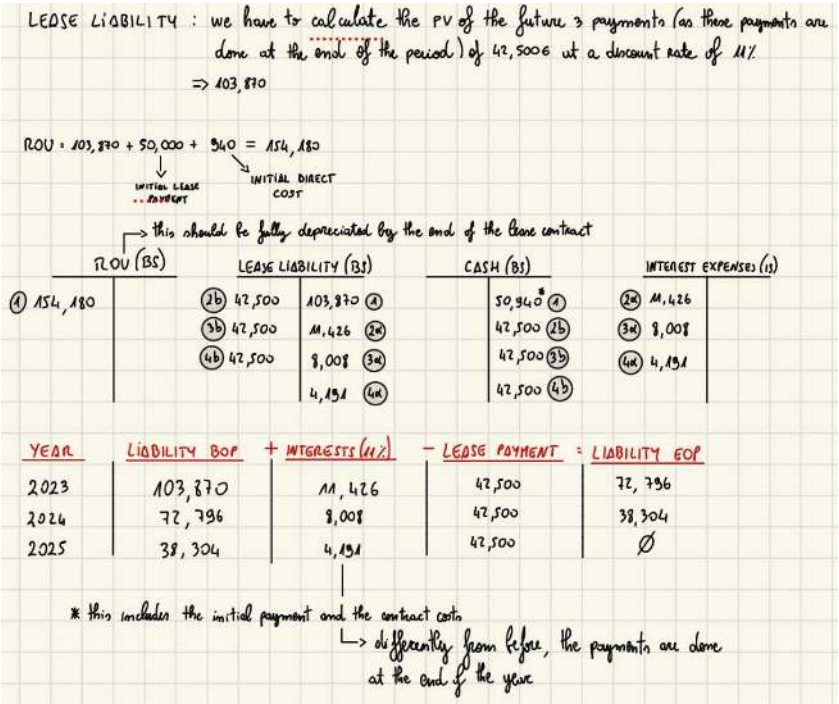
Additional exercise:

1. Lease Transaction: Lessee and Lessor Perspective

On 1 April 2022, Triste Ltd (which prepares accounts to 31 March) enters into a three-year lease of a motor lorry. The company is required to make a lease payment of €50,000 on 1 April 2022 and three further lease payments of €42,500 each on 31 March 2023, 2024 and 2025. The company also incurs initial direct costs of €940. Legal title to the lorry will be transferred to Triste Ltd at the end of the lease term. The rate of interest implicit in the lease is 11% per annum.

a. Explain (with calculations) how this lease transaction should be accounted for in the financial statements of Triste Ltd for each of the three years to 31 March 2025.

b. Explain how the lessor should account for this lease. Assume that the lorry has a fair value at inception of €153,000 and that the lessor incurs initial direct costs of €870.



For the b point, because this is a finance lease (we can understand this information not only by the length of the lease contract, but in particular because the lessor has given the lessee the right to own the asset at the end of the contract term) it has to derecognise the value of the asset (We have to look at the fair value of the asset at the moment in which the contract is signed and add the eventual initial direct cost -> 157,870) and recognise a receivable. This receivable is going to be reduced every time the lessor receive a payment, which is going to be divided between interest income and reduction in receivable.

Deferred Taxes and Valuation Allowances

The Problem

Accounting standards and **tax rules** are produced with different objectives and are not identical:

- Accounting is aimed at *giving ass much qualitative accounting information about the company to investors*.
- Tax authorities have to *collect as much tax as possible*

➔ *Accounting profit before taxes may be different from taxable profit*, and because of this companies usually build 2 different books according to the different rules. How should we calculate the income tax expense reported in the I/S?

Revenue	2.000
COGS	(200)
SG&A	(500)
Depreciation	(750)
Operating Income	550
Interest Expense (Net)	(50)
Income before Taxes	500
Tax Expense	?
Net Income	?

Basic terminology

- **Financial statements**:
  - *Pre-tax profit*: profit before taxes, determined according to the accounting principles (IFRS in our case)
  - *Tax expense*: taxes reported in I/S as an expense, which is calculated as a percentage of the pre-tax profit
  - *Effective tax rate*: tax expense/pre-tax income
- **Tax Returns**:
  - *Taxable profit*: amount used to compute income tax payable, determined according to the tax code -> there could be some cases in which the company collects a t tax receivable, which can be used by the company in the future in order to reduce future tax payables
  - *Current tax expense*: taxes payable/recoverable on the current year's taxable profit/loss
  - *Statutory tax rate*: rate set by tax law

Categories of Taxes

From an accounting perspective, there are **two categories of tax** that must be considered*: Current tax and Deferred tax* (movement in deferred tax balances for the period). The accounting rules for both are contained in *IAS 12* -> $Tax\ expense = Current\ tax + Deferred\ tax$ -> if accounting and tax rules were the same, than Current and Deferred taxes were the same and no distinction was necessary.

Current Tax

Current tax is the amount of tax payable or recoverable on the taxable profit or loss of an accounting period. Current taxes are usually recognised as an expense in the income statement (I/S), and any *amount unpaid* should be included as a current liability in the balance sheet (B/S, usually with the name as current tax expenses even though they are tax payable). The rules for computing taxable profit sometimes differ from those used to compute accounting profit. *Accounting profit provides the starting point for the computation of taxable profit*, and thus current tax -> these differences can be divided into *permanent* and *temporary*.

Permanent Differences

Also called **differences in scope**, they result from items that:

- Enter into pre-tax accounting profit but never into taxable profit (E.g. interest received on state and municipal bonds, fines and expenses resulting from a violation of law etc. -> these are elements that are included into the accounting profit, as they are incomes and expenses, but they are not included into the pre-tax profit)
- Enter into taxable profit but never into pre-tax accounting profit (E.g. dividends received from consolidated subsidiaries)

➔ They are called permanent because they affect only the period in which they occur and therefore do not generate differences between accounting profit and taxable profit in future periods -> *do not create deferred tax liabilities/assets*

$$Current\ tax\ expense\ =\ (Taxable\ profit) * Statutory\ tax\ rate$$
$$=\ (Pre-tax\ accounting\ profit\ -\ Permanent\ differences) * Statutory\ tax\ rate$$

Example:

Mandrigo Ltd. earned profit before tax of €520.000 for the year ended 31 December 2010. Pre-tax accounting profit includes a fine to the tax authorities of €20.000 and interest received from government bonds of €10.000. Mandrigo pays corporation tax of 20%.

	Amount (€)
Pre-tax accounting profit	520.000
Add:	
Fine (disallowed expense)	20.000
	540.000
Deduct:	
Interest received from government bonds	(10.000)
Taxable profit	530.000
Current tax @ 20%	106.000

Note: Taxable profit and adjusted pre-tax accounting profit are synonyms

Deferred Tax: Introduction

Consider a lawn mower with only one height setting, suitable for cutting grass with one week of summer's growth. On Sunday, you cut the grass, as its height is perfectly matched to the mower's height setting. The next day the grass is too low for the blade. On Tuesday, though it has grown a little, the grass is still too low. By Friday, it is much higher, but the grass has still not reached the requisite height. On Sunday, the blade and the grass are once again perfectly aligned. At any time in midweek, however, there is a temporary difference – then, come Sunday that temporary difference disappears.

Differences in timing -> Differences between accounting profit and taxable profit that result from recording accounting expenses and revenues in a period different from the one

used for tax purposes. Because current temporary differences will result in future differences between accounting and taxable profit, they generate *accounting assets* (i.e. the right to pay lower taxes) *and liabilities* (i.e. the obligation to pay additional taxes), when these temporary differences reverse.

Taxable Profit > Accounting Profit -> Deferred Tax Assets

Elements that can generate Deferred Tax Assets:

- Revenues are taxed before they are recognised in accounting profit (E.g. subscriptions received in advance -> by now it is recognised as a liability, not a revenue, and because of this it is not recognised within the accounting profit. But according to tax rules, because the company has received cash, this has to be considered revenue)
- Expenses or losses are recognised in accounting profit before being tax deductible (E.g. product warranty expenses -> because of conservatism, because it is a potential expense we have to record it as an expense within the accounting profit. But because there hasn't been an outflow yet, according to tax rules we should not consider this expense)

Because these are temporary differences, **in the future** -> $Taxable\ profit < Accounting\ profit \Rightarrow Lower\ taxes\ will\ be\ paid\ (Asset)$. Deferred tax assets decrease (to zero) when these events revers

Taxable Profit < Accounting Profit -> Deferred Tax Liabilities

Elements that can generate Deferred Tax Liabilities:

- Revenues are recognised in accounting profit before they are taxed (E.g. revenue recognition on an accrual basis, like revenues recognised from long term contract when part of it when the control is transferred -> they are recognised within the accounting profit, but because there is no inflow it is not recognised within the tax profit)
- Expenses or losses are tax deductible before they are recognised in accounting profit (E.g. prepaid rent, prepaid insurance premia)

Because these are temporary differences, **in the future** -> $Taxable\ profit > Accounting\ profit \Rightarrow Increased\ taxes\ will\ be\ paid\ (Liability)$. Deferred tax liabilities decrease (to zero) when these events reverse

Example

A company recognises a revaluation loss on land in its financial statements. The tax authorities do not normally regard an unrealised loss as arising until the land has been sold. A temporary difference exists, therefore, when the land is revalued downwards:

- A loss is recorded in the entity's I/S (which decreases the accounting profit but not the tax profit)
- No loss is deemed tax-deductible by the tax authorities at that time

When the land is eventually sold, the tax authorities regard a loss as having arisen. The temporary difference then disappears. Until that happens, however, the financial statements will continue to show a loss. This difference is a temporary difference. Deferred

taxes allow the total tax charge to be computed on the accrual basis of accounting.

Other cases that can generate deferred taxes:

Type	Timing of recognition for financial reporting purposes (GAAP)	Timing of recognition for tax purposes (Tax Code)
Depreciation expenses	Straight-line or any other accepted method	Depreciation not allowed or partial allowance
Bad debt expenses	Estimated future write-offs	Actual write-offs
Warranty expenses	Estimated future payments	Actual warranty payments
Pension expenses	Actuarial estimation of pension expenses	Actual contributions to pension plan or actual payments to retirees
Investment income	Unrealised and realised gains may be recognised in income	Only realised gains

I/S Approach: Example

Daisy Ltd recorded an accounting profit before tax of €100.000 for the year ended 30 June 2015. Included in the accounting profit were the following items of revenue and expense:

Item	€/%
Entertainment expenses (non- tax deductible)	2.000
Depreciation – vehicles (10%)	17.000
Rent revenue	2.500
For tax purposes the following applied:	
Depreciation rate – vehicles	15%
Rent received	3.000
Income tax rate	30%

$$Tax\ expense = Current\ tax\ expense + Deferred\ tax\ expense$$

$$Deferred\ tax\ expense = Tax\ expense - Current\ tax\ expense$$
$$= Timing\ differences * statutory\ tax\ rate$$

	Amount (€)
Pre-tax accounting profit	**100.000**
Add:	
Entertainment expense: permanent difference	2.000
Adjusted accounting profit (1)	**102.000**
Depreciation - vehicles	17.000
Rent received (taxable income)	3.000
	122.000
Deduct:	
Rent revenue	(2.500)
Depreciation –vehicle (tax)	(25.500)
Taxable profit (2)	**94.000**
Tax expense= Adjusted accounting profit @30%	30.600
Current tax expense=Taxable profit @30%	28.200
Deferred tax expense= Tax expense- Current tax	2.400
Deferred tax expense=(Timing differences (1)-(2)*30%)	2.400

B/S Approach

Temporary differences can also be captured by comparing:

- The carrying value of assets and liabilities in an entity's B/S
- The tax base of the same assets and liabilities

Asset	Liability	Temporary difference	Deferred tax asset/liability
Carrying value> tax base	Carrying value< tax base	Taxable	Deferred tax liability in B/S
Carrying value< tax base	Carrying value> tax base	Deductible	Deferred tax asset in B/S

Example 1

A company has the following assets as of 31 March 2017:

a) A machine, which costs €40.000, is shown at its written down value of €16.000. For tax purposes, its written down value is €11.200 (this difference might be caused from the fact that usually depreciation is higher considering tax rules compared to the accrual one). The machine's residual value at the end of its useful life is expected to be zero.
b) Trade receivables are shown at €75.000. The revenue to which these relate was included in taxable profit for the current fiscal year.
c) Interest receivable is shown at €3.000. This interest has been included in accounting profit but will not be taxed until it is actually received. It will then be fully taxable

Asset	Tax base (€)	Carrying amount (€)	Temporary difference (€)	Deferred Tax Asset/Liability (€)
Machine	11.200	16.000	4.800 (taxable)	912=19%*4.800 (liability)
Trade receivables	75.000	75.000	0	-
Interest receivable	0	3.000	3.000 (taxable)	570=19%*3.000 (liability)

Example 2

A company has the following liabilities as of 31 March 2017

a) Current liabilities include accrued expenses of €5.000. These expenses have already been deducted when computing both accounting and taxable profit.
b) Current liabilities include further accrued expenses of €8.000. These expenses have been deducted when computing accounting profit but will not be deducted for tax purposes until they are actually paid

Liability	Tax base (€)	Carrying amount (€)	Temporary difference (€)	Deferred Tax Asset/Liability (€)
Accrued expenses (a)	5.000	5.000	0	-
Accrued expenses (b)	0	8.000	8.000 (deductible)	1.520=19%*8.000 (asset)

Entries

Some of the income or expenses in an entity's financial statements for an accounting period may be dealt with for tax purposes in a different period. IAS 12 requires that such "temporary differences" are dealt with as follows:

- In a period in which temporary differences cause taxable profits to be lower than accounting profits, the tax expense for the period is increased by a transfer to a deferred tax account (liability)
- In a period in which temporary differences cause taxable profits to be higher than accounting profits, the tax expense for the period is reduced by a transfer from the deferred tax account (asset)

➔ The balance on the deferred tax account should be *shown as a non-current liability (or asset)* in the entity's financial statements

Deferred Tax Assets & Liabilities: Notes

They are calculated by applying the tax rates enacted for future years to temporary differences between the carrying and tax bases of assets and liabilities. They are reported undiscounted even if reversal is expected in the distance future (e.g. depreciation of long-lived assets). The book value of deferred taxes may thus significantly overstate the

economic asset or liability. Future deductible amounts are beneficial only if the firm is expected to have taxable amounts in the future. Deferred tax assets are recognised *only* to the extent it is probable that future taxable profit will be available against which it can be offset.

Tax calculations and entries

Example 1

(€)	Year 1	Year 2
Revenues	10.000	12.000
Expenses	7.000	7.500
Net accounts receivables	8.000*	10.000**

*Net of an allowance of €1.000 created at the end of year 1 for a client that owes €1.000 and is believed to be in financial difficulty. The corresponding bad expense is included in "Expenses" in year 1.

**Doubtful account in liquidation. Amount owed by client has been written off.

NOTES:

1. The bad debt expense is not tax deductible until the client is written off, i.e. in Year 2
2. Tax rate = 30%

IS calculation (we have to compare the accounting profit with the tax profit):

(€)	Year 1	Year 2
Pre-tax accounting profit (1)	**3.000**	**4.500**
*Tax expense (30%*Accounting profit)*	*900*	*1.350*
Taxable profit (2)	**4.000**	**3.500**
*Current tax expense (30%*Taxable profit)*	*1.200*	*1.050*
Deferred tax expense	(300)	300
Timing differences ((1)-(2))	(1.000)	1.000
Deferred tax expense (Timing differences*30%)	(300)	

Obviously, the *accounting profit* is calculated by subtracting the Expenses from the Revenues. Subsequently, by applying the tax rate to the accounting profit, we are going to have the *Tax expense*. In accounting, we have estimated that we are going to collect a limited portion of the receivable -> because of conservatism, we have to record an expense (that is included within the Expenses) and you credit an allowance (which reduces the level of receivable). For Tax purposes, because the expense is not paid yet, it is *not deductible* (and so increases the Tax profit) and it will become so when the client is written off.

- In year 1, because accounting profit is lower than tax profit = tax expense < tax liability = deferred tax asset, so we have the right to pay less taxes in the future.

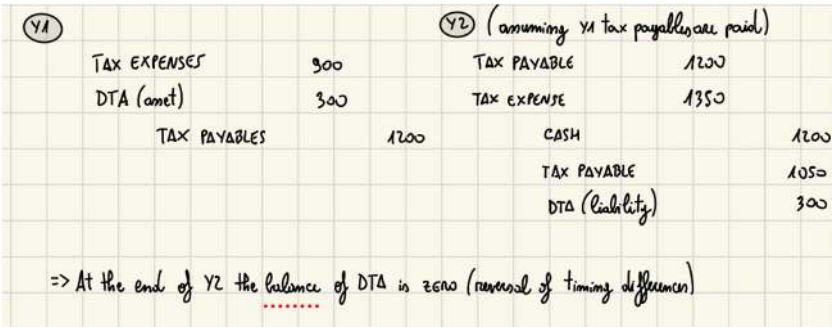
- In year 2, even though we don't have any modification to be made connected to that period's receivables, we have to consider the variation from year 1 (because the condition for its deductibility has been realised) -> it is considered from the tax authority, but not from the accounting perspective (as we have registered the expense in year 1) -> accounting profit > tax profit = tax expense < tax liability = deferred tax liability that compensates the year 1 DTA.

BS calculation (we have to compare the carrying amount with the tax base):

(€)	Year 1	Year 2
Accounts receivables (GAAP)	8.000	10.000
Accounts receivables (Tax Base)	9.000	10.000*
Difference	(1.000)	0
Required deferred tax account (asset/liability) @30%	(300)	0
Existing deferred tax account (asset/liability) @30%	0	(300)
Deferred tax account	(300) Debit	300 Credit

*10,000 is composed of 9,000 (which is the tax value of receivables at the end of year 1) increased of 2,000 (which is the increase in the carrying amount, as the company has sold more on credit) and reduced of 1,000 (as the company has written off the receivable from the client, which means it has become deductible).

Regarding the entries, these has to be done in the following way:



Example 2

A company has pre-taxed accounting profit of €50.000 each year during a 5-year period. The pre-tax accounting profit includes:

- Depreciation expenses of €5.000 based on the straight-line method (the asset was purchased at the beginning of year 1 for €25.000, 5-year useful life, no salvage value)
- Tax-exempt revenues on municipal bonds of €10.000 in each year

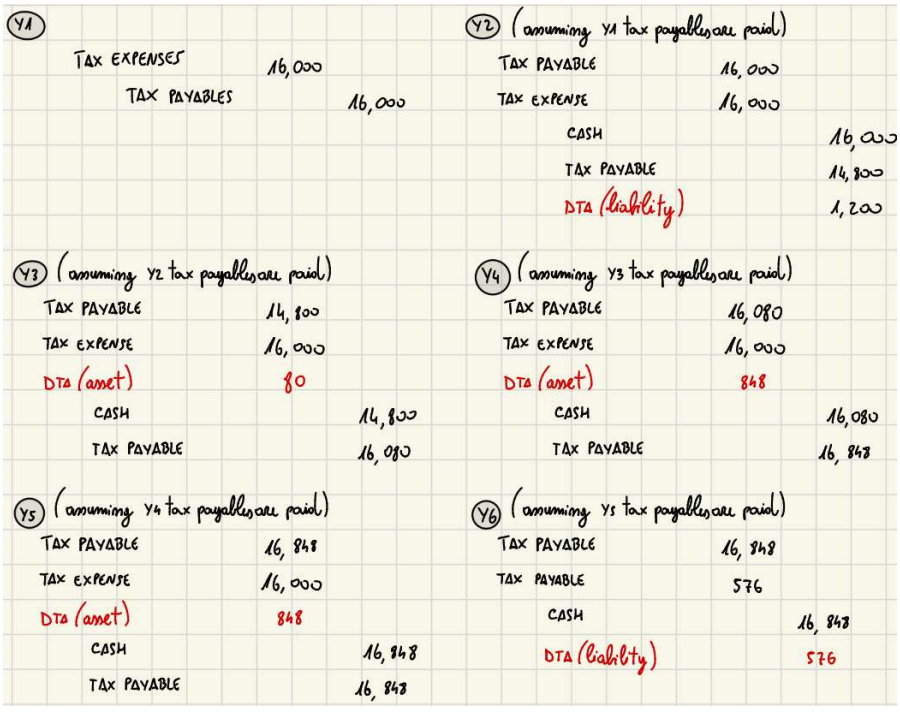
The tax rate is 40%. Depreciation for tax purposes is based on the following depreciation rates: 20%, 32%, 19.2%, 11.52%, 11.52% and 5.76%.

(€)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Pre-tax accounting profit	50.000	50.000	50.000	50.000	50.000	
Permanent differences	(10.000)	(10.000)	(10.000)	(10.000)	(10.000)	
Adj. accounting profit (1)	**40.000**	**40.000**	**40.000**	**40.000**	**40.000**	
Tax expense @40%	*16.000*	*16.000*	*16.000*	*16.000*	*16.000*	
Timing differences						
Depreciation (GAAP)	5.000	5.000	5.000	5.000	5.000	
Depreciation (Tax)	5.000	8.000	4.800	2.880	2.880	1.440
Taxable profit (2)	**40.000**	**37.000**	**40.200**	**42.120**	**42.120**	**(1.440)**
Current tax expense @40%	*16.000*	*14.800*	*16.080*	*16.848*	*16.848*	*(576)*
Deferred tax expense	0	1.200	(80)	(848)	(848)	576
Timing differences ((1)-(2))	0	3.000	(200)	(2.120)	(2.120)	1.440
Deferred tax expense (Timing differences*40%)	0	1.200	(80)	(848)	(848)	576

8

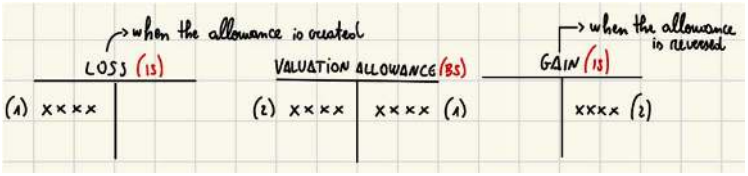
The first thing that generates a change is the municipal bond, as these are revenues that are never going to be taxable -> permanent difference, which influence our accounting profit and, therefore, our tax expense. During year 1, because the accounting and the tax depreciation are equal, also accounting and taxable profit are equal, and therefore also tax expense and tax payable -> no deferred taxes. In the following years, because the depreciation calculated for tax purposes is different from the accounting one, the tax profit is going to be different from the accounting one (in particular, lower for year 2 and higher for year 3, 4 and 5). Lastly, in year 6 because there is no revenue but we still have to consider the depreciation calculated from tax purposes, there is a loss, which means that the company generates a tax credit (that is going to be recorded as a reduction in the tax payable).

Entries:



Valuation allowances

The **carrying amount of deferred tax assets** (this logic cannot be applied for the deferred tax liability) are *reviewed at the end of each reporting period* and reduced if it is *no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred tax assets to be utilised* (DTA is the right to reduce tax in the future -> in order to do so, the company needs to have profit, and in case the companies believes the profitability will be reduced, therefore also the tax profit will be reduced). Valuation allowances flow through the income statement as a *loss* and can be *reversed if profitability outlook improves* and the reversal flows through the income statement as a *gain* -> *Highly discretionary and based on management judgement* and extremely informative for investor as it tells us the information about future company profitability -> that's why managers are reluctant to recognise them, as it is a negative information (we are informing investors about a reduction of profitability) -> an example in the past has been Citi group, which during the 2008 financial crisis (a period when revenues reduced for all banks) they refused to register a valuation allowance.



Importance of Deferred Taxes

How Important are Deferred Taxes? It depends on the *extent to which a country's accounting rules and its tax rules are independent of each other* (the presence of deferred tax is necessary in case there are differences between these rules -> the higher the difference, the higher the amount and the importance of DT):

- *UK* -> accounting rules operate independently of tax rules = many temporary differences = high amount of deferred taxes -> typical of *common law countries* -> in these countries, stock market is big, and the *traditional way for financing is the stock market* -> for these to work properly, it is required transparency (so a full set of qualitative information that are public) in order to convince investors to put money in the company -> accounting have been developed following principle based rules, as the idea is to reflect in the best possible way the underlying situation of the company
- *Germany/France* (as well as in other continental European countries) -> accounting rules and tax rules tend to be very similar = fewer temporary differences = deferred taxes are less important -> typical of *code law countries* -> in these countries, stock market is smaller to the size of countries, and the *traditional way for financing are banks* -> they collect information from the report and ask privately information to the company, so a 1 to 1 communication in order to receive money = no much demand for public accounting information -> legislator thought that because banks would have collected these information in any case, they believed it was better to set rules that are close to tax rules in order to reduce DTA

Why are Deferred Taxes Important? Understanding deferred taxes is important for forecasting future cash flows (i.e. for valuation):

- It is important to determine whether tax assets and liabilities will reverse (and hence have cash consequences) in the future
- Financial analysts need to analyse the components of deferred taxes and decide, on a case-by-case basis, whether they are likely to reverse over time. In this decision it is important to consider:
  - *Future tax rates*, tax laws and accounting standards
  - *Firm's growth rate* -> a firm that grows has more revenues and expenses and, therefore, more differences between accounting and tax profit
  - *Non-recurring items*

➔ Valuation allowances allow substantial managerial discretion and may be used to smooth earnings

Academic research insight

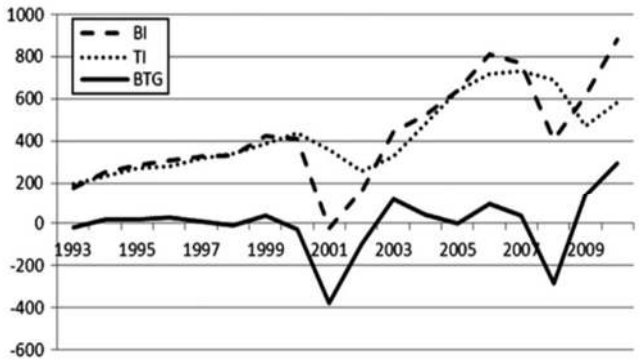


Fig. 1. Aggregate Book-Tax Gap, 1993–2010. This figure shows the book-tax gap from 1993 through 2010. Book income is pretax income adjusted for minority interest. Taxable income is federal and foreign tax expense divided by the maximum statutory rate. The book-tax gap is book income less taxable income.

- BI = Book Income = Accounting profit
- TI = Tax Income
- BTG = Book-Tax Gap

➔ BI is much more volatile than TI (even though they move together) because of the discretionality given to managers (valuation of PPE, depreciation, impairment, valuation of inventory…)

The overall economic activity can *predict the book-tax gap*. The direction of this relation may depend on whether there is *economic expansion/contraction* -> If we see the graph, the highest drops are during crises.

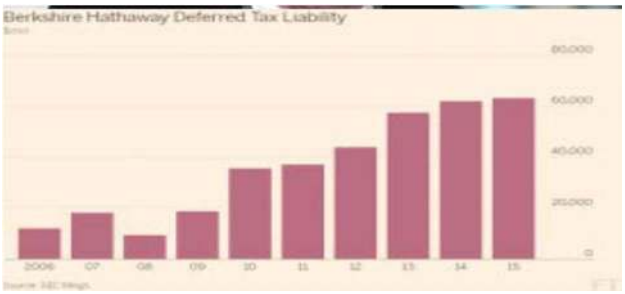
Book-tax gap can be an indicator of earnings manipulation or lower earnings quality.

- Book-tax difference is associated with *bad prior earnings patterns, financial distress, bonus thresholds* (Mills and Newberry 2001), because they are based on accounting results, so managers are incentivized to inflate profits
- Firms with a higher deferred tax expense are *more likely to avoid earnings declines* and to *avoid losses* (Phillips et al. 2003)
- Firms with larger book-tax differences are *more likely to have earnings that are less persistent* -> when there is a lot of discretion given to managers, it is likely that both

revenues and costs are going to be more volatile -> as the best predictor for the future is the past, a not stable past indicates a more difficult to predict future. Investors interpret large positive book-tax differences as a "red flag" and reduce their expectation of earnings persistence for these firms (Hanlon 2005)

- The ratio of taxable income to book income can assist investors in p*redicting subsequent five-year earnings growth* (Lev and Nissim 2004)
- Hanlon et al. (2008) examined a set of firms that were required to change from the cash method to the accrual method for tax purposes. They find that the *increase in book tax conformity* (i.e., the decrease in the book-tax gap, as we have the same model) resulted in a *decrease in the informativeness of firm's accounting earnings*.

Berkshire Hathaway $62bn Secret: Interest-Free Government Loan?



As it is possible to see from the graph, the investment bank directed by Warren Buffet has accumulated about 62bn$ up to 2015 in DTL. The main instrument that has been used is accelerated depreciation -> this is a tool used by governments in order to incentivise investments in particularly important sectors or specific regions. With this method, companies face high levels of depreciation in the early years (and lower in the following years) = very low taxable profit = very low tax payable. At the same time, because the accounting depreciation are lower than the tax one, the accounting profit is going to be higher than the tax profit = tax liability < tax expense -> DTL. This is what Warren Buffet took advantage of: he started investing in sectors that include this accelerated depreciation, such as power and railway companies. This can be seen as a loan with government as these are deferred liabilities that are going to be paid in the future (and, because it is with the government, it is basically an interest-free rate loan) while, in the meantime, they can use those 62bn$ for other purposes.

Additional exercise using the BS approach

The following information was extracted from the records of Bulb Ltd as at 30 June 2024:

Asset (liability)	Carrying value (€)	Tax value (€)
Accounts receivable	150,000	175,000
Motor vehicles	165,000	125,000
Provision for warranty	12,000	0
Deposits received in advance	15,000	0
Development costs	90,000	0

The depreciation rates for accounting and tax purposes are 15% and 25%, respectively. Deposits are taxable when received and warranty costs are tax-deductible when paid. An allowance for doubtful debts of 25,000 has been raised against accounts receivables for accounting purposes, but such debts are tax-deductible only when written off as uncollectable. Development costs are capitalised and amortised but are tax-deductible in the period in which they are incurred.

a. Calculate the temporary differences for Bulb Ltd as at 30 June 2024. Justify your classification of each difference as either a deductible or a taxable temporary difference.

b. For each of the above temporary differences explain whether there is a deferred tax asset or a deferred tax liability.

Let's analyse the different assets/liabilities and see if there are deferred tax assets/liabilities:

- *Account receivable* -> Because of conservatism, the company has registered an allowance, and therefore a lower carrying amount of receivable. For tax purposes, because the receivable is not written off yet (so it is a temporary modification), it is not deductible and, therefore, we have a tax base higher than the carrying amount -> DTA
- *Motor vehicles* -> the carrying amount is lower because the depreciation is lower -> DTL
- *Provision for warranty* -> because of conservatism we have to recognise the provision (and therefore the expense), but because it has not been paid, it does not show in tax profit -> accounting profit < tax profit = DTA
- *Deposit received in advance* -> it is a liability, which means that for accounting purposes there is no revenue (as we haven't sold the good/service yet). For tax purposes, they are taxable (as they have received cash), so the tax profit is higher -> DTA
- *Development cost* -> For the tax authority they are treated as an expense while in the accounting they are treated as an asset -> tax profit < accounting profit -> DTL -> it is a temporary movement because the liability is going to be reduced in the future thanks to the amortization of the asset.

Leases and Deferred Taxes: Specialized Cases

Sale and Leaseback: What and Why?

Definition of the situation: the seller-lessee *sells an asset* to the buyer-lessor and then immediately *leases the asset back* from the buyer-lessor:

- **Benefits for the seller-lessee include**:
  - An immediate inflow of cash that can be deployed in some area of the entity's business (like supporting a working capital or support an acquisition)
  - No interruption to operations as the seller-lessee does not lose use of the asset
- **Benefits for the buyer-lessor include**:
  - Steady and relatively low risk income stream from a known seller-lessee, whose credit risk can be investigated directly
  - Attractive yield that is usually above market averages because the seller-lessee values retaining operational control of the asset (and, because of this, they are disposed to pay a little bit more)
  - Potentially important tax advantages (depends by the tax institution we are considering)

Accounting Treatment: Lessee Perspective

The seller-lessee sells an asset to the buyer-lessor and then immediately leases the asset back from the buyer-lessor -> we have to *look if there is a transfer of control* (so there is a

physical transfer of the asset or there is the legal title of the asset that change hands -> in both cases the risks and the rewards related to the asset are transferred and the seller is entitle for a payment):

- **Transfer of the asset is a sale (transfer of control)**:
  - Seller-lessee derecognises the transferred asset and recognises a right-of-use asset (and corresponding lease liability). This one is measured initially at the proportion of the previous carrying amount of the transferred asset "*that relates to the right-of-use retained by the seller-lessee*"
  - The profit/loss on disposal is restricted in proportion "*to the rights transferred to the buyer-lessor*"
- **Transfer of the asset is not a sale (no transfer of control):**
  - Seller-lessee continues to recognise the transferred asset
  - The transfer proceeds are treated as a loan and are recognised as a financial liability according to IFRS 9

Accounting Treatment: Lessor Perspective

The seller-lessee sells an asset to the buyer-lessor and then immediately leases the asset back from the buyer-lessor:

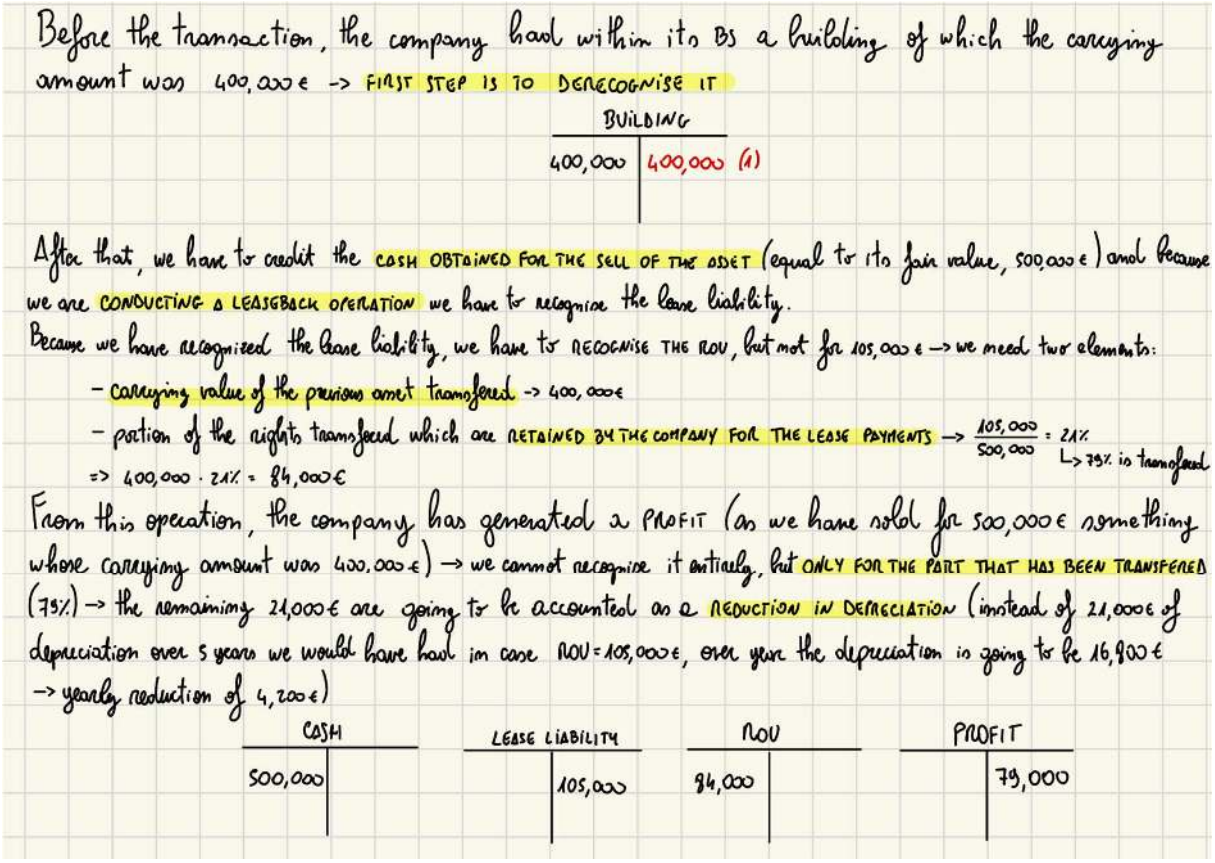
- **Transfer of the asset is a sale (transfer of control)**:
  - Buyer-lessor accounts for the purchase of the asset according to relevant standard (e.g. IAS 16)
  - Buyer-lessor accounts for the lease of the asset according to IFRS 16
- **Transfer of the asset is not a sale (no transfer of control)**:
  - Buyer-lessor should not recognise the transferred asset
  - The transfer proceeds are treated as a loan and are recognised as a financial asset according to IFRS 9

Example

On 1 July 2019, a seller-lessee which prepares accounts to 30 June sells a building to a buyer-lessor for €500.000 (which is its fair value). On the same date, the seller-lessee enters into a contract with the buyer-lessor to lease back the building for a period of five years. The present value of the lease payments (which are payable on 30 June 2020, 2021, 2022, 2023 and 2024) is €105.000. These lease payments are at a market rate. Immediately before this transaction, the building had a carrying amount of €400.000. The transfer of the building to the buyer-lessor qualifies as a sale in accordance with IFRS 15.

➔ Explain how this transaction should be accounted for on 1 July 2019 by the seller-lessee (ignore initial direct costs).

So, in case this would have been a normal lease transaction, the company should have recognised the right-of-use asset (as we are talking about a multi-year lease operation, so according to IFRS 16 we have to record it within the BS) and the relative liability for €105,000 (which is the PV of the lease payments without considering the initial direct costs, which are told to be irrelevant).



From the lessor perspective, we have to recognise the asset according to IAS 16 in this case (as we are talking about a building) -> needs to be valued at cost, so 500,000€ and, on the other hand, we have the payment in cash for the same amount. After that, because it's a leasing transaction, the lessor has to identify if we are in front of a operating or a financial leasing -> in this case it's an operating one, as the PV of the lease payments is much lower than the value of the asset. For the accounting treatment, every time there is a time there is a payment they are going to be recorded as an income together with the relative payment.

Deferred Taxes and Tax Rate Changes: Effects on DTAs and DTLs

DTAs and **DTLs** must be based on expected future tax rates (generally, assume that current tax rate will continue into the future). If the government changes the statutory tax rate, the *balances* of DTAs and DTLs *must be adjusted* to reflect the new rate.

$$Tax\ rate\ change\ adjustment = BOP\ accumulated\ timing\ differences * (former\ tax\ rate - new\ tax\ rate)$$

The adjustments go through Income Tax Expense:

- **Tax rate increase**:
  - DTAs increase: Dr DTA (+A) and Cr Tax Expense (-E) -> a tax rate increase means that for the same tax profit the company is going to face higher tax payables = higher opportunity to use the DTA to pay less taxes

  - DTLs increase: Dr Tax Expense (+E) and Cr DTL (+L) -> because we have higher tax payables, we have to increase our liabilities
- **Tax rate decrease**:
  - DTAs decrease: Dr Tax Expense (+E) and Cr DTA (-A) -> Via valuation allowance
  - DTLs decrease: Dr DTL (-L) and Cr Tax Expense (-E)

Mike Mayo example

Y1:

- accounting profit -> (1000-100) =900*40%=360 -> tax expense
- Taxable profit -> (1000 – 120) = 880 *40% = 352 -> tax payable

➔ 8 of DTL

Y2:

- accounting profit -> (1000-100) =900*40%=360 -> tax expense
- Taxable profit -> (1000 – 192) = 808 *40% = 323.2 -> tax payable

➔ 36.8 of DTL

Y3:

- accounting profit -> (1000-100) =900*40%=360 -> tax expense
- Taxable profit -> (1000 – 115.2) = 884.8 *40% = 353.22 -> tax payable

➔ 6.08 of DTL

In year 4, there is a change in tax rate -> we have to look at all the various timing differences that might have generated a DT (which, in this case, is represented just by the depreciation). By looking at the accumulated differences, and applying the previous formula, the amount of adjustment is equal to:

$$127.2 * (40\% - 35\%) = 6.36 \rightarrow lower\ tax\ liability$$

Y4:

- accounting profit -> (1000-100) =900*35%=315 -> tax expense
- Taxable profit -> (1000 – 69.12) = 930.88 *35% = 325.81 -> tax payable

➔ 10.81 of DTA

Y5:

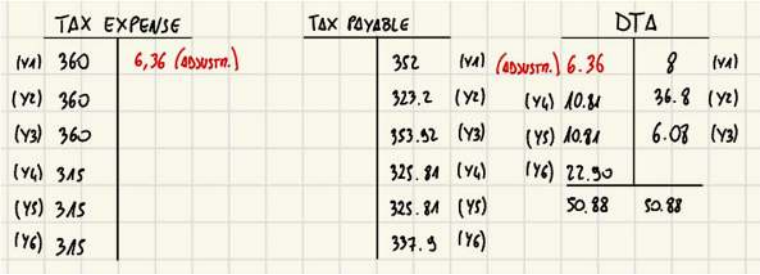
- accounting profit -> (1000-100) =900*35%=315 -> tax expense
- Taxable profit -> (1000 – 69.12) = 930.88 *35% = 325.81 -> tax payable

➔ 10.81 of DTA

Y6:

- accounting profit -> (1000-100) =900*35%=315 -> tax expense
- Taxable profit -> (1000 – 34.56) = 337,90 -> tax payable

➔ 22.9 of DTA



	TAX EXPENSE			TAX PAYABLE				DTA		
(Y1)	360	6,36 (ADJUSTM.)		352	(Y1)	(ADJUSTM.)	6.36	8	(Y1)	
(Y2)	360			323.2	(Y2)	(Y4)	10.81	36.8	(Y2)	
(Y3)	360			353.52	(Y3)	(Y5)	10.81	6.08	(Y3)	
(Y4)	345			325.81	(Y4)	(Y6)	22.90			
(Y5)	345			325.81	(Y5)		50.88	50.88		
(Y6)	345			337.5	(Y6)					

Equity-Settled Share-Based Payments

IFRS 2: Scope

Share-based payments are regulated by IFRS 2, which applies only to share-based payments made
for the acquisition of goods or services -> It *does not apply to dividends* or to the *general issue of shares*.

Definitions: A share-based payment transaction is one in which an entity receives goods or services in return for:

- *Equity instruments* -> This involves an entity issuing its shares as payment for goods or services -> It is called an *equity-settled share-based payment*. The goods or services received are measured at fair value, and recorded as an *asset or expense* (depending on what we are talking about), while on the other hand there is *corresponding increase in equity*
- *Incurring a liability* -> In return for goods/services received, an entity agrees to *transfer cash* or *other assets* for amounts that are based on the price of its shares at the time in which we agree -> it is called a *cash-settled share-based payment*

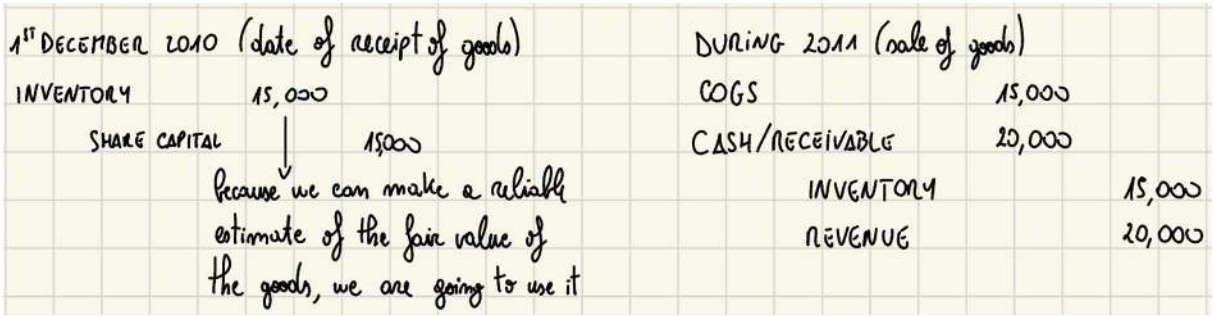
Measurements

In principle, transactions in which goods or services are received as consideration for equity instruments of the entity should be measured at the *fair value* of the goods or services received at the date of receipt of those goods or services. But, if the fair value of the goods or services *cannot be measured reliably* the fair value of the equity instruments granted must be used (you can't measure the value of the asset you have received, you have to use the value of the grounded) considering the fair value at grant date.

Equity Instruments: Example

On 1 December 2010, Company A issued 10.000 of its equity shares to Company B, in return for goods
which had a fair value of €15.000. These goods were included in the inventory of Company A at 31 December 2010 and were sold for €20.000 during 2011. Company A has a reporting date of 31 December.

➔ Outline how this transaction should be recorded in the financial statements of Company A

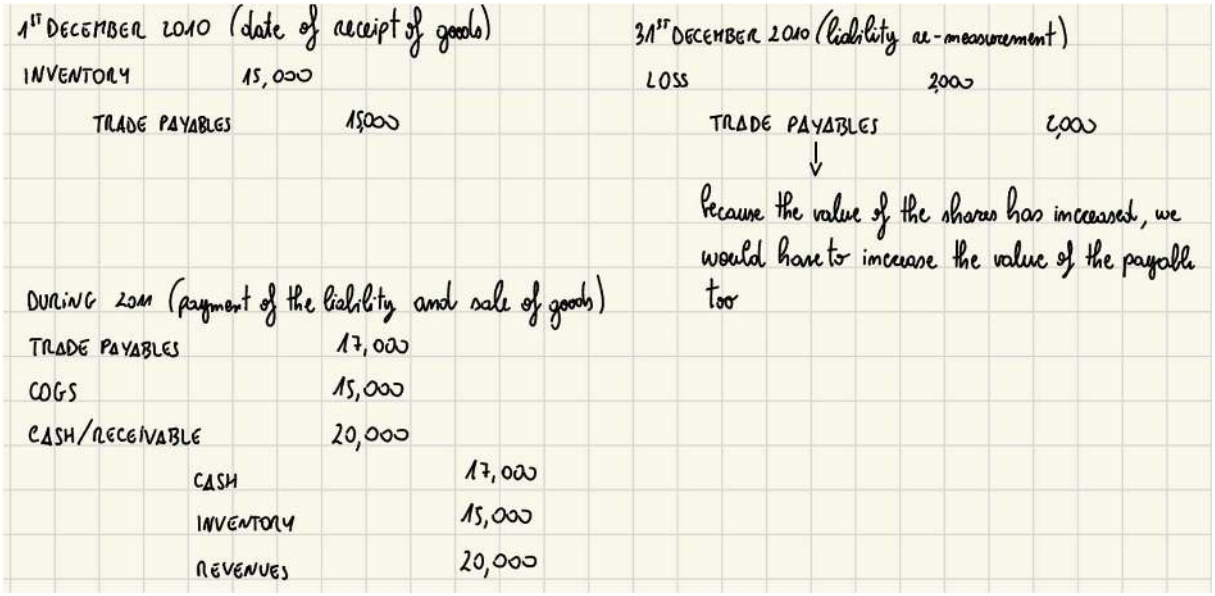


Incurring a Liability: Example

In the previous example, let us assume that Company A is paying for the goods in cash, and that the amount payable is based on the fair value of 10.000 of Company's A equity shares at 31 December 2010. The fair value of 10.000 of Company's A equity shares was as follows:

- €15.000 at 1 December 2010
- €17.000 at 31 December 2010

➔ Outline how this transaction should be recorded in the financial statements of Company A



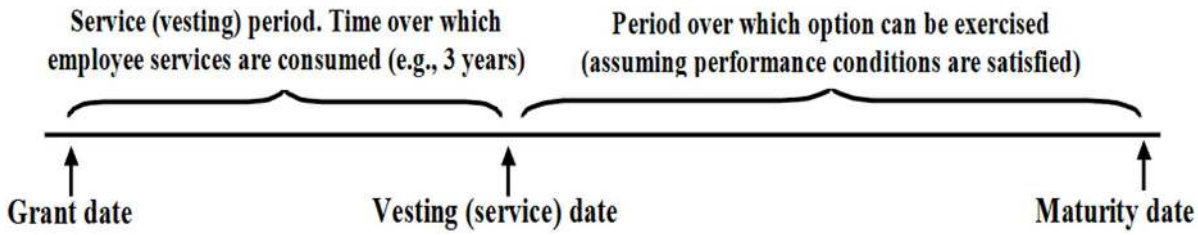
Equity-Settled Share-Based Payments

Executive stock option schemes are the most common example of this type of scheme. Give executives the *right to buy* the firm's shares at a *predetermined price* (also called exercise price) over a pre-specified time period (also called exercise period):

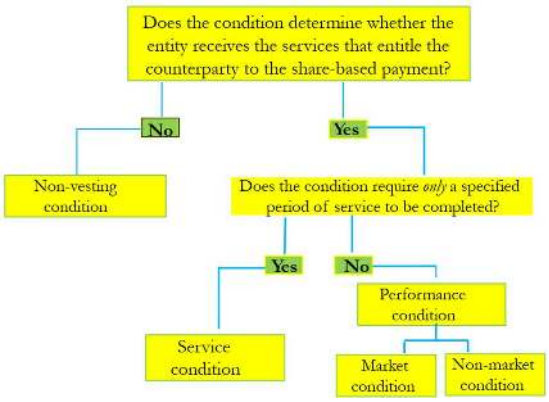
- Often used by growth companies to *motivate its employees* (e.g. in technology sector)
- Valuable to employees because there is a chance that the share price will climb above the exercise price during the life of the option -> they want to make

managers to think like shareholder and wanting them to maximise share value, as the higher the price, the higher will be the compensation they will receive after buying those shares.

➔ Usually *they have a maturity date* (so the moment until which managers can exercise the right).



Vesting and non-vesting conditions



Vesting Condition -> it is a condition that determines whether the entity receives the services that entitle the counterparty to receive cash, other assets or equity instruments of the entity, under a share-based payment arrangement. A vesting condition requires:

a) The counterparty to *complete a specified period of service* (i.e. a service condition), where the service requirement can be explicit or implicit
b) Specified performance target(s) to be met while the counterparty is rendering the service (i.e. a performance condition). A performance target is defined by reference to:
    a. The *entity's own operations* (or activities) or the operations or activities of another entity in the same group, mostly based on accounting measurements (i.e. a *non-market condition*)
    b. The *price (or value) of the entity's equity instruments* or the equity instruments of another entity in the same group (including shares, share options and indexes, such as the S&P%500) (i.e. a *market condition*)

Accounting for Stock Options: Recognition

There are arguments for and against charging the cost of these schemes to profit or loss. IFRS 2 requires that the cost (employee expense) is charged (recognised) to profit or loss:

- *Immediately* (i.e. at grant date) if there are no vesting conditions
- *Over the vesting period* (e.g. the minimum service period that must be completed by option holders) if there are vesting conditions

It is not possible to recognise managers as assets, as even though they are a resources capable of generating potential economic benefits, companies do not have control over them, together with the fact that it is very difficult to measure reliably the performance of a CEO. There is only one exception where the human resource can be capitalized, and this is football player, because there is a transaction (as the transaction reflects the benefits the player will give to the company).

Measurement -> IFRS 2 also requires that the cost is measured as the fair value of the share options at the date of grant of the options (because it is not possible to objectively measure the contribution of the CEO). Market conditions that occur after the option grant date (e.g. share price changes) are not taken into account in determining the charge to profit or loss over the vesting period.

Example: Non-vesting conditions 1

On 31 December 20X1 Entity A grants each employee 10 ordinary shares. There are no vesting conditions.

Solution: Because there are no vesting conditions, on 31 December 20X1 (grant date) employees of Entity A have an unconditional right to the shares. Consequently, on 31 December 20X1, Entity A recognises the staff cost in respect of the services received and a corresponding amount in equity.

Example 2

On 31 December 20X1 Entity A grants 10 share options to each of its employees to reward them for their past performance. There are no vesting conditions, and the options can be exercised at any time after 31 December 20X2. On 31 December 20X1 there are no further conditions to be met for employees to be entitled to exercise their options from 31 December 20X2. If an employee were to leave employment at Entity A before 31 December 20X2, they would still be entitled to exercise the options after 31 December 20X2 (so the company is saying that it is not necessary to be in the company after 31 December 20X2 in order to exercise their right).

Solution: Because there are no vesting conditions, on 31 December 20X1 (grant date) employees of Entity A have an unconditional right to the share options. Consequently, on 31 December 20X1, Entity A recognises the staff cost in respect of the services received and a corresponding amount in equity

Example 3

On 31 December 20X1 Entity A grants 10 share options to each of its employees to reward them for
their past performance. The exercise of the share options is conditional upon the employee working for
the entity throughout 20X2 (so, in case they want to exercise the stock option, they have to work for them during 20X2 -> vesting condition, of service).

Solution: Because exercise is conditional upon the employee working throughout 20X2 (a vesting condition that is a service condition), the services to be rendered by the employees as consideration for the share options will be received in 20X2 (the vesting period). Consequently, because those services are rendered by the employee in 20X2, Entity A recognises a staff cost and a corresponding amount in equity in 20X2.

- ➔ We are following the matching condition -> as I'm going to recognise the revenues that come from this period, we have to recognise also the expenses connected to these revenues.

Non-Vesting Conditions: Example 4

Entity A grants each employee 10 ordinary shares on 31 December 20X1. There are no vesting conditions. If the fair value on 31 December 20X1, the grant date, of all of the shares granted is €5.000, how would Entity A record the equity compensation?

Solution: The full employee expense will be recognised immediately (at grant date). The fair value of the employees' services must be measured by reference to the fair value of the shares awarded, rather than the fair value of the employee services, at the grant date of the shares.

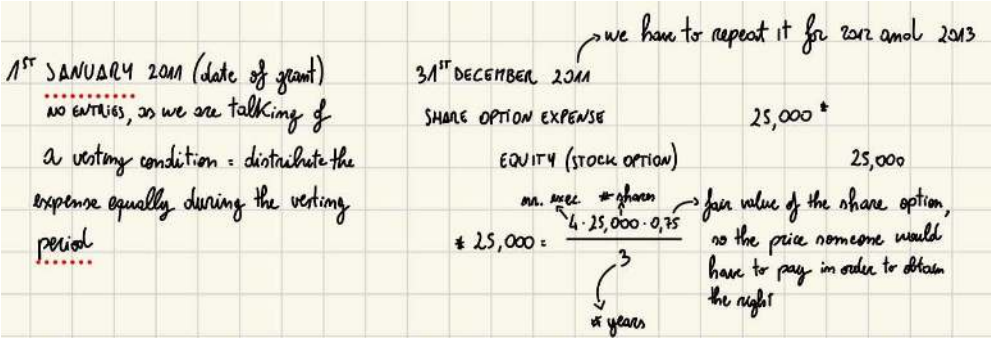
Dr Profit or loss—staff expense	5.000	
Cr Equity		5.000

Vesting Conditions: Example 5

On 1 January 2011 M plc. issued shared options, giving each of four executives the right to purchase 25.000 shares at 25 cents per share (which is the exercise price -> it ensure a profit, and that's why companies set the exercise price at the same price of the share at the moment the contract is signed). The value of the shares on 1 January 2011 was €1. A condition of the agreement was that the executives would complete three years of service from 1 January 2011. The nominal value of the company's shares (which is the initial value of the share when it has been issued) was 10 cents. It should be assumed that the fair value of each share option on 1 January 2011 equals 75 cents. The company's share price on subsequent dates was as follows:

- 1 January 2012 ⇒ €1,50
- 1 January 2013 ⇒ €2
- 1 January 2014 ⇒ €3

➔ Outline how the stock options should be accounted for by M plc.



If all of the executives exercise their options in full on 1 January 2014, they will each pay € 6.250 for 25.000 shares (25.000*0.25 -> we are multiplying the amount of shares with the price they have paid to the company in order to have that right).

➔ Outline how M plc should account for this transaction

1ST JANUARY 2014 (exercise date)

CASH 25,000 → price paid by managers to have the right

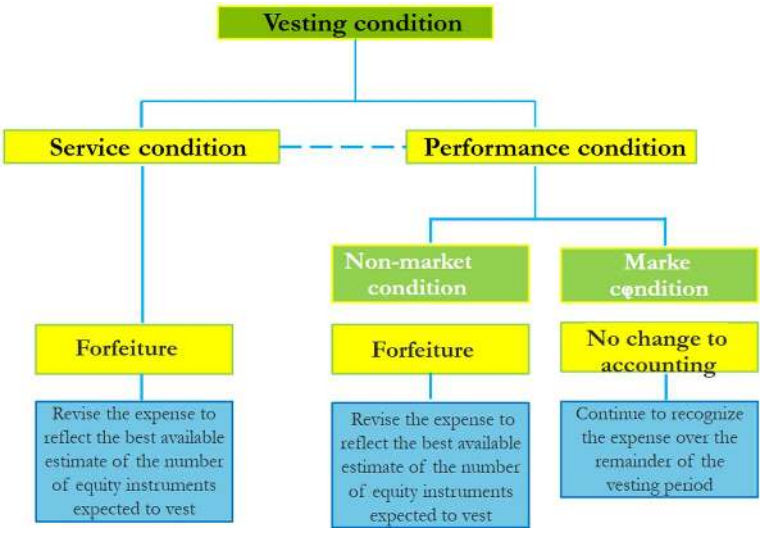
EQUITY (STOCK OPTION) 75,000

ORDINARY SHARE CAPITAL 10,000

SHARE PREMIUM 90,000

} when there is an increase in equity, the portion of the price that increases ORDINARY SHARE CAPITAL is the nominal value, while the rest is a PREMIUM

Failure to meet Vesting Conditions



In Example 5 **one of the four executives left** on 1 January 2012 and therefore lost his/her stock
option. What if options lapse during the vesting period?

31ST DECEMBER 2011

SHARE OPTION EXPENSE 25,000

EQUITY (STOCK OPTION) 25,000

31ST DECEMBER 2012 → we have one less executive, so we have to change the value of the STOCK OPTION RESERVE in order to give the best estimate

SHARE OPTION EXPENSE 12,500*

EQUITY 12,500

* $12{,}500 = (3 \cdot 25{,}000 \cdot 0{,}75 \cdot 2/3) - 25{,}000$

(3 · 25,000 · 0,75 · 2/3): expenses for 3 executive for just 2 years instead of 3

→ we eliminate the expense from the previous year

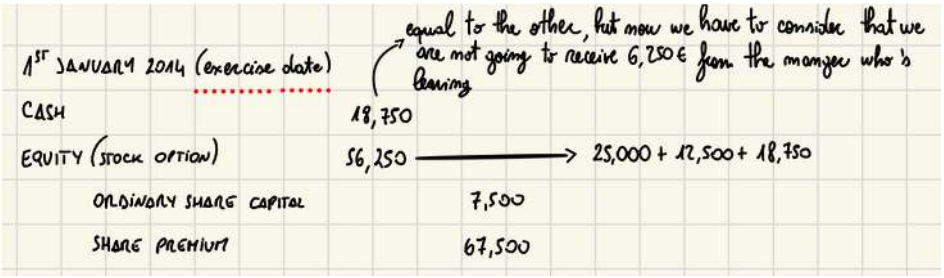
OR $25{,}000/4 = 6{,}250$ / year · executive

→ $(3 \cdot 6250) - 6250$

31ST DECEMBER 2013

SHARE OPTION EXPENSE 18,750

EQUITY 18,750



What if options **expire** without being exercised? Practice journal entries:

– Db Equity (stock options) 56.250*

Cr Equity (expired stock options) 56.250

*56.250=(25.000+12.500+18.750)

Main Disclosure Requirements

Required disclosures include:

- The nature and extent of share-based payment arrangements that existed during the period
- How the fair value of the goods or services received, or the fair value of the equity instruments granted during the period, was determined
- The effect of share-based payment transactions on the entity's profit or loss for the period and on its financial position

EMPLOYEE BENEFITS: PENSION ACCOUNTING

Why is important the accounting of retirement? Because the retirement is a function of the Working Experience. During the active time the employee give working service that will be repaid in the future, but because of the accrual and matching principle we have to recognize it also during time.

Employee benefits are all forms of consideration given by an entity in exchange for service rendered by employees or for the termination of employment. There are different types of employee benefits:

- *Short-term employee benefits* -> employee benefits (other than termination benefits) that are expected to be settled wholly before twelve months after the end of the annual reporting period in which the employees render the related service.

- *Post-employment benefits* -> employee benefits (other than termination benefits and short-term employee benefits) that are payable after the completion of employment.
- *Other long-term employee benefits* -> all employee benefits other than short-term employee benefits, post-employment benefits and termination benefits.
- *Termination benefits* -> employee benefits provided in exchange for the termination of an employee's employment as a result of either:
    - an *entity's decision to terminate an employee's employment before the normal retirement date*
    - an *employee's decision to accept an offer of benefits in exchange for the termination of employment*.

Category	Example	When recognised	How Measured
Short-term benefits	Wages, salaries, bonuses, paid leave, staff benefits (e.g. meal vouchers, cars)	As employees provide the service Wages/salaries (IS) Wage payable (BS)	Amount expected to be paid, no discounting
Post-employment benefits	Pensions, retirement medical plans, gratuity payments	After employment ends	- Defined contribution: expense contributions when due - Defined benefit: estimate obligation using actuarial valuation and discounting
Other long-term benefits	Long-service leave, long-term bonuses	After 12 months of service	Similar to defined benefit, but all changes go to profit or loss
Termination benefits	Redundancy or severance pay	When the company is committed to terminate employment	Recognise a liability for the expected payment

Most of pension funds refers to the last salary (which might occur also in 30y) to establish the contribution.

We have to make some actuarial assumptions, such as the employment turnover, mortality rate, salary increases, curtailance, restructurings…

POST-EMPLOYMENT BENEFITS

Post-employment benefit plans are formal or informal arrangements under which an entity provides post-employment benefits for one or more employees -> during the active life of the employee, the *company transfers to the pension fund part of the compensation* (let's say 1,000€), which are going to be *managed by the pension fund* -> after the

retirement, the pension fund will *pay-back a constant amount* (let's say, 400€) which is *based*, usually, *on the last salary*.

Post-employment benefit plans are classified as either defined contribution plans or defined benefit plans, depending on the economic substance of the plan as derived from its principal terms and conditions.

Defined contribution plans (usually are much more standardised, such as the 401K in the US) are post-employment benefit plans under which an entity pays fixed contributions into a separate entity (a fund) and will have no legal or constructive obligation to pay further contributions if the fund does not hold sufficient assets to pay all employee benefits relating to employee service in the current and prior periods. Under defined contribution plans the entity's legal or constructive obligation is limited to the amount that it agrees to contribute to the fund.

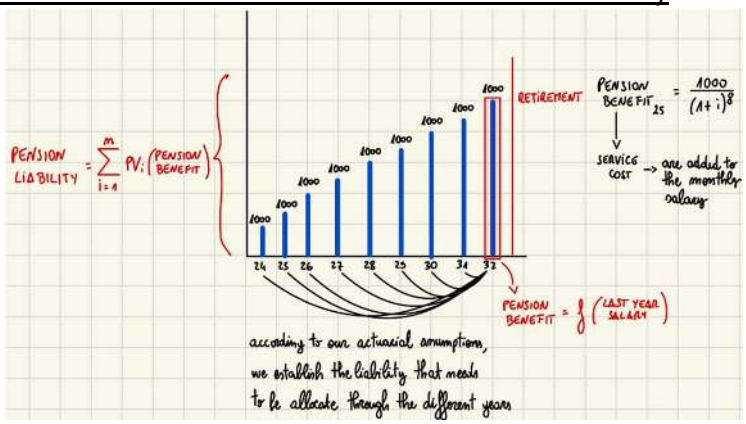
Accounting: The amount of the post-employment benefits received by the employee is determined by the *amount of contributions paid by an entity* (and perhaps also the employee) *to a post-employment benefit plan or to an insurance company*, together with *investment returns arising from the contributions*. Therefore, actuarial risk (that benefits will be less than expected) and investment risk (that assets invested will be insufficient to meet expected benefits) fall, in substance, on the employee (because once the employee retires, the company has no obligation towards the employee) -> *no liability on the employee*.

Defined benefit plans (not standardised, every company offers its own) are post-employment benefit plans other than defined contribution plans. Under defined benefit plans:

- the entity's obligation is to provide the agreed benefits to current and former employees
- actuarial risk (that benefits will cost more than expected) and investment risk fall, in substance, on the entity. If actuarial or investment experience are worse than expected, the entity's obligation may be increased

The company remains responsible for the payments -> *higher risk*. *Accounting*:

a) The *liability in the balance sheet* (which is the most relevant element of the bs) must be determined by reliably estimating, through the use of the actuarial technique of the projected unit credit method, the *final cost for the amount of benefits accrued* by employees in exchange for the work performed in the current and previous years. The entity must therefore determine to estimate (actuarial assumptions) the *demographic variables* (such as employee turnover and mortality) and *financial variables* (such as future salary increases and medical care costs) that will



influence the cost of benefits, discounting them in order to determine the **present value of the obligation at the balance sheet date**

b) the liability must be reduced by any **plan assets** (measured at fair value) -> this is liquidity, often invested in a portfolio of several assets (obligations, stocks, securities…), intended to meet the payments of benefits when they mature (these assets are periodically supplemented by the company through specific liquidity payments)

➔ At the end of the year, the information that is going to be shown in the Balance Sheet is the difference between the pension liability and the pension asset:
- Pension liability > pension asset -> *deficit*
- Pension liability < pension asset -> *surplus*

c) The **cost** in the income statement essentially includes the cost related to the work performed in the current year (*service cost*, and the sum of the present values of the several services costs creates the pension liability) plus the *net interest deriving from the change in the present value of the obligation as a result of the passage of time* (*interest cost* -> the service costs occurred during the years increase the liability, which will be paid in the future and, because of this, generates interests) net of financial income on plan assets (*interest income*) invested to face the liability payments in the future, income determined by applying the same discount rate to the fair value of the assets as used to discount the value of the obligation

d) Because we make several actuarial assumptions, it is required to conduct yearly a remeasurement of asset and liability -> any *actuarial gains/losses* due to *remeasurements of the present value of the obligation* (as a result of changes in: discount rate, estimates of personnel turnover, mortality/disability and increase in compensation) and/or the *fair value of plan assets* must be immediately recognized under other components of comprehensive income (OCI). Because these fluctuations tend to stabilize and compensate in the future, these gains/losses will never be recycled and reclassified to the income statement. We have to keep in mind that this happens just in case the real retirement date is the same of the expected one -> in case the employee stops the working performance before the retirement date (for example, because he dies), the balance of the OCI will go to the R/E

➔ They show up together in the Comprehensive income

With regard to the **projected unit credit method**, IAS 19 specifies that in order to determine the present value of its obligations, the company must allocate the benefit to periods of work according to the plan benefit formula (we project the last year salary, and based on this we project which should be the contribution that every year should be accrued during the working life of the employee). The projected unit credit method sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.

The **rate** used to discount post-employment benefit obligations (both funded and unfunded) shall be determined by reference to market yields (such as the bonds issued by competitors) at the end of the reporting period on *high quality corporate bonds* and has the *same maturity of the expected time of retirement*. For currencies for which there is no deep market in such “high quality” corporate bonds, the *market yields* (at the end of the reporting period) on *government bonds denominated in that currency shall be used*. The

currency and term of the corporate bonds or government bonds shall be consistent with the currency and estimated term of the post-employment benefit obligations.

EXAMPLE OF THE PROJECTED UNIT CREDIT METHOD

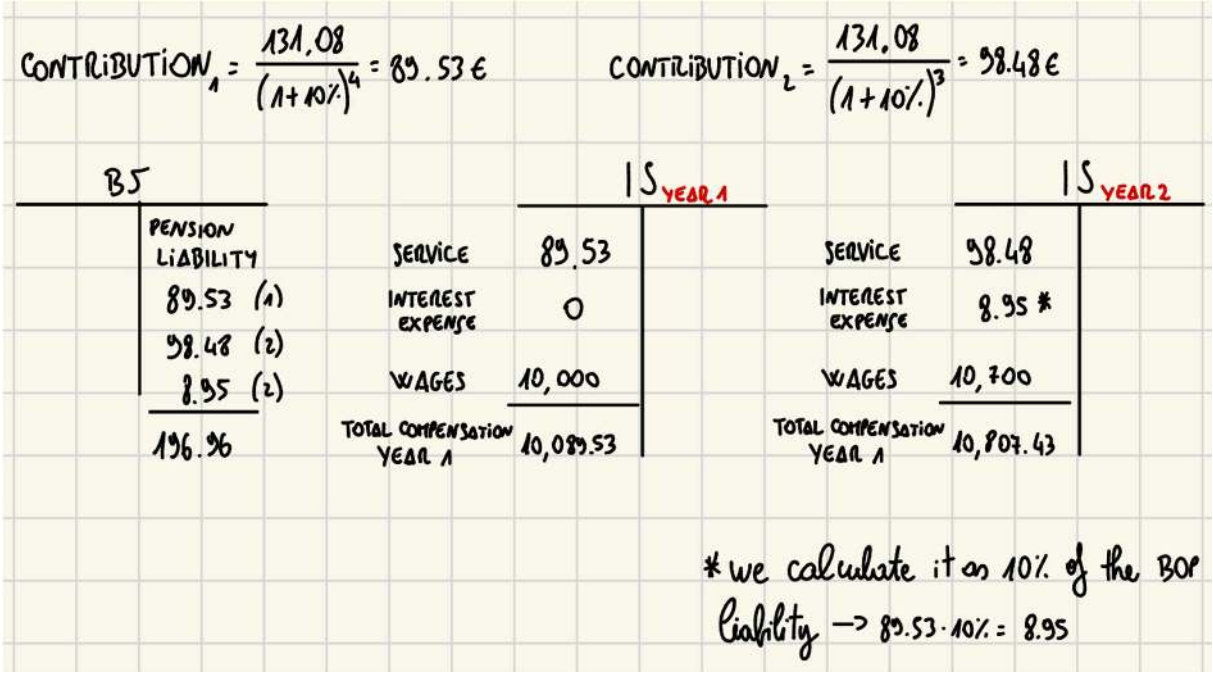
A lump sum benefit is payable on termination of service and equal to 1 per cent of final salary for each year of service. The salary in year 1 is CU10,000 and is assumed to increase at 7% (compound) each year. The discount rate used is 10% per year. The following table shows how the obligation builds up for an employee who is expected to leave at the end of year 5, assuming that there are no changes in actuarial assumptions. For simplicity, this example ignores the additional adjustment needed to reflect the probability that the employee may leave the entity at an earlier or later date

Year	1	2	3	4	5
Salary	10.000	10.700	11.449	12.250	13.108
Lump Sum Benefit %	1,00%	1,00%	1,00%	1,00%	1,00%
Benefit for the current year	131,08	131,08	131,08	131,08	131,08
Benefit of the previous years	0,00	131,08	262,16	393,24	524,32
Benefit at the end of the year	131,08	262,16	393,24	524,32	655,40
No. of years to the end of the plan	4	3	2	1	0
Discount rate	10,0%	10,0%	10,0%	10,0%	10,0%
NPV of the obligation	89,53	196,96	324,99	476,65	655,40
Opening Obligation	0	89,53	196,96	324,99	476,65
Current SERVICE COST	89,53	98,48	108,33	119,16	131,08
INTEREST COST at 10%	0,00	8,95	19,70	32,50	47,67
Closing Obligation	89,53	196,96	324,99	476,65	655,40

The first step is to establish the benefit for the current year -> as the text says, it is 1% of the salary in the last year of active life (identified as the basis for the pension calculation), which is calculated in the following way:

$$1\% * (10{,}000€ * (1 + 7\%)^4) = 1\% * 13{,}108€ = 131.08€$$

At year 1, we cannot put 131.08€ as the current service cost, as we have to discount it for the remaining years (which are 4 years) at the discount rate established by the company (10%) -> 89.53€ which is going to increase the liability and is going to be added to the wage provided to the employee.



Redetermination of liability

We have understood that it requires a lot of effort for a company to establish which is going to be the contribution at the end of the employment plan. It may be the case that the entity has to **redetermine the value of the liability** as a result of:

1) *changes to the plan* (plan amendment) such as an *increase in the percentage applied to remuneration* for the calculation of the accrued credit unit
2) *reduction or termination of the plan* (plan curtailments or settlements), for example following the closure of a plant and/or collective redundancies.

These cases give rise to a cost attributable to past services (*past service cost*). Those changes have a *retroactive effect* and are not the same of the same factors that -> they are considered as an expense in the IS, and increase/decrease the liability, but they are not going to affect the value in the future (otherwise we'll record the effect on the OCI). Accordingly, an entity shall recognize that amount in the income statement as an alternative to:

a) *on the date on which a change or reduction of the plan occurs* or if earlier
b) when the entity recognizes *related restructuring costs* (see IAS 37) or *employee termination benefits*

As noted above, the liability (measured using the credit unit projection method) must subsequently be reduced by any plan assets measured at fair value.

Plan Assets:

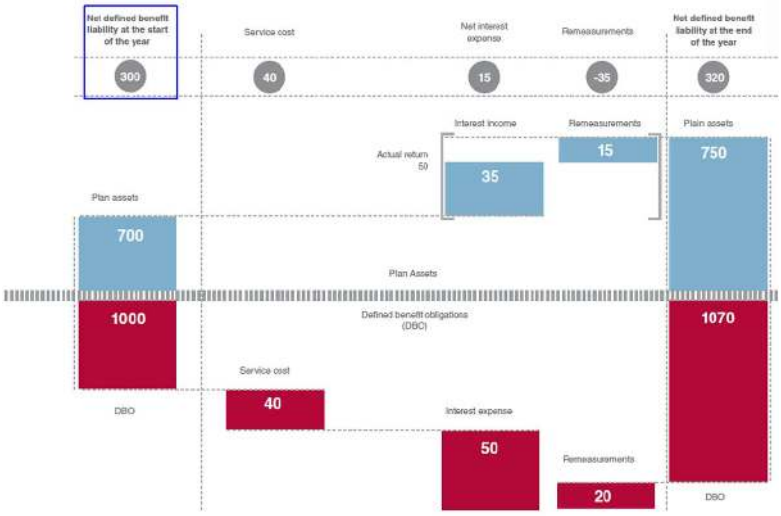
- must be measured at fair value at the end of each period
- generate interest income on the basis of the discount rate of the obligation applied at initial fair value (income that reduces the interest cost)
- increase as a result of liquidity contributions made during the period

- they can determine remeasurement in relation to the difference between actual financial income (actual return) and those counted as interest income.

Plan assets comprise:

a) *assets held by a long-term employee benefit fund*
b) *qualifying insurance policies*.

A graphical representation of a defined benefit plan



COMPREHENSIVE EXAMPLE

For a defined benefit plan there are the following opening values on 01/01/25:

- Obligations: 500.000
- Plan Assets: 450.000
- The discount rate for the plan is 10,0%

At the end of year 2025 the company has determined the following amounts:

- Service Cost: 150.000
- Past Service Cost: 0
- Actual Return on Plan Assets: 50.000
- Change of the ending obligation for different actuarial parameters: 75.000
- Payments of the obligation using Plan Assets: 80.000
- Cash contributions to Plan Assets from the Employer: 100.000

At the end of year 2026 the company has determined the following amounts:

- Service Cost: 155.000
- Past Service Cost: 15.000
- Actual Return on Plan Assets: 66.000
- Change of the ending obligation for different actuarial parameters: 60.000
- Payments of the obligation using Plan Assets: 85.000
- Cash contributions to Plan Assets from the Employer: 100.000

Determine the following values at the end of the two years (For zero amounts, please indicate “0”)

1. Total Assets
2. Total Liabilities
3. Net Income (before O.C.I. items)
4. O.C.I. items

STATEMENT OF FINANCIAL POSITION

	2025	2026
PLAN ASSETS:		
Beginning amount of Plan Assets	450.000	520.000
Interest Income	45.000	52.000
Remeasurement of plan assets (+ Actual Return - Interest Income), i.e. "*Return on Plan Assets*"	5.000	14.000
Payments to employees	-80.000	-85.000
Cash contributions to plan Assets from the Employer	100.000	100.000
Ending balance	**520.000**	**601.000**
OBLIGATION:		
Beginning amount of Obligation	500.000	695.000
Interest Cost	50.000	69.500
Service Cost	150.000	155.000
Past Service Cost	0	15.000
Remeasurement of the obligation (change of estimates for the personnel turnover)	75.000	60.000
Payments to employees	-80.000	-85.000
Ending balance	**695.000**	**909.500**
NET OBLIGATION (reported into the balance sheet)	**175.000**	**308.500**

Statement of comprehensive income

	2025	2026
Net Income before O.C.I. items:		
Service Cost	-150.000	-155.000
Past Service Cost	0	-15.000
Interest Income	45.000	52.000
Interest Cost	-50.000	-69.500
Net Interest Cost	-5.000	-17.500
Total	**-155.000**	**-187.500**
O.C.I. Items:		
Remeasurement of the obligation (change of estimates for employee turnover)	-75.000	-60.000
Remeasurement of plan assets (+ Actual Return - Interest Income), i.e. "*Return on Plan Assets*"	5.000	14.000
Total	**-70.000**	**-46.000**
COMPREHENSIVE INCOME	**-225.000**	**-233.500**

Statement of financial position:

- Plan asset -> this value is increased by the amount of interest income, which is calculated applying the discount rate to the value of the beginning value of the asset. Once we have calculated this value, we have to compare it with the actual return of the plan asset:
    - interest income > actual return -> we have to decrease the value of the plan asset
    - interest income < actual return -> we have to increase the value of the plan asset

  Lastly, we have to register any increase from the employer (as they have provided the compensation to the employee, so they have to increase the Plan asset) or decrease of plan assets (which has been caused by the payment to the Employee using Plan asset)
- Obligation -> the first element that increases this value is the interest expense which is calculated by applying the discount rate to the beginning value of the period. After that we have to take in consideration the service costs that have been provided during the current period (and the past service costs) which increases the obligation value. After that, because there's a change of the ending obligation for different actuarial parameters, we have to change the value of the obligation. Lastly, as we have paid one employee during the current year by using plan assets, we have to reduce the value of the obligation.

➔ As we said before, the value that is going to be shown in the BS is the difference between obligation and plan asset.

Statement of comprehensive income -> the main components of the NI are the service costs (together with the past service costs, as that's the compensation we have given to the employee) and the net interests (net income – net costs). In order to obtain the Comprehensive income, we have to add the Other Comprehensive Income components, which are connected to the revaluation of both the obligation and the plan asset in order to make it equal to their fair value.

Exercise 1

For a defined benefit plan there are the following opening values on 01/01/25:

- Liability (obligation): 800.000
- Plan assets: 450.000

At the end of the year, it was necessary to restate the present value of the obligation following changes in the estimates of staff turnover: the new value was equal to 870.000. In addition, the following values were determined during the period:

- Benefit accrued for the service (present value): 70.000
- Actual return on plan assets: 42.000
- Annual discount rate: 4,0%
- Past service cost: 8.000
- Cash contributions to Plan Assets from the Employer: 150.000
- Benefit paid to employees: 40.000

Determine the following values at the end of the year (For zero amounts, please indicate "0")

1. Total Assets
2. Total liabilities
3. Net Income (before O.C.I. items)
4. O.C.I. items

Plan Assets:	
Beginning amount of Plan Assets	450.000
Interest Income	18.000
Remeasurement of plan assets (+ Actual Return - Interest Income)	24.000
Benefit paid to employees	-40.000
Cash contributions to Plan Assets from the Employer	150.000
Ending balance	**602.000**
Obligation:	
Beginning amount of Obligation	800.000
Interest Cost	32.000
Service Cost	70.000
Past Service Cost	8.000
Remeasurement of the obligation (change of estimates for the personnel turnover)	70.000
Benefit paid to employees	-40.000
Ending balance	**940.000**

Net Income before O.C.I. items:	
Service Cost	-70.000
Past Service Cost	-8.000
Interest Income	*18.000*
Interest Cost	*-32.000*
Net Interest Cost	-14.000
Total	**-92.000**
O.C.I. Items:	
Remeasurement of the obligation (change of estimates for the personnel turnover)	-70.000
Remeasurement of plan assets (+ Actual Return - Interest Income)	24.000
Total	**-46.000**

EXERCISE 2

For a defined benefit plan there are the following opening values on 01/01/25:

- Liability (obligation): 8.500
- Plan assets: 7.000

At the end of the year, it was necessary to restate the present value of the obligation following changes in the estimates of staff turnover: the new value was equal to 8.900. In addition, the following values were determined during the period in question:

- Benefit accrued for the service (present value): 300
- Actual return on plan assets: 200
- Annual discount rate: 5,0%
- Past service cost: 200
- Cash contributions to Plan Assets from the Employer: 800
- Benefit paid to employees: 1.100

Determine the following values at the end of the year (For zero amounts, please indicate "0"):

1. Total Assets
2. Total liabilities
3. Net Income (before O.C.I. items)
4. O.C.I. items

Assets:	
Beginning amount of Plan Assets	7.000
Interest Income	350
Remeasurement of plan assets (+ Actual Return - Interest Income)	-150
Benefits paid to employees	-1.100
Cash contributions to Plan Assets from the Employer	800
Ending balance	**6.900**
Liabilities:	
Beginning amount of Obligation	8.500
Interest Cost	425
Service Cost	300
Past Service Cost	200
Remeasurement of the obligation (change of estimates for the personnel turnover)	400
Benefits paid to employees	-1.100
Ending balance	**8.725**

Nei Income before O.C.I. items:	
Service Cost	-300
Past Service Cost	-200
Interest Income	*350*
Interest Cost	*-425*
Net Interest Cost	-75
Total	**-575**
O.C.I. Items:	
Remeasurement of the obligation (change of estimates for the personnel turnover)	-400
Remeasurement of plan assets (+ Actual Return - Interest Income)	-150
Total	**-550**

IFRS 9 FINANCIAL INSTRUMENTS

A **financial instrument** is any contract that gives rise to a *financial asset* of one entity and a *financial liability or equity* instrument of another entity. Standards on financial instruments shall be applied by all entities to all types of financial instruments except:

- interests in subsidiaries, associates, or joint ventures (covered by IFRS 10, IAS 27, IAS 28)
- employee benefit plans (covered by IAS 19)
- insurance contracts (IFRS 17)
- share-based payment transactions (IFRS 2)

Categories of financial assets and liabilities

Financial Assets are classified into three categories:

- *Amortised Cost*
- *Fair Value Through Profit or Loss (FVTPL)*
- *Fair Value Through Other Comprehensive Income (FVTOCI)*

Financial Liabilities are classified into two categories:

- *Amortised Cost*
- *Fair Value Through Profit or Loss (FVTPL)*

The classification of a financial instrument (on one of the categories) **depends** on:

- The nature of the instrument (debt, equity, derivative, etc.)
- Whether an irrevocable option is selected at initial recognition
- Only for *financial assets that are debt instruments* (bonds and receivables): the strategy of investment, i.e. the entity's business model for managing the financial assets

➔ Note: the inception of the contract = time we categorize it into one of the categories.

Distinction between Liabilities and Equity → the standards take a "*substance over form*" approach since an **equity instrument**:

- is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities
- includes no contractual obligation to deliver cash or another financial asset to another entity.

Debt Instrument

For financial assets having the characteristics of debt instruments, i.e. bonds, trade receivables and financial receivables (loans to other entities) there are **two fundamental methods**: *amortised cost* or *FVTOCI*.

A financial asset shall be measured at **amortised cost** if both of the following conditions are met:

a) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely *payments of principal and interest* on the principal amount outstanding (SPPI test)
b) the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows (i.e. interests and reimbursements).

➔ This category applies to assets held primarily to earn interest income and recover principal — e.g., loans or bonds held to maturity.

A financial asset shall be measured at **fair value through other comprehensive income (FVTOCI)** if both of the following conditions are met:

a) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely *payments of principal and interest* on the principal amount outstanding
b) the financial asset is held within a business model whose objective is achieved by both *collecting contractual cash flows* and *selling financial assets*

Contractual terms: Solely Payments of principal and interest (SPPI test)

Contractual cash flows that are *solely payments of principal and interest* on the principal amount outstanding are consistent with a basic lending arrangement. In a basic lending arrangement, consideration for the *time value of money* and *credit risk* are typically the most significant elements of interest. However, in such an arrangement, interest can also include consideration for *other basic lending risks* (for example, liquidity risk) and *costs* (for example, administrative costs) associated with holding the financial asset for a particular period of time. In addition, interest can include a profit margin that is consistent with a basic lending arrangement.

At the opposite, contractual terms that introduce exposure to risks or volatility in the contractual cash flows that is unrelated to a basic lending arrangement, such as *exposure to changes in equity prices, commodity prices* or *issuer performance*, do not give rise to contractual cash flows that are solely payments of principal and interest on the principal amount outstanding.

SPPI TEST: EXAMPLES

Which financial assets could **meet the SPPI test**? Typical examples:

- A bond that is repayable over 3 years and pays the *variable or fixed market interest rate*.
- A fixed-rate loan repayable over 10 years but which allows the borrower to pay in advance an amount equal to the unpaid amounts of principal and interest on the outstanding principal.
- An interest-free loan from a parent company to a subsidiary that is repayable in 5 years -> this is because the principal amount (i.e. the fair value at initial recognition) would be increased at par using the effective interest rate method.

What financial assets could **fail the SPPI test**? Typical examples:

- All equity investments because their contractual conditions generate equity risk.
- All derivatives.
- A bond with interest payments tied to the issuer's EBITDA or revenues or the potential consideration linked to the profits generated by the disposal of some assets -> this is because these characteristics introduce *exposures to risks on the value of the shares*.

A *financial asset* shall be measured at *fair value through profit or loss* (FVTPL) *unless* it is measured at *amortised cost* or at *fair value through other comprehensive income* (FVTOCI) -> in particular, the advantage of using the FVTOCI is to stabilize the fluctuations in FV, that it is not possible to show in the IS, and we are making strong assumptions of the long term horizon for which we are holding the asset. *FVTPL* must be adopted for those financial assets that are *debt instruments held for trading*. For *equity*

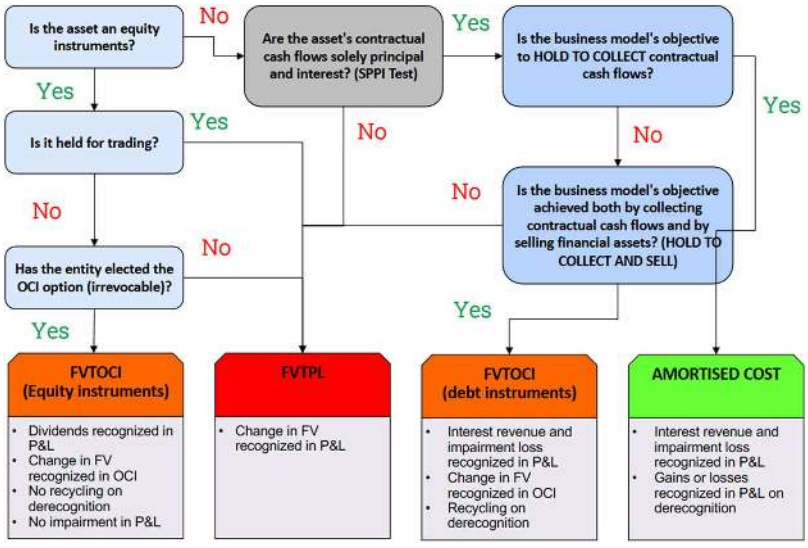
investments and *derivatives* only the FVTPL method is possible, with two fundamental exceptions:

- *FVTOCI option for equity investments*
- *FVTOCI for some hedging derivatives* (the so called “cash flow hedge”)

FVTOCI option for equity investments -> An entity may make an irrevocable election at initial recognition for investments in equity instruments that would otherwise be measured at FVTPL to present subsequent changes in fair value in other comprehensive income -> *only if they are not held for trading*.

Derivatives are *usually speculative contract* (you can use them to bet on commodities contracts). Within the world of derivative contracts, we can have the same instrument that can be used for *speculative purposes* (for example, Eni decides to buy a future contract on commodities because they have expectations about the change in the price and the CFO wants to gain something from the difference in prices) or for *hedging purposes* (for example, Eni CFO decides to purchase a future contract to protect the company against expected CF because of the possible fluctuations in the price of commodities). Under IFRS 9, for specific hedging contracts there is the possibility to treat the change in value using FVTOCI -> for the hedging, we can classify in:

- FVTOCI -> hedging for protecting expected future CF
- FVTPL -> FV



The first thing we have to understand if we are talking about an equity instrument or not. In case the instrument is held for *trading purposes*, we have to record it the FVTPL, otherwise we have to see if the *company has chosen the FVTOCI option* (in case of a negative response, we have to use the FVTPL) if is, theoretically, hold for a long period of time.

In case the asset is *not an equity instrument*, we have to conduct the SPPI test (so, understand if the debt instrument is based on the payment of a coupon and the repayment of the principal). In case we fail the test -> *FVTPL*. Otherwise, we have to understand what the business model of the company is:

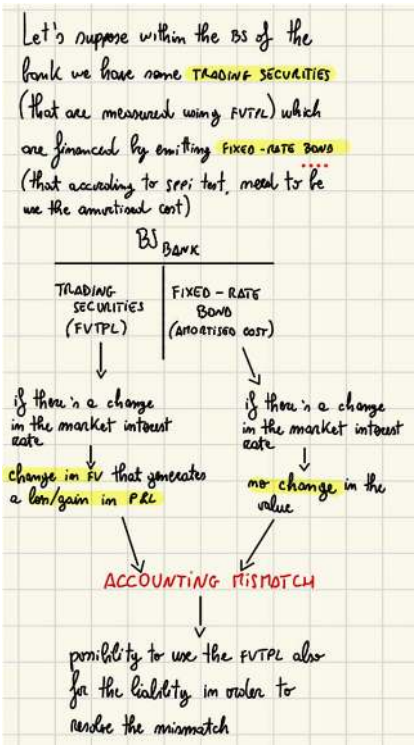
- Hold to collect (it's passive, the only purpose is just to collect CF) -> *amortised costs*
- Hold to collect and sell (it's more active, as their purpose is also to sell the asset when the CFO believes to be the right moment) -> *FVTOCI*

Classification of financial liabilities

An entity shall classify all financial liabilities as subsequently measured at amortised cost, except for financial liabilities at fair value through profit or loss. Liabilities are measured at *FVTPL* in case of:

a) derivatives (since they have intrinsic speculative characteristic)
b) FVTPL Option (typically for bonds that are publicly listed).

FVTPL Option -> An entity may, at initial recognition, irrevocably designate a financial liability as measured at *fair value through profit or loss* when doing so results in more relevant information, because it *eliminates or significantly reduces a measurement or recognition inconsistency* (sometimes referred to as 'an accounting mismatch') that would otherwise arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases.



An *accounting mismatch* is an inconsistency in the measurement of related assets and liabilities, which can lead to *volatile financial reporting* and *present a risk to companies*. This can happen when an asset is *measured at one value* (like fair value), while a related liability is *measured at another* (such as amortised cost).

FVTPL Option: Accounting effects -> Let's suppose that a company might decide to use the FVTPL to measure also the liability -> according to IFRS 9, not all the changes in FV need to be allocated to the P&L. An entity shall present a *gain or loss* on a financial liability that is designated as at fair value through profit or loss that need to be split into two components:

a) *Change in the credit condition/risk of the bank* -> *other comprehensive income*
b) *Change in the market condition* (that represent the remaining amount of change in FV) -> *profit or loss*, unless the treatment of the effects of changes in the liability's credit risk described in (a) would create or enlarge an accounting mismatch in profit or loss

Let's consider the previous example:

- If the market interest of the fixed rate bond goes up, in the BS the liability will decrease, and the *credit quality is deteriorated*, and it became cheaper to buy that liability -> in the PL you recognise a *GAIN*.
- If the market interest of the fixed rate bond goes down, the liability increases and the credit quality increases and we are going to recognise a *LOSS*.

➔ There is a **paradox**, because in case the credit quality increases, we are penalised and vice versa. How do we resolve it? The part of the change that is cause by the credit conditions goes to the OCI, while the one caused by market condition goes to the IS

Example

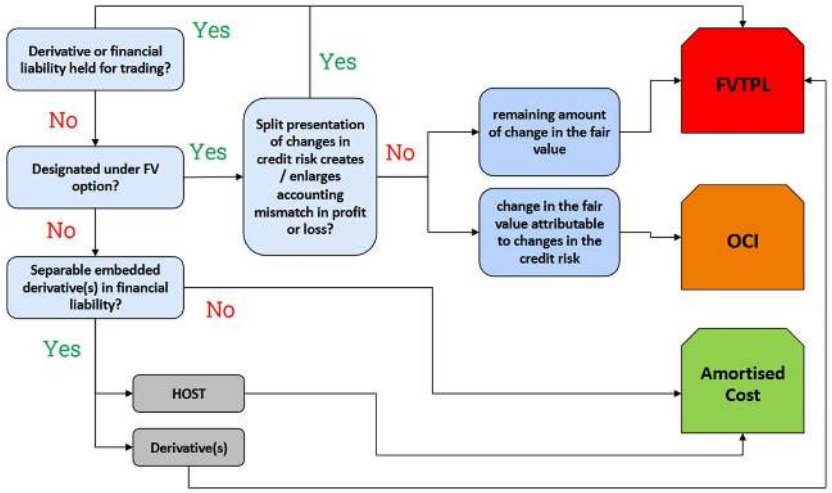
1/1/x1, the company issues a ten-year bond at par with a nominal value of € 150,000 and a nominal
annual interest rate of 8%. The nominal rate is aligned with market rates, taking LIBOR as the reference or benchmark rate, equal to 5% at this date: the difference of 3% is attributable to the company's specific credit risk for this bond.

At the end of the first year, it is considered that:

- The stream of expected interest payments (years 2 to 10) equals to € 12,000 per year (€ 150,000 x 8%) for the entire period
- LIBOR is now 4.75% (-25 basis points, maybe because the economy is getting better, there is less risk) -> What is going to be the fair value due to the change to an external market condition? We have to calculate the net present value of future payments for interests (9 payments of € 12,000) and final repayment of principal (€ 150,000), at the rate of 7.75% (4.75% + 3%), i.e. assuming an unchanged credit risk (3%) -> equals to € 152,367.13 -> the change of 2,367.13€ is classified between the changes in market conditions, as it is assumed to be the only factor that influenced the discount factor

The fair market value of the bond amounts to € 153,811.29, resulting in an implied interest rate of 7.60% (effective interest rate for a security having this fair value and generating 9 interest payments of € 12,000 and a final repayment of € 150,000 in the future). The company assumes that the change in market conditions is explained solely by the change in LIBOR and that, consequently, the difference between € 152,367.13 and € 153,811.29 (€ 1,444.15) is solely due to its credit risk. The accounting records are:

Unrealized loss on FV change (net income)	€ 2.367,13	
OCI items for FV change from credit risk	€ 1.444,15	
Financial liabilities at FVTPL		€ 3.811,29



INTEREST, DIVIDENDS, LOSSES AND GAINS -> Interest, dividends, losses and gains relating to a financial instrument or a component that is a financial liability shall be recognised as *income or expense in profit or loss*. Distributions to holders of an equity instrument shall be recognised by the
entity directly in equity. Transaction costs of an equity transaction shall be accounted for as a deduction from equity.

TREASURY SHARES (when the company buys back its own shares) -> If an entity reacquires its own equity instruments, those instruments ('treasury shares') shall be deducted from equity (contra equity account, because it is not an investment done by a third party and there is lower protection to external shareholders). No gain or loss shall be recognised in profit or loss on the purchase, sale, issue or cancellation of an entity's own equity instruments. Such treasury shares may be acquired and held by the entity or by other members of the consolidated group. Consideration paid or received shall be recognised directly in equity

Treasury shares: example

An entity buys (buy-back) 100 shares of treasury shares at a price of $20 each:

Treasury Stock	**2,000**	
Cash		**2,000**

Shareholders' equity will highlight the following:

Stockholders' Equity

Paid-in capital	
Common stock, $0.10 par, 10,000 shares authorized, 2,000 shares issued, 1,900 shares outstanding	$ 200
Paid-in capital in excess of pair - common	49,800
Total paid-in capital	50,000
Retained earnings	28,000
Subtotal	$ 78,000
Less: treasury stock, at cost (100 shares at $20)	– 2,000
Total stockholders' equity	$ 76,000

➔ As it is possible to see, the value of treasury shares reduces the total value of equity.

Now suppose that the firm sells 30 of the 100 shares at a unit price of $29 (29 x 30 = 870); Recall that the shares were purchased at a price of $20 per share:

Cash (30 shares at $29 selling price)	**870**	
Treasury Stock (30 at $20 cost)		**600**
Paid-in Capital from Treasury Stock		**270**

We have to reduce the amount of treasury shares for the 30 shares, but we have to keep the price at which the company has initially bought them (in this example, 20$) -> the *difference* should be accounted in the equity in a *specific equity reserve* called paid-in capital.

Shareholders' equity shows a profit of 270 as "paid-in-capital from treasury shares"

Stockholders' Equity	
Paid-in capital	
Common stock, $0.10 par, 10,000 shares authorized, 2,000 shares issued, 1,930 shares outstanding	$ 200
Paid-in capital in excess of par - common	49,800
Paid-in capital from treasury Stock	270
Total paid-in capital	50,270
Retained earnings	28,000
Subtotal	$ 78,270
Less: Treasury stock, at cost (70 shares at $20)	– 1,400
Total stockholders' equity	$ 76,870

Suppose also that the entity later sells 25 shares (of the remaining 70) at the unit price of $16 (25 x 16 = 400) with a loss of 100 (4 x 25) -> because we cannot use the IS, we have to use an equity component to compensate this loss:

Cash (25 shares at $16 selling price)	400	
Paid-in Capital from Treasury Stock ("loss")	100	
Treasury Stock (25 at $20 cost)		500

The loss was charged, as it was large, to the item "paid-in-capital from treasury shares" (the amount was 270)

Stockholders' Equity	
Paid-in capital	
Common stock, $0.10 par, 10,000 shares authorized, 2,000 shares issued, 1,955 shares outstanding	$ 200
Paid-in capital in excess of par - common	49,800
Paid-in capital from treasury stock	170
Total paid-in capital	50,170
Retained earnings	28,000
Subtotal	$ 78,170
Less: Treasury stock, at cost (45 shares at $20)	– 900
Total stockholders' equity	$ 77,270

The company then sells the remaining 45 treasury shares at a price of $12 per share and therefore collects $540 (45 x 12) against a historical cost of $900 (45 x 20). It should be remembered that the item "paid-in-capital from treasury shares" amounted to $170 at the end of the previous slide -> The loss in excess of $170 is attributed to a reduction in other retained earnings, which are reduced from $28,000 to $27,810

Cash (45 shares at $12 selling price)	540	
Paid-in Capital from Treasury Stock ("loss")	170	
Retained Earnings ("loss" too big for PIC TS)	190	
Treasury Stock (45 at $20 cost)		900

Stockholders' Equity	
Paid-in capital	
Common stock, $0.10 par, 10,000 shares authorized, 2,000 shares issued and outstanding	$ 200
Paid-in capital in excess of par - common	49,800
Total paid-in capital	50,000
Retained earnings	27,810
Total stockholders' equity	$ 77,810

All public companies buy back their shares to sell them back to generate a gain and increase their market share price. If the company the keep on doing that and always generates a gain, they can at some point allocate part of the paid-in capital to the retained earning as far as they leave enough retained earnings to protect the effect of treasury share account (so for example, in case there is 1mln$ in treasury shares and 2mln$ of paid-in capital -> it is possible to transfer 1mln$ of the paid-in capital to the retained earnings, because there is enough left to cover the effect of treasury share).

Distinction between equity and liability

About the *distinction between liabilities and equity* the standards take a "*substance over form*" approach since an *equity instrument*:

- is any contract that evidences a residual interest in the assets of an entity after deducting all its liabilities AND
- includes no contractual obligation to deliver cash or another financial asset to another entity.

More specifically: If an entity does not have an unconditional right to avoid delivering cash or another financial asset to settle a contractual obligation, the obligation meets the definition of a *financial liability*. Usually, financial instruments are classified:

- as *equity* for the *full amount* (ex Share Capital)
- as *liability* for the *full amount* (ex. Bonds)
- by separately recognizing the *components of liability and equity* for a *compound financial instrument* (ex. Convertible Bonds)

Compound financial instruments -> An entity recognizes separately the components of a financial instrument that *creates a financial liability of the entity* and *grants an option to the holder* of the instrument to *convert it into an equity instrument* of the entity.

For example, *a bond* or similar instrument *convertible by the holder into a fixed number of ordinary shares* of the entity is a compound financial instrument. From the perspective of the entity, such an instrument comprises two components:

1. a financial liability (a contractual arrangement to deliver cash or another financial asset)
2. an equity instrument (a call option granting the holder the right, for a specified period of time, to convert it into a fixed number of ordinary shares of the entity).

When the initial carrying amount of a compound financial instrument is allocated to its equity and liability components, the equity component is assigned the *residual amount after deducting from the fair value* of the instrument as a whole *the amount separately determined for the liability component* ('*residual value method'*):

$$Proceeds\ from\ the\ issuance\ -\ FV\ of\ liability\ component\ =\ FV\ of\ equity\ component$$

➔ we have to conduct this process because most of the time the interest rate paid by the company at the issue date is higher than the market one -> We calculate the FV of the corporate bond without considering the equity component. We have to benchmark the bond with similar contracts that are not convertible and use its yield to calculate the FV of the liability ignoring the equity component.

Example of accounting by issuer of compound instrument

To illustrate the allocation of proceeds in a compound instrument situation, assume these facts:

- 5,000 convertible bonds are issued by Needy Company on January 1, 20XX. The bonds are due December 31, 20XX+3.
- Issuance price is par (€1,000 per bond); total issuance proceeds are €5,000,000.
- Interest is due in arrears, semi-annually, at a nominal rate of 5%.
- Each (€1,000 face amount) bond is convertible into 150 ordinary shares of Needy Company.
- At issuance date, similar, non-convertible debt must yield 8%.

Required residual value method. The issuer of compound financial instruments must assign full fair value to the portion that is to be classified as a liability, with only the residual value being allocated to the equity component. The computation for the above fact situation would be as follows:

1. Use the reference discount rate, 8%, to compute the market value of straight debt carrying a 5% yield:

PV of €5,000,000 due in four years, discounted at 8%	€3,653,451
PV of semi-annual payments of €125,000 for eight periods, discounted at 8%	841,593
Total	€4,495,044

2. Compute the amount allocable to the conversion feature:

Total proceeds from issuance of compound instrument	€5,000,000
Value allocable to debt	4,495,044
Residual value allocable to equity component	€ 504,956

Example of compound financial instrument: convertible bond

Entity A issues a CU1,000 (CU stands for Currency Unit) convertible note in return for the same amount of cash consideration. The note has a maturity of 3 years from its date of issue. The note pays a 10% annual coupon and it's possible to convert the bond into issuer's shares. The market interest rate for a note without a conversion feature would have been 12% at the date of issue. The Fair Value of the liability component is 952 (NPV @12% of the following cash flows: -100; - 100; -1,100). Therefore, we have:

- Transaction price (fair value) CU1,000
- Less: liability component (FV) CU (952)

➔ Equity component (residual) CU48

Entity A incurred *transaction costs* of CU100 when it issued the convertible note (for compound instruments transaction costs are to be allocated to the liability and the equity components in proportion to the allocation proceeds):

	Transaction price (CU) (A)	Transaction costs (B)	Measurement at initial recognition (A) – (B)
Liability	CU952	CU(95)	CU857
Equity	CU48	CU(5)	CU43
Total	CU1,000	CU(100)	CU900

When we enter the contract, the FV of the liability is 857. Under the IFRS rule, whenever there is a difference between the transaction price and the FV, we need to recalculate the effective interest rate of the contract -> *IRR* (so identify the interest rate that make the difference equal to 0). This results in the transaction costs being amortised over the term of the convertible note through an *adjustment to the effective interest rate*, which increases the rate to 16.41% (IRR for the following cash flows: +857; -100; -100; -1,100). Entity A therefore records interest expense at the effective interest rate of 16.41%

	Beginning balance	Interest expense @ 16.41%	Cash coupon @ 10%	Closing balance
Year 1	CU857	CU141	CU(100)	CU898
Year 2	CU898	CU147	CU(100)	CU945
Year 3	CU945	CU155	CU(100)	CU1,000

Assume that the holder can exercise its option to convert the note into shares at any time before the note's maturity date, and the holder elects to convert early at the end of year 2. The carrying amount of the liability is CU945 at the end of year 2. The journal entries is:

- Dr Liability CU945
- Cr Equity CU945

(to transfer the carrying amount of liability to equity for the early conversion of the note into shares)

Substance of a financial instrument

As a general principle, we can affirm that **equity** does not imply any right for the holder to receive any kind of payment in the future, while, on the other hand, holding a **financial liability** means that we have the right to receive future cash or asset payments. The **substance of a financial instrument**, rather than its legal form, governs its classification in the entity's statement of financial position. Substance and legal form are commonly consistent, but not always. Some financial instruments take the legal form of equity but are liabilities in substance and others may combine features associated with equity instruments and features associated with financial liabilities. For example:

- a *preference share that provides for mandatory redemption* by the issuer for a *fixed or determinable amount* at a *fixed or determinable future date*, or gives the holder the right to require the issuer to redeem the instrument at or after a particular date for a fixed or determinable amount, is a *financial liability* (there is an obligation in the future that the issuer has to buy back the shares, which is something that it is not possible to see for a classic equity instrument, so it's a liability)
- a financial instrument that *gives the holder the right to put it back to the issuer* (so, force him to buy back them) *for cash or another financial asset* (a 'puttable instrument') is a *financial liability*.

A financial instrument that does *not explicitly establish a contractual obligation* to deliver cash or another financial asset may establish an obligation indirectly through its terms and conditions (*'indirect obligations'*). For example, shares that require fixed dividends every year (ex. 5%) -> if the distribution is not established, the right accumulates over time, and

interest and penalties may
also be burdened on it.

Case 1 - Instruments subject to contingent settlement provisions.

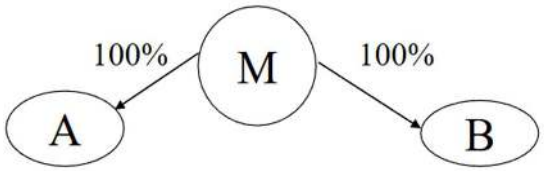
These are instruments subject to contractual clauses that require the repayment of capital upon the occurrence of certain events. For example, a share includes:

1. Fixed dividend of 5%.
2. However, this dividend is possible because it is allowed only if it has been resolved that ordinary shareholders will also receive dividends in that year.
3. The repayment of the capital is provided only if:
    a. A take-over occurs, or
    b. In the event of liquidation of the company.

Note: let's assume that the latter two eventualities are to be considered remote. *Is the instrument EQUITY or DEBT?* EQUITY -> Because of the third clause, there is a sort of obligation in case one of those events occurs. In reality, when we have these weird clauses in a contract (also called "non-genuine"), as a common practice we don't use those clauses to define the nature of the contract -> if we don't consider that clause, we are in front of a financial instrument that acts exactly like an ordinary share.

Case 2 – Perpetual bonds

An insurance group is structured as follows:
(M = Parent; A and B = subsidiaries):



A wants to *finance itself but does not want to affect either M's shareholding relationship* (so it does not want new shareholders) and *does not want to increase its debt*. Therefore, A issues a bond structured as follows:

- the interest paid is equal to the shareholder's dividend (d=i)
- there is no reimbursement of the capital ('perpetual')
- the bond includes a PUT OPTION, but on B. B will be required to reimburse the principal if this right is exercised by the bondholders.

Is the instrument EQUITY or DEBT? For *A it's equity* (they are perpetual and because interest is connected to dividends, in case the company does not distribute any, the holder won't receive anything), for *B it's a liability* (there is an obligation to pay holders in case they exercise the option), for *M it's liability* (what is important for the group perspective, it's the behaviour of the company towards third parties -> because this is what happens with this instrument, and the repayment is something internal, which at the end of the consolidation process will be eliminated, what is left is just the obligation B has for the option).

A contract is not an equity instrument solely because it may *result in the receipt* or *delivery of the entity's own equity instruments*. An entity may have a contractual right or obligation to receive or deliver a number of its own shares or other equity instruments that varies so that the fair value of
the entity's own equity instruments to be received or delivered equals the amount of the

contractual right or obligation (a variable number of shares). Such a contractual right or obligation may be for a fixed amount or an amount that fluctuates in part or in full in response to changes in a variable other than the market price of the entity's own equity instruments (e.g. an interest rate, a commodity price or a financial instrument price). Two examples are:

A) *a contract to deliver as many of the entity's own equity instruments as are equal in value to CU100* and
B) a contract to *deliver as many of the entity's own equity instruments as are equal in value to the value of 100 ounces of gold*.

➔ Such a contract is a **financial liability** of the entity even though the entity must or can settle it by delivering its own equity instruments. It is not an equity instrument because the entity u*ses a variable number of its own equity instruments to settle the contract* -> We don't know today the number of shares, and this uncertainty it is figured in a liability.

Initial recognition

At **initial recognition**, an entity shall measure a financial asset or financial liability at its *fair value plus or minus*, in the case of a financial asset or financial liability *not at fair value through profit or loss*, *transaction costs* that are directly attributable to the acquisition or issue of the financial asset or financial liability. The *fair value of a financial instrument at initial recognition is normally* the transaction price (i.e. the fair value of the consideration given or received).

However, if the fair value of the financial asset or financial liability at initial recognition differs from the transaction price (usually as a presence of special conditions), the entity shall account for that instrument at that date as follows:

- initial recognition at fair value if that fair value is *evidenced by a quoted price in an active market for an identical asset or liability* (i.e. a Level 1 input) or based on a *valuation technique that uses only data from observable markets* (i.e. a Level 2 input)
- recognize the difference between the fair value at initial recognition and the transaction price as a *gain or loss*.

Amortized cost -> example

Assume the following data:

Nominal value of bonds	10.000,00
Cash flow (transaction price)	9.500,00
Premium	500,00
Date of issuance	01/01/2024
Maturity	3 years
Semi-annual coupon	3%
(Variable coupon based on partial reimbursements)	
Market-based interest rate (semi-annual)	4,50%

We conduct the SPPI test and we classify it as an amortized cost. As it is possible to see, the repayment of the principle does not occur in a single time at the end of the contract,

but in multiple times every time the coupon is paid -> it has an important impact on the IRR. The cash flows are the following:

	Transaction price	Initial nominal amount	Coupon	Repayments	Total Cash Flows	Residual nominal amount
Jan 1, 2024	-9.500,0	10.000,0			-9.500,0	10.000,0
Jul 1, 2024			300,0		300,0	10.000,0
Jan 1, 2025			300,0		300,0	10.000,0
Jul 1, 2025			300,0	2.500,0	2.800,0	7.500,0
Jan 1, 2026			225,0	2.500,0	2.725,0	5.000,0
Jul 1, 2026			150,0	2.500,0	2.650,0	2.500,0
Jan 1, 2007			75,0	2.500,0	2.575,0	0,0
	-9.500,0		1.350,0	10.000,0	1.850,0	

Effective Interest Rate is 4,25%. The effective interest rate of the investment is in line with the prevailing market rate and is kept unchanged for the purposes of calculating the amortized cost of the loan.

Amortized cost:

	Beginning Amortized Cost	Interest Income @ 4.25%	Coupons (cash flows)	Repayments (cash flows)	Ending Amortized Costs
Jan 1, 2024	9.500,0				9.500,0
Jul 1, 2024	9.500,0	403,8	-300,0	0,0	9.603,8
Jan 1, 2025	9.603,8	408,2	-300,0	0,0	9.712,1
Jul 1, 2025	9.712,1	412,8	-300,0	-2.500,0	7.324,9
Jan 1, 2026	7.324,9	311,4	-225,0	-2.500,0	4.911,2
Jul 1, 2026	4.911,2	208,8	-150,0	-2.500,0	2.470,0
Jan 1, 2007	2.470,0	105,0	-75,0	-2.500,0	0,0
		1.850,0	**- 1.350,0**	**- 10.000,0**	

Accounting entries:

	HTC Securities	Interest Income	Bank Account
Jan 1, 2024	9.500,0		-9.500,0
Jul 1, 2024	403,8	-403,8	
	-300,0		300,0
Jan 1, 2025	408,2	-408,2	
	-300,0		300,0
Jul 1, 2025	412,8	-412,8	
	-2.800,0		2.800,0
Jan 1, 2026	311,4	-311,4	
	-2.725,0		2.725,0
Jul 1, 2026	208,8	-208,8	
	-2.650,0		2.650,0
Jan 1, 2007	105,0	-105,0	
	-2.575,0		2.575,0
	0,0	**-1.850,0**	**1.850,0**

Assume NOW that the market-based interest rate (semi-annual) is 5.50% and that it is assessed to be significantly different from the effective interest rate of 4.25%. We have to calculate again the NPV. The NPV of the expected cash flows at the rate of 5.50% amounts to 9,033.20€ -> it is very different from the transaction price -> the investor is going to recognise a gain equal to the difference between the transaction price and the

new NPV (which is going to be recorded as a loss from the lender perspective) + we have to do again the math and change the new income.

	Bank Account	Financial Debt	Gain on the issuance
Jan 1, 2024	9.500,0	-9.033,2	-466,8

	Beginning Amortised Cost	Interest Income @5.50%	Coupons (cash flows)	Repayments (cash flows)	Ending Amortised Costs
Jan 1, 2024	9.033,2				9.033,2
Jul 1, 2024	9.033,2	496,8	-300,0	0,0	9.230,0
Jan 1, 2025	9.230,0	507,7	-300,0	0,0	9.437,7
Jul 1, 2025	9.437,7	519,1	-300,0	-2.500,0	7.156,7
Jan 1, 2026	7.156,7	393,6	-225,0	-2.500,0	4.825,4
Jul 1, 2026	4.825,4	265,4	-150,0	-2.500,0	2.440,8
Jan 1, 2007	2.440,8	134,2	-75,0	-2.500,0	0,0
		2.316,8	**- 1.350,0**	**- 10.000,0**	

EQUITY INVESTMENTS AT FAIR VALUE THROUGH OCI: AN EXAMPLE

The ALFA company owns shares of the BETA company in its portfolio, classified in the "FVTOCI" category (and because we are talking about an equity investment any gain or loss accumulated during time cannot be recycled). These shares were purchased on 28.11.X at a cost, including transaction costs, of € 2,700,000. On 31.12.X (year-end date) the fair value of the shares in the portfolio amounted to €2,550,000 -> we have to recognise a change in fair value (a loss) in OCI. The accounting entry is therefore as follows:

Dr.	OCI - Change in FV of marketable securities	150.000
Cr.	Marketable securities at FVTOCI	150.000

On 30.6.X+1 the entire portfolio was sold for € 2,750,000, after receiving dividends of € 107,000. In order to understand if the company realised a gain or a loss, we have to compare this value with the latest fair value measure, which is €2,550,000 -> gain of €200,000 -> the *realised gain should be net of the accumulated OCI gains/losses* (so, in this case, because we have accumulated €150,000 of losses, in order to obtain the real gain we have to reduce the value of the actual gain). The accounting records relating to the collection of dividends and the sale of Emme shares are as follows:

Dr.	Bank Account	107.000
Cr.	Dividend Income	107.000
Dr.	Bank Account	2.750.000
Cr.	OCI - Change in FV of marketable securities	150.000
Cr.	Marketable securities at FVTOCI	2.550.000
Cr.	Gains on disposal (Net Equity)	50.000

NOTE: This split we have done in this exercise is necessary in case the company has realized a gain or a loss -> in case the company sells the equity instrument at the same price of the fair value, the accumulated changes in OCI need to be transferred to the Retained Earnings.

Expected Credit Loss (ECL)

An entity shall recognise a **loss allowance for expected credit losses** on:

- a financial asset that is measured at amortised cost
- a financial asset that is measured at FVTOCI
- a lease receivable
- a contract asset or a loan commitment and a financial guarantee contract to which the impairment requirements apply.

An entity shall *recognise in profit or loss*, as an impairment gain or loss, *the amount of expected credit losses* (or reversal) that is r*equired to adjust the loss allowance at the reporting date* to the amount that is required to be recognised in accordance with this Standard. In the case of impairment of assets at amortised cost, there is *no change in the effective interest rate that was determined at its initial recognition*. In the case of FVTOCI assets, impairment losses must be recognised:

- in *profit/loss for the year for debt securities*
- in *OCI for equity instruments* (no recycling)

Example

Assume the following data for the acquisition of corporate bonds:

- Transaction price: 1.000,00
- Transaction costs: 15,00
- Coupon rate: 2,0%
- Market interest rate: 4,0%
- Maturity: 5,00 years
- Full reimbursement at the maturity date
- Annual cash flows: +20, +20, +20, +20. +1.020
- Fair Value ai initial recognition: NPV of the future positive cash flows at 4% (to calculate the fair value we have to use the market interest rate) = 910,96
- Day-one loss (fair value – transaction price): 89,04 (+910,96 - 1.000)
- Value at initial recognition: Fair value + Transaction cost = 910,96 + 15 = 925,96

To calculate the effective interest rate, we must apply the IRR formula to the following cash flows: - 925,96; +20,00; +20,00; +20,00; +20,00; +1.020,00 -> We get a return rate of 3,6466%.

Amortised Cost:

Date	Beginning amortised cost	Interest Income @ 3.6466%	Cash Flows	Ending amortised cost	Valore credito nominale
01/01/x0			925,96	925,96	1.000,00
31/12/x0	925,96	33,77	-20,00	939,73	1.000,00
31/12/x1	939,73	34,27	-20,00	954,00	1.000,00
31/12/x2	954,00	34,79	-20,00	968,79	1.000,00
31/12/x3	968,79	35,33	-20,00	984,11	1.000,00
31/12/x4	984,11	35,89	-1.020,00	0,00	0,00
		174,04	-174,04		

Assume now that at the end of year x3 an *impairment must be recorded* based on the following assumptions for x4 (after 1 year):

- Expected reimbursement of capital: 600 (instead of 1,000) -> NPV of 578.89
- Expected collection of interests: 12 (instead of 20) -> NPV of 11,58

The total NPV of the asset at the end of x3 is therefore 590,47. Since the book value at the end of x3 is 984.11, the entity must record an impairment loss for the difference, i.e. 393.65. The interest income of x4 (at amortised cost) is 590,47 x 3.6466% = 21,53

Impairment loss

	Bank Account	Securities	Gain / Loss	Payable for transaction costs	Interest Income	Impairment Loss
01/01/x0	-1.000,00	925,96	89,04	-15,00		
	-15,00			15,00		
31/12/x0		33,77			-33,77	
	20,00	-20,00				
31/12/x1		34,27			-34,27	
	20,00	-20,00				
31/12/x2		34,79			-34,79	
	20,00	-20,00				
31/12/x3		35,33			-35,33	
	20,00	-20,00				
		-393,65				393,65
31/12/x4		21,53			-21,53	
	612,00	-612,00				
	-323,00	0,00	89,04	0,00	-159,68	393,65

Example of debt instrument measured at FVTOCI (IFRS 9 IE78–81)

An entity purchases a debt instrument with a fair value of €1,000 on 15 December 20XX and measures the debt instrument at FVTOCI. The instrument has an interest rate of 5% over the contractual term of 10 years, and has a 5% effective interest rate. At initial recognition, the entity determines that the asset is not purchased or originated credit impaired.

The debt securities were purchased at € 1,000 on 15/12/20XX.

	Debit	Credit
Financial asset—FVOCI	€1,000	
Cash		€1,000
(To recognise the debt instrument measured at its fair value)		

On 31/12/20XX there was a decrease in FV of € 50.
This decrease in fair value of € 50 includes a component of € 30 attributable to expected losses on receivables (impairment): the decrease of € 30 is recognized in the income statement while the remaining decrease of € 20 is allocated to OCI.

With the sale the reduction in FV allocated to OCI (20) is transferred to the income statement (recycling).

On 31 December 20XX (the reporting date), the fair value of the debt instrument has decreased to €950 because of changes in market interest rates. The entity determines that there has not been a significant increase in credit risk since initial recognition and that expected credit losses should be measured at an amount equal to 12-month expected credit losses, which amounts to €30. For simplicity, journal entries for the receipt of interest revenue are not provided.

	Debit	Credit
Impairment loss (profit or loss)	€30	
Other comprehensive income	€20	
Financial asset—FVOCI		€50
(To recognise 12-month expected credit losses and other fair value changes on the debt instrument)		

Disclosure would be provided about the accumulated impairment amount of €30.

On 1 January 20XX+1, the entity decides to sell the debt instrument for €950, which is its fair value at that date.

	Debit	Credit
Cash	€950	
Financial asset—FVTOCI		€950
Loss (profit or loss)	€20	
Other comprehensive income		€20
(To derecognise the FVTOCI asset and recycle amounts accumulated in other comprehensive income to profit or loss)		

IMPAIRMENT: MAIN PRINCIPLES

IFRS 9 uses a forward-looking **Expected Credit Loss (ECL) model** -> the amount of impairment and the way interest is calculated depend on *whether credit risk has increased since the asset was first recognized*. IFRS 9 establishes a *three-stage impairment model*, based on whether there has been a significant increase in the credit risk of a financial asset since its initial recognition. These three-stages then determine the amount of

impairment to be recognised as expected credit losses (ECL) at each reporting date as well as the amount of interest revenue to be recorded in future periods:

- *Stage 1*: Credit risk has *not* increased significantly since initial recognition -> Recognise 12-months ECL that reflects only the risk of default that can occur in the next 12 months and *recognise interest on a gross basis* (this usually is applied to new loans given to good borrowers)
- *Stage 2*: Credit risk has increased *significantly* since initial recognition -> Recognise lifetime ECL (which reflects the probability of default connected to that loan until the maturity) and *recognise interest on a gross basis*
- *Stage 3*: Financial asset is *credit impaired* ('non-performing loans') -> Recognise lifetime ECL and *present interest on a net basis* (i.e. on the gross carrying amount less credit allowance, because we don't want to calculate the interest on the part of the loan that we have already marked as defaulted).

Two methods to determine the impairment loss:

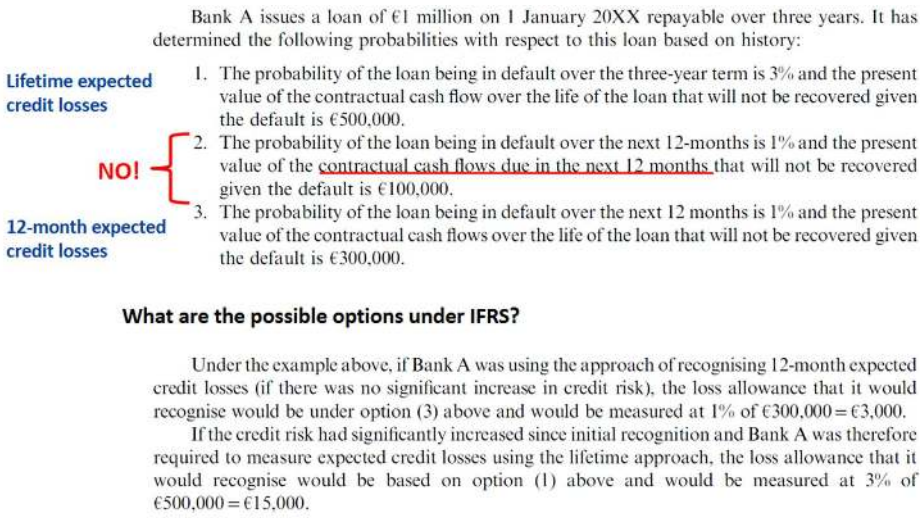
- *12-month expected credit losses* -> 12-month ECLs are calculated by multiplying:
  - the *probability of a default* occurring in the next 12 months
  - the *total (lifetime) ECLs that would result from that default*, regardless of when those losses occur.

  Therefore, 12-month expected credit losses represent a financial asset's lifetime expected credit losses that are expected to arise from default events that are possible within the 12 month period following origination of an asset, or from each reporting date for those assets in Stage 1.

12-month expected loss:
- ❑ 1-year probability of default (**PD**)
- ❑ Exposure at the time of default (**EAD**)
- ❑ **LGD** (loss given default) estimated over the remaining life of the contract

- *Lifetime expected credit losses* -> Lifetime expected credit losses are the present value of expected credit losses that arise if a *borrower defaults* on its obligation at *any point throughout the term* of a lender's financial asset. This requires an entity to consider all possible default events during the term of the financial asset in the analysis. Lifetime expected credit losses are calculated based on a weighted average of the expected credit losses, with the *weightings* being based on the *respective probabilities of default*.

Lifetime expected loss:
- ❑ Multi-period default probabilities (PD_t)
- ❑ Exposure at the time of default for each remaining contract year (EAD_t)
- ❑ **LGD** (loss given default) estimated over the remaining life of the contract



Bank A issues a loan of €1 million on 1 January 20XX repayable over three years. It has determined the following probabilities with respect to this loan based on history:

Lifetime expected credit losses

1. The probability of the loan being in default over the three-year term is 3% and the present value of the contractual cash flow over the life of the loan that will not be recovered given the default is €500,000.

NO!

2. The probability of the loan being in default over the next 12-months is 1% and the present value of the contractual cash flows due in the next 12 months that will not be recovered given the default is €100,000.

12-month expected credit losses

3. The probability of the loan being in default over the next 12 months is 1% and the present value of the contractual cash flows over the life of the loan that will not be recovered given the default is €300,000.

What are the possible options under IFRS?

Under the example above, if Bank A was using the approach of recognising 12-month expected credit losses (if there was no significant increase in credit risk), the loss allowance that it would recognise would be under option (3) above and would be measured at 1% of €300,000 = €3,000.

If the credit risk had significantly increased since initial recognition and Bank A was therefore required to measure expected credit losses using the lifetime approach, the loss allowance that it would recognise would be based on option (1) above and would be measured at 3% of €500,000 = €15,000.

An entity may use practical expedients when measuring expected credit losses if they are consistent with the main principles. An example of a practical expedient is *the calculation of the expected credit losses on trade receivables using a provision matrix*. The entity would use its *historical credit loss experience* for trade receivables to estimate the 12-month expected credit losses or the lifetime expected credit losses on the financial assets as relevant. A *provision matrix* might, for example, *specify fixed provision rates* depending on the number of days that a trade receivable is past due ('Accounts Receivable Aging'). Depending on the diversity of its customer base, the entity would use appropriate groupings if its historical credit loss *experience showed significantly different loss patterns* (which requires also some assumptions about the risk of not collecting the entire trade receivable) *for different customer segments* (ex. geographical region, product type, customer rating, collateral or trade credit insurance and type of customer such as wholesale or retail)

	Expected default rate	Gross carrying amount	Credit loss allowance (Default rate x Gross carrying amount)
Current	0.3%	CU15,000,000	CU45,000
1-30 days past due	1.6%	CU7,500,000	CU120,000
31-60 days past due	3.6%	CU4,000,000	CU144,000
61-90 days past due	6.6%	CU2,500,000	CU165,000
More than 90 days past due	10.6%	CU1,000,000	CU106,000
Totals		**CU30,000,000**	**CU580,000**

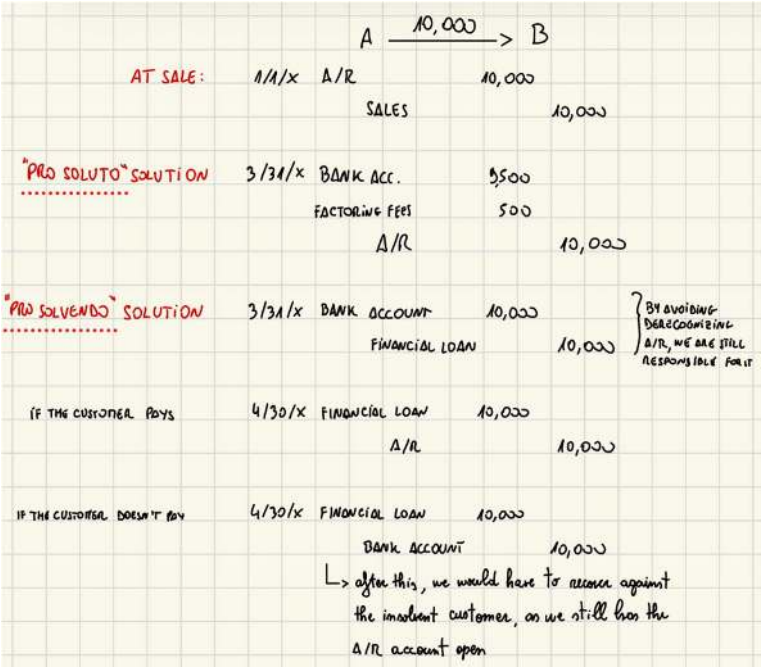
This approach, which is very simplistic, can only be applied to trade receivable that do not have a substantial financial component (like lease contracts).

Derecognition of a financial asset

An entity shall **derecognise a financial asset** when, and only when:

1. the *contractual rights* to the cash flows from the financial asset *expire*

2. it transfers the financial asset and the transfer qualifies for derecognition (ex. sale of accounts receivable to a bank or a factoring entity) -> an entity transfers a financial asset if, and only if, it either:
    a. *transfers the contractual rights to receive the cash* flows of the financial asset
    b. *retains the contractual rights to receive the cash flows* of the financial asset but assumes a *contractual obligation to pay the cash flows to one or more recipients*.



A **sale of A/R with recourse** (‘*pro solvendo’*) is an agreement in which the seller remains liable to the buyer if the final debtor does not pay -> the seller implicitly guarantees the creditworthiness of the debtor. The **non-recourse** (*’pro soluto’*) **sale of A/R**, on the other hand, transfers the risk of insolvency definitively to the buyer (this occurs with the so called factoring companies, which are financial companies that anticipate the liquidity connected to a trade receivable in exchange of that trade and by applying a small percentage of charging).

Debt restructuring

An exchange between an existing borrower and lender of debt instruments with *substantially different terms* shall be accounted for as an *extinguishment of the original financial liability* and the *recognition of a new financial liability*. Similarly, a substantial modification of the terms of an existing financial liability or a part of it (whether or not attributable to the financial difficulty of the debtor) shall be accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability.

The *terms are substantially different* if the discounted present value of the cash flows under the new terms, including any fees paid net of any fees received and discounted using the original effective interest rate, is at least 10 per cent different from the discounted present value of the remaining cash flows of the original financial liability.

Example 1

Original debt with residual capital of 90,000 and accrued and expired interest at 5% of 4,500, residual maturity of 5 years. Agreement to reduce principal debt to 72,500 and reduce interest to 4%. Present value of existing debt (at the rate of 5%) = 94,500. Present value of the restructured debt (always at the rate of 5%): 69,361. The restructured debt is 27% lower than the existing one. This would result in a profit of 25,138 (94,500 – 69,361). However, the new debt must be recorded at fair value (first recognition), assuming a

market rate of 12% (consistent with the debtor's new risk profile because the borrower became riskier): the new debt is initially recognised at the amount of 51,592

Dr.	Financial Debt (existing - capital)	90.000,00
Dr.	Financial Debt (existing - accrued interest)	4.500,00
Cr.	Financial Debt (post-restructuring)	51.592,30
Cr.	Gain from debt restructuring	42.907,70

The Effective Interest Rate of the restructured debt is 12%!

Example 2

Original debts with residual capital of 90,000 and accrued and expired interest 5% of 4,500, residual maturity of 5 years. Agreement to reduce the principal debt to 85,000 and reduce interest to 4.5%, with the immediate payment of the accrued interest of 4,500 and reducing the maturity from 5 to 3 years to limit the risk. Present value of existing debt (at the rate of 5%) = 94,500. Present value of the restructured debt (always at the rate of 5%) = 88,342 (of which 4'500 must be immediately paid). The restructured debt is 6.5% lower than the existing one -> it is not a replacement, but we continue the previous contract. This would result in a profit 6,157 (94,500 – 88,342).

Dr.	Financial Debt (existing - capital)	90.000,00
Dr.	Financial Debt (existing - accrued interest)	4.500,00
Cr.	Bank Account	4.500,00
Cr.	Financial Debt (post-restructuring)	83.842,62
Cr.	Gain from debt restructuring	6.157,38

The Effective Interest Rate of the restructured debt is 5%! (no change)

The gain is recorded when the restructuring of the debt occurs, not amortized.

Reclassification of financial instruments

The **situation before IFRS 9 and the October 2008 emergency** (GFC, Global Financial Crisis) -> The issue of possible and prohibited reclassifications (ex. in case of mandatory or irrevocable designation at initial recognition) by IFRS has always been a major concern. An example of this is what happened with the financial crisis. Before the events of the end of 2008, *many financial institutions owned speculative instruments* (short-term profit perspective) in the FVTPL category, for which any reclassification OUT was prohibited.

The illiquidity of financial markets, with the collapse of the price of many securities, would have produced *huge losses on a large part of the financial system*. As a result, an amendment to pre-existing standards, published in October 2008 and following the outbreak of the GFC (13 October 2008, Amendment to IAS 39 for reclassifications of financial assets) allowed an entity to reclassify non-derivative financial assets (other than those designated at fair value through profit or loss by the entity upon initial recognition) out of the FVTPL category in particular circumstances. The amendment also allowed an entity to transfer from the category at FVTOCI to the category at amortised cost, if the entity has the intention and ability to hold that financial asset for the foreseeable future.

- ➔ In practice, the rule mainly concerned those financial assets which, given their speculative perspective, had been compulsorily classified in the FVTPL

When, and only when, an entity changes its business model for managing financial assets it shall *reclassify all affected financial assets* (we can say here we have a grey area). The change in the business model is supposed to be *something infrequent* (rare event) and in any case it must be *demonstrable*. If an entity reclassifies financial assets, it shall apply the reclassification prospectively from the reclassification date. The entity shall not restate any previously recognised gains, losses (including impairment gains or losses) or interest.

ATTENTION:

1. For equity investments, the OCI Option (a FVTOCI) is an irrevocable designation and therefore reclassification to another category is not allowed.
2. An entity shall not reclassify any financial liability

General dynamics and Ford case

General Dynamics (GD) and Ford are two very mature companies that operate in two different sectors (and, therefore, have two different business model). While GD operates in the sector of aerospace and defence (IT systems, marine systems…), Ford produces cars. We have to keep in mind that in order to apply the new accounting principle for revenue recognition, companies have two methods:

- Full retrospective method -> it requires companies to fully restate their two prior years of financial statements as the new requirement was already in effect during those years (for example, in case a company had to present the financial statement for the year 2017, it had to its 2016 and 2015 financial statements in order to present them alongside the 2017) -> it is obviously a more expensive and complicated procedure (as, sometimes, not all the data are available), but it gives a more complete information.
- Modified retrospective method -> it does not require companies to restate their financial statements from the previous year, but instead to make a one-time adjustment to the retained earnings in the year in which the new revenue recognition requirement is adopted, as if the new revenue requirement had been used in the previous years. Even though it is clear that this method lose comparability, it was allowed because it was required to disclose the amount of revenues a company would have had in case they continued to use the previous criteria -> it is obviously a less expensive and complicated, but it gives a less complete information (as an external analyst, you can manage to get there but it takes more time).

Is the company an early adopter of IFRS 15? If yes, how do you know?

In the US the new rules have started to be applied from the 15 December 2017, which has been codified in the FASB Accounting Standard Codification Topic 606 (ASC 606). At the same time, early applications were allowed, like it's the case of both GD and Ford. Outside of the first page (which explicit that in both cases the retained earnings have been modified because of early adoption), there are explicit declarations from the companies which affirms that starting from the 1st January 2017 they have retrospectively adopted the new accounting standards, even though by using different adoption methods.

Which adoption method does the company follow?

Regarding GD, here we have the data regarding the Consolidated Statement of Earnings at 31/12/2017 by adopting the **full retrospective method** -> for the investor, it is better as they do not have to reconcile any number and make an easier comparison -> the same principle and work is applied to all the data provided in the different statements:

(Dollars in millions, except per-share amounts)	Year Ended December 31 2017	2016	2015
Revenue:			
Products	$ 19,016	$ 19,010	$ 20,477
Services	11,957	11,551	11,304
	30,973	30,561	31,781
Operating costs and expenses:			
Products	14,799	15,159	15,986
Services	9,987	9,746	9,563
General and administrative (G&A)	2,010	1,922	1,937
	26,796	26,827	27,486
Operating earnings	4,177	3,734	4,295
Interest, net	(103)	(91)	(83)
Other, net	3	13	7
Earnings from continuing operations before income tax	4,077	3,656	4,219
Provision for income tax, net	1,165	977	1,183
Earnings from continuing operations	2,912	2,679	3,036
iscontinued operations, net of tax benefit of $51 in 2016 and $7 in 2)15	—	(107)	—
Net earnings	$ 2,912	$ 2,572	$ 3,036

Regarding Ford, on the other hand, because they used the modified retrospective method, they just changed the values of 2017 but they did not restate the values for 2015 and 2016 -> we lose comparability in all the different Statements. Because of the additional disclosure it is required in order to apply this method, we have the following table available, where the first column regards the application of the new principle, the second column the revenues applying the old principle (which allow the comparison with 2015 and 2016) and the overall change:

	For the Year Ended December 31, 2017		
	As Reported	Balances Without Adoption of ASC 606	Effect of Change Higher/(Lower)
Income statement			
Revenues			
Automotive	$ 145,653	$ 145,163	$ 490
Financial Services	11,113	10,736	377
Costs and expenses			
Cost of sales	131,332	130,994	338
Interest expense on Automotive debt	1,133	1,061	72
Nonfinancial Services other income/(loss), net	3,060	3,148	(88)
Financial Services other income/(loss), net	207	584	(377)
Provision for/(Benefit from) income taxes	520	527	(7)
Net income	7,628	7,629	(1)

➔ Only for the following year (2018) there is going to be one single year for comparison (2017), as it is the only year where the new principle is already applied. For 2019, it will be back the 2 years comparison.

How does the company apply the 5-step model of revenue recognition?

Let's see how GD applied the 5-step model (which is available in the footnote of the disclosure, not in the financial statements themselves):

- Step 1: there aren't much information about them
- Step 2: It tells us that the majority of their contracts regards a single performance obligation (because the promise to transfer the individual goods and services is not separately identifiable from other promises in the contract -> not distinct). This is because within the army nowadays the contracts regard different products (both hardware and software, like a submarine needing a communication system), which

cannot be sold and used separately. They also have some contracts that regards multiple performance obligations.
- Step 3 and 4: for contract with multiple performance obligations, they allocated the contract transaction price using the best estimate of the standalone selling price of each distinct good and service in the contract. The primary method used to estimate the standalone selling price is the expected cost plus a margin approach. At the same time, in order to make the best estimate they consider the nature of contracts (which include claims, awards and incentives fees, most of which are connected to the delivery time) -> they consider various assumptions connected to the projects that span over several years (such as labour productivity and availability, the availability of materials, the performance of subcontractors, the availability and timing of funding from the customer). We have to understand if the current conditions allow the delivery on time and if there is any kind of incentive for managers to do it (like inflating the revenues because they have to complete at IPO).
- Step 5: performance obligations are satisfied over time as work progresses (which represented 71% percent of revenues generated in 2017) or at a point in time (which in 2017 represents the remaining 29%).
    - Regarding the revenues recognised at a point in time, they say they do it when the customer obtains control of the asset, which occurs at the delivery and acceptance of the fully outfitted aircraft
    - Regarding the revenues recognised over time, they use the input method, as they use as a criteria the cost incurred to date relative to total estimated costs at completion to measure progress towards satisfaction of the performance.

Regarding Ford, because the application of the new standard generates a positive effect, the overall information provided are way lower than the one provided by GD. Regarding the 5-step model, we can say:

- Step 2: Ford recognise the sell of vehicles together with the base warranties as a single performance obligation. In case the company would have sold an extension in the mechanical and maintenance coverages, they would have treated this as a separate performance obligation.
- Step 3: they recognise revenues according to the most likely amount they are going to receive. This value is influenced by changes in marketing incentives and returns they offer to customers and their customers, usually identifying the expected returns based on the analysis of the historical experience.
- Step 5: they say that for the majority of vehicles, parts and accessories they transfer control and recognise a sale when they ship the product for the manufacturing facility to the customer. In case the company sells extended service contracts, they are going to recognise the revenues over time by using the input method -> they recognise receivable in the first year when they receive the payment, which are going to be reduced every year when they recognise revenues in proportion to the costs expected to be incurred in satisfying the obligation under contract.

What is the cumulative effect of the IFRS 15 adoption on the company's retained earnings?

Regarding GD, the amount of accounting receivable in 2017 are 3,617m$, while the unbilled receivable (are called in this way because they are conditional, so they cannot be billed yet) are 5,240m$ -> the conditional receivables, which are riskier (there could be any factor that block the company to receive the receivable and it compromise its solvency), are higher than the unconditional receivables.

In order to notice the effect of IFRS 15 adoption, we have to look at the retained earnings. By looking at the adjustment that has been conducted for the year 2016, there has been an overall reduction of 684m$. The details regarding this change can be seen in the following table:

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Dollars in millions)	Common Stock Par	Common Stock Surplus	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
December 31, 2014 - as reported	$ 482	$ 2,548	$21,127	$ (9,396)	$ (2,932)	$ 11,829
Cumulative-effect adjustment of ASC Topic 606 on January 1, 2015	—	—	(372)	—	—	(372)
December 31, 2014 - as adjusted	$ 482	$ 2,548	$20,755	$ (9,396)	$ (2,932)	$ 11,457
Year ended December 31, 2015 - as reported	—	182	2,077	(2,996)	(354)	(1,091)
Effect of the adoption of ASC Topic 606	—	—	71	—	3	74
Effect of the adoption of ASU 2015-17	—	—	—	—	—	—
December 31, 2015 - as adjusted	$ 482	$ 2,730	$22,903	$(12,392)	$ (3,283)	$ 10,440
Year ended December 31, 2016 - as reported	—	89	2,023	(1,764)	(110)	238
Effect of the adoption of ASC Topic 606	—	—	(383)	—	6	(377)
Effect of the adoption of ASU 2015-17	—	—	—	—	—	—
		$ 2,819	$24,543	$(14,156)	(3,387)	

- The reduction of 372m$ regards all the adjustments done in the years before 2014 included
- The increase of 71m$ and the reduction of 383m$ are, respectively, the adjustments occurred during the year 2015 and 2016

Regarding Ford, there is a total positive effect of the application of the new principle of +36m$ by considering the adjustments applied up to 2016, as it is possible to notice from the third column of the following table:

	Balance at December 31, 2016	Adjustments Due to ASU 2016-09	Adjustments Due to ASU 2014-09	Balance at January 1, 2017
Balance sheet				
Assets				
Trade and other receivables	$ 11,102	$ —	$ (17)	$ 11,085
Inventories	8,898	—	(9)	8,889
Other assets, current	3,368	—	307	3,675
Net investment in operating leases	28,829	—	(1,078)	27,751
Deferred income taxes	9,705	536	(13)	10,228
Liabilities				
Payables	21,296	—	262	21,558
Other liabilities and deferred revenue, current	19,316	—	(1,429)	17,887
Automotive debt payable within one year	2,685	—	326	3,011
Other liabilities and deferred revenue, non-current	24,395	—	(5)	24,390
Equity				
Capital in excess of par value of stock	21,630	6	—	21,636
Retained earnings	15,634	530	36	16,200

In reality, if we see the cumulative changes in retained earnings that have occurred up 2017 because of the application of IFRS 15, the overall change is +35m$ -> the change that regards just the year 2017 is -1m$, which is going to affect the Net Income.

	December 31, 2017		
	As Reported	Balances Without Adoption of ASC 606	Effect of Change Higher/(Lower)
Balance sheet			
Assets			
Trade and other receivables	$ 10,599	$ 10,642	$ (43)
Other assets, current	3,889	3,538	351
Net investment in operating leases	28,235	29,021	(786)
Deferred income taxes	10,973	10,979	(6)
Liabilities			
Payables	23,282	22,999	283
Other liabilities and deferred revenue, current	19,697	20,879	(1,182)
Automotive debt payable within one year	3,356	2,971	385
Other liabilities and deferred revenue, non-current	24,711	24,716	(5)
Deferred income taxes	815	815	—
Equity			
Retained earnings	21,218	21,183	35

What are the main drivers of this effect?

We have noticed a negative effect on revenues of GD because of the application of the new language, which implies a delay of revenue recognition. As it is possible to notice, if before they were allowed to recognise revenues in 2 contractual milestones (when the aircraft was completed and accepted by the customer and when the customer accepted the final delivery), after the adoption of ASC Topic 606 they can recognise revenues only in one single moment, which is when the control is transferred to the customer (generally upon delivery and acceptance of the completed aircraft) -> this impacted the manufacture of business-jet aircraft, which represented almost 30% of revenues of the company. They decided to apply the full recognition method also because the application of the new principle has caused a significant reduction in revenues, so they have all the interests to give all the information needed to calm investors.

In the case of Ford, the increase in revenues is cause by an acceleration in revenue recognition (as even though the majority of revenues are generated by contracts that have the one in time recognition, there is a portion of contracts that are allowed to anticipate revenues) and it concerns a small portion of the business.

Cathay Pacific

Cathay Pacific is an Honk Kong company founded in 1946 operating in the airline sector. It has grown during the 1960s (by 1973 they were carrying more than 1mln passenger per year) and by 2020 they were the largest airline company in the Hong Kong Stock Exchange for market capitalisation. They had some problem during their lifetime, like in the 2016 when they had an important loss of HKD274mn because of the intense competition coming from close countries such as China and Japan. As a consequence, they implemented a restructuring plan proposed by McKinsey with the purpose of achieving cost savings and, on the other hand, led to a job cut of almost 600 employees.

Airlines is one of the sectors most significantly affected by the change in regulation. We can see from the PwC report that this has caused a median increase in debt of 47% and a median increase in EBITDA of 33%. Most of the time, airplanes (which is the most important asset for an airline company) were lease and left off balances -> a big distortion of reality. Higher values are possible to see in the retail sector (as almost all retailers take the place where they operate with lease operations), but impacts can be seen in professional services (where the increase in debt has a similar cause of the retailers), health care and wholesale.

In addition, because Honk Kong has been one of the first countries to adopt word by word the IFRS (and that's why the name of the principles is HKFRS), it is one of the countries that before adopted the change in IAS 17 -> Cathey represent a more representative case study

Referring to Table 1 of the case, analyse the effects on the financial statements of Cathay Pacific as of 31 December 2019, after the change from the prior HKAS 17 to the new adoption of HKFRS 16 Leases.

- Balance Sheet -> There has been an increase in PPE of roughly 20bn and on the other side of the BS an increase in liabilities (of which roughly 4bn of current portion of lease liabilities and 15.8bn of non-current portion of lease liability).
- Income Statement -> on one hand operating leases rental have decreased for 4,507mn (as one third of the aircraft where kept out of balance, for which the company was paying a rental expense), and on the other hand there is an increase in PPE depreciation for 3,849mn (because of the increase in assets that must be depreciated) and financial expenses for 744mn (for the interest in the lease payments) -> the total effect is an increase in expenses of 86m (even though we have said that in the future the overall effect is null, in the first period we have this limited effect caused by the higher level of interests because they are calculated over an higher level of liabilities).
- CF Statement -> we have an increase (caused by a reduction of operating expenses) for 4,445mn and there is a reduction cause by higher interests for 744mn and higher payments of liabilities for 3,701mn -> no overall change in the CF.

Referring to Exhibit 1 of the case, state and interpret the changes in the financial metrics of Cathay Pacific as of 31 December 2019, after the change from the prior HKAS 17 to the new adoption of HKFRS 16 Leases.

It is possible to notice the impact of the change from HKAS 17 to HKFRS16 by considering few financial ratios:

- Gearing (total liabilities/total equity) has increased by of 0.35bn (36.5%) because of the higher level of liability
- EBITDA has increased of 4.6bn (31.1%) because of the lower level of operating expenses
- EPS has reduced of 0.7c (-1.6%) because the effect on the IS (the 86mn effect we have explored before) has decreased the NI and therefore the level of EPS.

Discuss why HKFRS 16 cannot reflect the commercial reality of how companies manage residual value risk, according to Martin Murray, CFO of Cathay Pacific.

Residual Value Risk -> this is the risk that the residual value of the asset we have in our Balance Sheet will be volatile and be lower than our expectations. The CFO of Cathay Pacific affirmed that this new principle does not reflect the commercial reality of how companies manage this risk. The problem is that with previous rules 33% of planes were not in the BS, so what happens to the value of these planes at the end of their residual life was not a problem of the Cathey, because they did not belong to the BS. After the asset has started to be part of company's responsibility, they have to consider all the risk, such as the impairment test. Companies have to conduct an impairment test whenever there are signals, and the signals that can be seen in the case of this company:

- External factors -> changes in regulation (like about take-off weight), environmental regulation changes, wars/disease outbreaks that reduce the demand of flight and therefore the use of the plane, oil prices (this problem can be passed on by increasing prices of the tickets, but this will decrease of the demand), passengers safety perception, passenger preference for the flight experience
- Internal factors -> "wear and tear" (if depreciation is incredibly high, this should decrease a lot the value of the asset)

➔ Previously all these factors where a problem of the lessors, but now they are a problem of the company. Most od these factors are out of control of management.

What course of action may a lessee like Cathay Pacific take in order to tackle the challenges from the new standard (e.g., to minimize the negative effects on their financials or operations)?

What can the manager do for protecting the company from the risk of damage?

- Hedging for protecting ourselves against the fluctuations of the oil prices
- Maintenance against the "wear and tear" (costly)
- Insurance against some of these risks -> but the higher the risk the higher the premium

➔ Whatever the strategy is going to be, this will cause costs

What are the real effects the change will have on ALL companies? Companies usually try to avoid capitalise assets, as it brings more risk -> as we said before there are some cases where the asset should not be capitalised (even though in the case of the airplane these conditions cannot be applied). Within these reasons we have to include the situation in which the lease payments are connected to a variable interest that is not related to a specific index -> Cathay could have linked the lease payments to flight hours, as the more you flight the more revenues you have. The problem in this case is going to be the volatility in one of the most important component of the liability -> volatility is a component that no one likes because it increases risk, cost of capital and the forecast of the future.

Does the leasing activity have any effect on the other aspects of the company? We have to consider that every company is a separate entity, which continuously has to contract with third parties contracting:

- Shareholders -> for giving their money, shareholders expects dividends and an increase in share price in return -> because the policy change can affect the profitability of the company, this can compromise the capability of the company to pay dividends (if the company operates in one of the countries where distributing dividends is mandatory, this will lead to a change in the dividend policy)
- Banks -> debt covenants (how much liability the company has, how much is the interest coverage, how much the company borrow, is there any collateral, how much is the cost) -> if the profitability if affected, we'll have an effect on debt covenants (like borrowing less money, at higher prices, with higher collaterals, for shorter time…)
- Suppliers -> many times the credit terms agreed are linked with the performance of the company (such as the leverage or the liquidity) -> because some key metrics will be affected, the credit terms need to be renegotiated
- Employees -> in case they receive bonuses, these are linked to accounting metrics (such as the EPS compared with the adjusted EPS of competitors, or ROI growth rate…)

➔ Usually these effects are meant to happen in the year of change and disappear in long term but we can have unintended effects

EBAY STOCK OPTION PAYMENTS

Why does eBay compensate employees with options rather than other forms of compensation such as cash or stock grants? Are there any benefits to using stock options over these other alternatives?

	Stock Option	Cash	Ordinary shares
Align managers interests with those of the shareholders	✓	✓	X
Maintaining cash (key asset)	✓	X	✓
Attract talented people	✓	✓	✓
Retaining talented people	✓	✓	✓
Avoiding expensing the employee costs (in past stock options not in IS)	✓	X	X

Why are so many disclosures required for employee compensation, particularly at the executive level?

The total compensation for manager consisted in:

- Base Salary: fixed component

- Bonuses: short term incentives, variable component (connected with quarterly results)
- Stock Options: long term incentives, variable component

5 Main managers benefited from the Stock Option plan:

Name and 2000 Principal Positions	Fiscal Year	Salary	Bonus (1)	Number of Securities Underlying Options (2)	Potential Realizable Value at Assumed Annual Rates of Stock Price Appreciation for Option Term (3) 5%	10%
Margaret C. Whitman	2000	$210,000	$87,914	500,000	18,915,971	41,936,785
President and Chief	1999	195,000	97,500	--	--	--
Executive Officer	1998	145,833	100,000	14,400,000	70,859,972	113,166,618
Maynard G. Webb, Jr.	2000	450,000	503,151	100,000	3,783,194	9,587,357
President, eBay	1999	184,327(4)	108,000	1,000,000	26,579,700	67,082,100
Technologies	1998	--	--	--	--	--
Jeffrey D. Jordan	2000	290,000	136,254	300,000	12,039,402	30,510,207
Senior Vice President and	1999	64,481(4)	16,323	300,000	n.a.	n.a.
General Manager, US Business	1998	--	--	--	--	--
Matthew J. Bannick	2000	207,250	86,139	140,000	5,296,472	13,422,299
Senior Vice President,	1999	131,106(4)	61,381	260,000	n.a.	n.a.
International	1998	--	--	--	--	--
Michael R. Jacobson	2000	190,000	65,139	200,000	7,566,389	19,174,714
Vice President, Legal	1999	160,000	56,000	--	--	--
Affairs, General Counsel and Secretary	1998	52,265(4)	60,000	1,500,012	n.a.	n.a.

➔ Concern about the fact that it seems to be misleading information about profitability because *Stock Options* (which have a high impact) *were not expensed*.

Detailed disclosures about executive compensation are required to ensure *transparency*, *investor protection*, and *comparability among firms*. As shown in the case, eBay's financial statements were significantly affected by *how stock options were accounted for* -> under APB 25, eBay recorded no expense because the options were granted "at-the-money," whereas using the fair value method under SFAS 123 would have turned reported profits into substantial losses (from a $48 million profit to a $91 million loss in 2000). This dramatic difference highlights the potential for misleading profitability figures if investors are *unaware of the underlying assumptions and unrecognized costs*. Regulators therefore *require extensive footnote* and *proxy disclosures*, including grant values, exercise prices, vesting terms, and pro forma earnings effects, to allow investors to assess how compensation incentives may influence management's behaviour and company performance. Moreover, since executive pay often ties directly to stock-based incentives, *disclosure requirements* (such as those mandated by the SEC's proxy filings) help *mitigate information asymmetry* and *promote accountability* by revealing how management is rewarded relative to shareholder returns.

Without stock option recognition, eBay had:

	Year Ended December 31		
	1999	2000	2001
Net income (loss):			
As reported	$9,567	$48,294	$90,448
Pro forma	(41,357)	(90,677)	(14,478)
Net income (loss) per share—basic:			
As reported	0.04	0.19	0.34
Pro forma	(0.19)	(0.36)	(0.05)
Net income (loss) per share—diluted:			
As reported	0.04	0.17	0.32
Pro forma	(0.19)	(0.36)	(0.05)

Regarding the value of net income, we can notice how the value reported is always higher than the pro forma one (such as that in year 1999 and 2000 we change from a profit to a loss). This is because:

- **As reported** -> based on the accounting rules in effect (specifically APB Opinion No. 25), which required companies to record compensation expense only if the option's exercise price was lower than the market price on the grant date -> most stock options granted "*at the money*" (where the exercise price = market price) resulted in no compensation expense being recorded = "as reported" income is higher, because little or no expense for stock options was recognized.
- **Pro forma** -> figures, on the other hand, show what income would have been if eBay had used FASB Statement No. 123, which required valuing stock options using a *fair value method* -> this method assigns a *theoretical cost to employee stock options* and deducts it as an expense -> "pro forma" net income is lower because it includes the estimated cost of employee stock options.

In addition, it is possible to notice that the EPS-basic and EPS-diluted in 1999 don't change. This is because in 1999, eBay reported a net loss on a pro forma basis ($(41,357) thousand). When a company reports a net loss, any potential share (from stock options, convertible debt, etc.) that could increase the number of shares is considered *anti-dilutive*, meaning if those potential shares were included, they would make the loss per share *smaller* (less negative).

But you can argue: "but they tell us in the disclosures". *Composition of the package* → If all the option were exercised there were +108 million shares in the market -> exercise the option would mean a dilution effect on share capital of the current shareholders. Outstanding shares: 269 million shares. If all the stock option were exercised there is an increase of +108 million (around +40%).

Damage for actual investors:

- *cash* -> reduced dividend per share
- *ownership* -> reduction of the control of current shareholder to reduction of voting right as % of tot shares

Shareholder are interested in *TSW = dividends + share price appreciation* → usually immediately after the decision of paying dividends there *is slight increase in share price* but after payment the *value of the firm reduces* (because there is a reduction of the assets of the company). But managers want the share to go up, and so stock option provide weaker incentives (ex-ante) for dividends payments, which may be not in the interests of share.

Higher reward = higher risk → but to grow you have to invest. So, managers are incentivized to invest in as risky project as possible. If it works out *big increase in income → big increase in shares → big remuneration through stock option*. But if it fails? Managers do not lose anything, and the risk is born by the shareholders.

Stock option out of money (*share price < exercise price*) → no more incentives for managers to work hard.

Do you agree with eBay's current accounting treatment for employee stock options? Is footnote disclosure a substitute for financial statement recognition?

It's not accurate to say that *back then* the rules do not require to expense stock options. The intention was not to come up to 0 expenses.

Accounting Principle Based Option n. 25 (1972): required companies to expense stock options using the *intrinsic value method* → there is a value equal to: *Shares prices at grant date – exercise price at grant date* (in the case of eBay, it was equal to 0.75 cents per share). Many investors, including Warren Buffet, rose concerns about intrinsic value method and at the end the FASB started thinking of applying a fair value method. But on the other hand, there was a big battle, between regulators, investors, companies, politicians that ended up with compromises.

SFAS n.123: recommended companies to expense stock options using the *FV method + mandated the disclose of the effect on profitability of the FV method*. In other words, what happened in 1995 FASB decided (because of lobbying and political pressures) to adding just the disclosure requirements.

But after 10 years (after investors concerned continued) FASB published the revised SFAS n.123 (IFRS 2) to require the expense stock options using the FV method.

Sum-up of expensing stock options:

- *Favor*: There is a market for stock option so we can observe traded stock option and obtain reliable data on price (but stock option for managers has usually different time horizons so it's not exactly the same thing) → observable price but not for identical assets. The statements are full of estimates and it's decently better to put an approximately correct number respect to a precisely wrong one. Yeah, but shareholder give up stock, so there is a *cost*. There is misleading information of profitability (quality of information issue, comparability issue…) and matching principle violated
- *Against*: Noisy, subjective, discretionary → good quality information. Do stock options meet the definition of expense? *Strictly not*, it's a capital transaction between company and managers. Yeah, but we disclose it, you know we have stock option for managers, what's the problem? process it.

In eBay's footnote number 14 (Exhibit 8) the "weighted average grant date of fair value of options granted during period" is listed as $103.79 per share for 2000. However, the "weighted average exercise price" of

shares granted over 2000 is only $62.69 per share. Interpret these numbers. Do they make economic sense?

Well let's look to eBay case:

	Year Ended December 31					
	1999		2000		2001	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Outstanding at beginning of period	18,493	$1.84	26,236	$29.73	26,249	$38.99
Granted	12,210	64.59	9,037	62.69	19,621	46.87
Exercised	(3,551)	1.95	(4,499)	6.23	(6,813)	17.26
Cancelled	(916)	38.96	(4,525)	65.41	(3,955)	51.20
Outstanding at end of period	26,236	29.73	26,249	38.99	35,102	46.24
Options exercisable at end of period	3,654	5.03	7,006	27.73	10,465	41.67
Weighted average grant date fair value of options granted during period		$40.45		$41.40		$27.80

The *apparent discrepancy* between eBay's weighted average grant-date fair value ($103.79) and weighted average exercise price ($62.69) initially seems illogical, since an option's fair value should not exceed the price of the underlying stock itself. As noted in the *eBay, Inc.: Stock Option Plans (B)* case, this disclosure in the 2000 annual report was later identified as a *typographical error* rather than an economic anomaly. eBay's 2001 report corrected the fair value to $41.40 per share, which aligns with the company's valuation model and the principles of the Black-Scholes method used for estimating option value. The *Black-Scholes model* incorporates factors such as *expected volatility* (115%), *time to expiration* (3 years), *risk-free rate* (4.9%), and *zero dividend yield*, all disclosed in the 2000 footnotes. When these assumptions are applied, an option value around $40–$45 per share is economically reasonable given eBay's high volatility and growth expectations at the time. Thus, while the initial disclosure suggested an implausible valuation, the corrected figures and modelling assumptions demonstrate that the fair value of the stock options, representing the expected future benefit from holding the right to buy eBay shares at $62.69, was *consistent with market-based expectations*.

FAIR VALUE ACCOUNTING AT BERKSHIRE HATHAWAY INC.

The main issue that is covered in this case is that a new accounting rule (ASU 2016-01) whereby unrealized gains/losses on minority equity securities (<20%) must enter through Net Income. This rule eliminates the "available-for-sale" classification that previously allowed such unrealized results to be reported in Other Comprehensive Income, impacting only Equity. The goal of the rule is to reflect the fair value of all investments made by a company.

Impact on the company: US$1.138 Bn Net Loss in Q1 2018, driven by a US$7.8 Bn unrealized market loss on investments. Potential distortion of investor perception on the company portfolio's volatility, mainly of those who are not financially literate. Need to employ questionable methods to valuate off-market investments and at a frequency that would make the job inefficient.

a) Reporting Performance Under the New Rule:

Does the new accounting treatment more accurately reflect Berkshire Hathaway's financial performance compared to the prior standard?

It highly depends by what we mean by performance.

For total economic performance (including investments): arguably yes -> Berkshire's minority equity portfolio is huge (over $160B of equity securities at end-2017), and changes in its fair value materially affect shareholders' wealth. Under the old standard, most of these were "available-for-sale": unrealized gains/losses bypassed net income and went into OCI. The balance sheet already showed them at fair value, but the income statement ignored interim price changes until sale. Under ASU 2016-01, all these minority stakes are effectively treated as trading securities: all fair-value changes (realized and unrealized) now hit net income. From the perspective of overall return to shareholders, this is more complete: the $7.8B Q1 2018 unrealized loss on Berkshire's equity portfolio really did reduce shareholders' economic wealth that quarter, and the new rule forces it into reported earnings. That's exactly FASB's stated objective: give "more relevant, transparent, and comparable information" by measuring equity investments at fair value through net income.

For Berkshire's core operating performance: probably no -> Q1 2018: Berkshire reported a $1.138B net loss, driven by that $7.807B unrealized loss now routed through net income. Without it, "underlying" net income would have been about $6.7B profit. The operating businesses (insurance, railroad, utilities, manufacturing, etc.) actually performed solidly -> investors even bid the stock up after the release, apparently focusing on operating results rather than the GAAP loss. Given Berkshire's strategy (long-term, low-turnover holdings, average holding period >5 years), large quarter-to-quarter swings in market prices can swamp the signal from operations. That's why Buffett says the new rule will make the GAAP bottom line "wild and capricious" and "analytically useless."

So:

- If "performance" = total change in shareholder wealth (operations + investment portfolio), the new rule does better capture it in one number.
- If "performance" = how well Berkshire's managers ran the operating businesses this period, the new rule worsens the signal in net income, because market volatility unrelated to operations dominates.

What are the implications for performance comparability across firms?

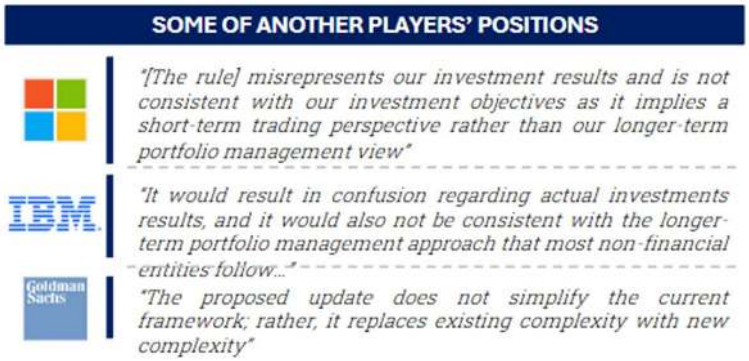
IFRS now still uses the OCI method for equity investments, which has a dramatic effect on the comparability between companies operating in the two sides of the ocean. At the same time, we can say that the method applied by the US better reflects the substance of these transactions.

Improved comparability in how equity investments are treated -> Before ASU 2016-01, firms had two categories for passive stakes: trading vs available-for-sale, with different income-statement treatments -> this gave managers discretion and reduced comparability. The new rule eliminates that split: all <20% equity stakes go through the same fair-value-through-net-income model (apart from the measurement-alternative option for some private equities). Standardization "allows comparability, benefiting companies without minority investments" – at least along the accounting-policy dimension.

➔ So, across US GAAP firms with similar portfolios, there's less room for classification games, and users can more easily compare the income impact of equity investments.

But economic comparability of net income actually gets trickier:

- Different business models, different "noise" levels
    - A firm like Berkshire, with a huge listed-equity portfolio, will show very volatile net income.



    - A pure-play industrial with minimal equity investments will have much smoother earnings.
    - Comparing EPS volatility across them mixes "operating risk" and "portfolio mark-to-market risk" in a way that can mislead less sophisticated users. This is exactly what Berkshire, Google, IBM, and Microsoft complained about in their comment letters.
- Level-3 and measurement-alternative subjectivity
    - For private or thinly traded investments (e.g., Alphabet's stake in Uber), firms can use the measurement alternative and Level-3 inputs, updating values when there are observable events (funding rounds, settlements, etc.).
    - Alphabet's $2.6B Q1 2018 gain tied to Uber's revaluation is partly based on such inputs.
    - That makes cross-firm comparisons sensitive to managers' valuation judgments and the timing of "observable" events.
- Cross-standards comparability (US GAAP vs IFRS) worsens
    - IFRS 9 still allows certain equity investments not held for trading to be designated FV-OCI (unrealized gains/losses permanently in OCI).
    - So a US GAAP firm and an IFRS firm with identical portfolios can report very different net-income volatility.

b) Application Example: Apple Stock Investment

During Q1 2018, Berkshire Hathaway purchased 75 million shares of Apple at $170/share. Assume:

- **purchase date: January 2**
- **End of Q1 price (March 29): $165**
- **Sale date (June 29): Sold at $185**

Using this example, explain the accounting treatment under both the old and new GAAP rules:

- **At acquisition**
- **At the end of Q1**
- **At the end of Q2 (after the sale)**

How does each rule affect the income statement and balance sheet? Please elaborate.

TREATMENT – GENERAL OVERVIEW

EVENT	OLD GAAP (PRE – 2018)	NEW GAAP (ASU2016-01)	DIFFERENCES
Acquisition of Apple shares 2nd January 2018	Recorded at cost ($170/share) as **Available-for-sale Equity security**	Same treatment, even if it becomes a **Trading Equity Security**	✗
End of Q1 2018	Unrealized loss in **OCI – no net income** impact	Loss of $ 375 Millions in net income	✓
Sale of Apple share – end of Q2 2018	Realized gain of $1 125 B in net income – Reclassification from OCI to Net Income	$ 1.5 Billions gain in net income – resulting in a final gain of $ 1.125 Billions	✓

WARREN BUFFETT'S STANDING

2017 Letter to Shareholders

"I must first tell you about a new accounting rule... that in future quarterly and annual reports will severely distort Berkshire's net income figures and very often mislead commentators and investors.
[Explanation of the new rule]
That requirement will produce some truly wild and capricious swings in our GAAP bottom-line. For analytical purposes, Berkshire's 'bottom-line' will be useless. I expect considerable confusion among shareholders for whom accounting is a foreign language."

Basically, with the new rules every change was considered to be independent and every change in FV was accounted directly in the NI -> from an economic perspective, it led to no changes, but the goal was to remove from the managers the possibility to wait until the right moment, accumulate the gain in the OCI and then transfer everything to the NI in a single time. On the other hand, as Warren Buffet said while commenting the introduction of this new principle, he thought that this change is going to increase the volatility in the system (instead of one single change, which is the one that occurs when the company decides to sell the asset, the company will face several changes during the same accounting year, which can have a significant impact and can change the perspective of investors from one quarter to the next one).

IMPACT ON INCOME STATEMENT

NOTE: Under both the old and new GAAP rules, the impact on the income statement is referred to **Net Income line.**

IMPACT ON BALANCE SHEET

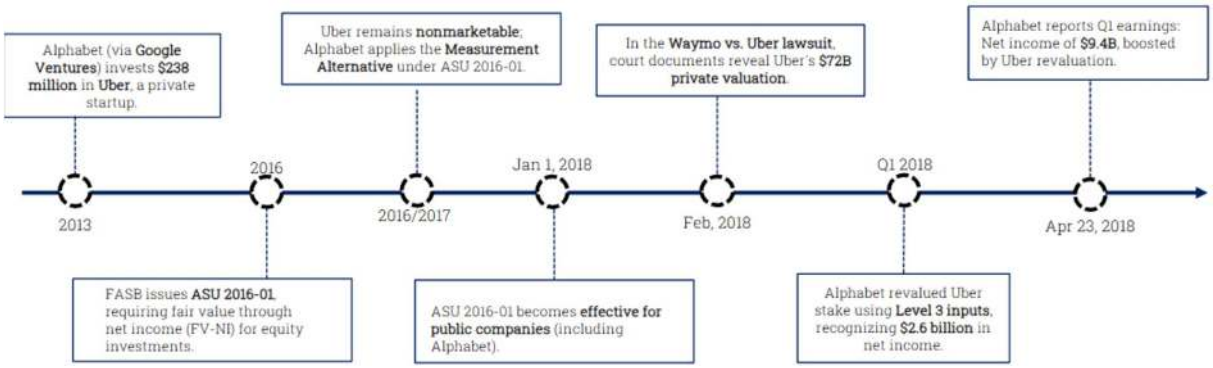
NOTE: Under both the old and new GAAP rules, the investment asset is recorded at **fair value on the balance sheet.**

COMPONENT	Old GAAP (Pre-ASU2016-01)	New GAAP (ASU2016-01)
Unrealized Gains / Losses	Reported in OCI	Reported in Net Income
Equity Impact	Increases / decreases Accumulated OCI	Increases / decreases Retained Earnings
Net Income Impact	Only realized gains / losses affect net income	Both unrealized and realized affect net income

c) Broader Implications: Alphabet's Investment in Uber

Using Alphabet's investment in Uber as an example, assess the advantages and disadvantages of the new accounting rule for passive equity investments.

Here's a timeline of the impact of the new regulation on the valuation of Uber:



NOTE: The Measurement Alternative indicated in this case refers to using the Historical cost -> Alphabet valued its investment in Uber according to the prices paid for the acquisition ($238mln) and then adjust the value whenever there were apparent changes in related transaction. In addition, the impact that the new valuation of Uber had on Alphabet ($2.6bln) was because of the percentage owned by the parent company.

Advantages:

- Greater Transparency: Timely recognition of valuation shifts (e.g., Uber's $72B revaluation in Q1 2018).
- Earnings Relevance: Aligns net income with real-time market sentiment.
- Standardization: Eliminates "available-for-sale," unifying treatment across firms.
- Fit for VC/Growth Models: Reflects volatility inherent in early-stage portfolios.
- Valuation Discipline: Enforces fair value hierarchy (Levels 1–3), improving disclosure clarity

Disadvantages:

- Earnings Volatility: Unrealized changes hit net income, even without liquidity events.
- Strategic Confusion: Long-term holdings may appear as short-term trades.
- Subjective Valuation: Level 3 inputs rely on sparse or private data.
- Admin Burden: Continuous reassessment and compliance costs.
- Tax Mismatch: Gains taxed only on realization -> requires deferred tax tracking

d) Can you relate this case to the IFRS framework?

How does the continued existence of the FVOCI (Available-for-Sale–type) option under IFRS affect comparability between companies reporting under IFRS and those reporting under US GAAP?

IFRS still permits an AFS-like model while US GAAP does not -> Under IFRS 9, firms may irrevocably designate certain equity investments at Fair Value through Other Comprehensive Income (FVOCI) once, at initial recognition. These investments:

- Are measured at fair value on the balance sheet
- But unrealized gains and losses bypass net income and go into OCI
- Are never recycled from OCI to net income, even at sale

By contrast, US GAAP under ASU 2016-01 eliminates the AFS category for equity securities and requires all unrealized gains/losses on equity investments to be recognized directly in net income -> all equity securities “must be marked to market through net income”

➔ This difference is at the core of the comparability problem.

It creates major cross-standard differences in reported net income volatility -> Because IFRS still permits equity fair-value changes to avoid the income statement, an IFRS firm with a large equity portfolio will show much smoother earnings than a US GAAP firm with the same portfolio. The Berkshire case warns that running unrealized equity gains/losses through GAAP earnings creates “wild and capricious swings in net income” each quarter. Under IFRS FVOCI, those swings would not appear in profit or loss at all. Thus, same economics but different earnings profiles:

- US GAAP reporter: volatility flows through net income
- IFRS reporter (FVOCI applied): volatility stays in OCI, earnings remain stable

This reduces the usefulness of cross-company comparisons of Net income, EPS, ROE, Profit margins and Compensation metrics tied to earnings because these earnings numbers reflect accounting policy choice, not economic differences.

Managers under IFRS retain classification discretion -> The US GAAP update removed the classification choice, as all passive equity stakes must use fair-value-through-net-income. The case notes this was meant to improve comparability -> The new GAAP “allows comparability [by] benefiting companies without minority investments.”

IFRS, however, preserves discretion -> managers may choose FVOCI for long-term strategic holdings. This choice enables firms to:

- Manage earnings volatility, keeping unrealized gains/losses out of profit
- Influence reported performance, especially when equity holdings are large or volatile

Two IFRS firms with identical portfolios might still look different depending on FVOCI designations. This compounds comparability issues between IFRS and US GAAP reporters.

Cross-border capital market comparisons become distorted -> Investors comparing US and non-US firms face different treatment of identical economic outcomes:

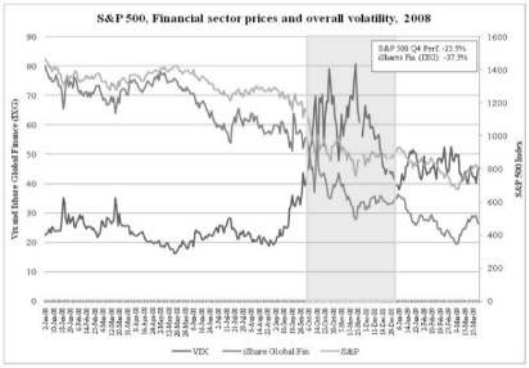
- A US GAAP firm’s unrealized loss reduces net income.
- An IFRS firm’s unrealized loss reduces OCI but leaves net income unchanged.

As the Berkshire case notes, the effect of unrealized gains/losses can be enormous (e.g., Berkshire’s $7.8B unrealized loss drove GAAP net income to a $1.1B loss for Q1 2018). Under IFRS FVOCI, this never would have touched earnings -> Berkshire’s net loss “was primarily driven by the $7.807B loss in marketable securities which is now reported in net income”. Under IFRS FVOCI, Berkshire would have reported a multibillion-dollar profit, not a loss.

➔ Hence, cross-standard earnings comparison is not economically meaningful without adjustments.

SUBRIME CRISIS AND FAIR VALUE ACCOUNTING

Starting from 1990 several financial institutions started landing money to borrowers whose level of income, down payment or credit score did not allow them to be classified as “prime” mortgages, but they have been called “subprime”. The subprime boom that occurred in those years give low-income borrowers good opportunities -> because of the increase that occurred in the real estate market in the US (which was growing at an exponential rate), borrowers had the possibility of obtaining mortgages with higher principals (covered by the higher value of houses) and obtain the money for financing their spendings.



For protecting themselves, banks decided to create Mortgage-Backed Securities (MBS), which were pools of mortgages that entitle investors to obtain a portion of the principal repayment and the interest. MBS were typically sold to Collateralized Mortgages Obligations (CMO), which were special purpose entities created to buy and hold MBS. In case the company would have bought additional assets together with the MBS (such as securitized credit card receivable), we were in front of a Collateralized Debt Obligation (CDO). It was common practice, at a certain point, to collect these CDOs, pack them in other CDOs and sell them to the market and transfer the risk to them.

People collected several mortgages for buying properties -> this system was not sustainable (because the increase in the prices of the houses were not based on any economic substance), because everyone knew about the situation, but no one said anything (in particular, banks knew perfectly the situation of the market and the situation of their customers) -> eventually resulted in a bubble. As a consequence, as we said before, banks started packaging these loans in other instruments in order to transfer the risk to someone else -> they kept doing this for so long that the moment in which there would have been a recession, the bubble exploded -> the prices of the houses, over which the system was built on, started to decrease immediately (as it is possible to see in the graph) which started a liquidity collapse that, eventually, started to contagion the financial market.

Do you agree or disagree with the arguments of critics in the case that fair-value accounting contributed to and exacerbated the 2008-2009 financial crisis?

The big players that were affected the most by the real estate bubble were banks, because they were financing the real estate market. At some point there was a high supply of real

estate but a low demand, because of all the defaults and the likelihood of not collecting money in the future -> the loan they gave lost their value. Banks decided to fund their loans by emitting financial instruments (such as CDO) that started to increase their value and become more expensive, causing an increasing disequilibrium between the asset side and the liability side of the BS. The victims of this liquidity shortage were the loan given to companies operating in other sectors, and because there was no money to fund their operation, leading the stock prices to go down. Many of those investments were classified as FVTPL, which means that in case the value of the loan went down this was recorded as a loss in the IS. Because there was every day some client that defaulted, everyday there was an impairment test to conduct.

Did the fair value accounting cause the financial crisis? Fair value did amplify the crisis in the short run, mainly through pro-cyclical interactions with leverage and capital regulation in illiquid markets.
But I disagree with the stronger claim that fair value caused the crisis or that the losses were merely “paper” losses. The case evidence shows the root causes lay in credit risk, leverage, and liquidity risk, and fair value largely revealed those problems earlier and more transparently.

The case is clear that the underlying economics were deteriorating well before the accounting became controversial:

- Subprime lending exploded: subprime originations grew from 5% of total mortgages in 1994 to 20% ($600bn) in 2006, with volumes tripling from ~1m to 3m loans between 2002 and 2005–06.
- Lending standards weakened (“stated income”, piggyback loans, easy refi assumptions).
- House prices then fell ~19% from peak by September 2008, triggering sharp increases in delinquencies and foreclosures.
- Delinquency rates on single-family mortgages tripled between 2005 and 2008, and subprime foreclosure rates were massively higher than prime.

These real credit problems drove collapses in the ABX indices (AAA tranche from 100 to 40; A from 100 to 5). So, before we get to accounting, the case documents a textbook asset bubble, excessive leverage and a severe liquidity crunch

Critics argue that fair value amplified this underlying shock into a systemic crisis -> As markets froze, subprime-related assets were still required to be marked to market (FAS 115 / 133 / 157) for trading and AFS portfolios. Peter Wallison describes a downward spiral: falling prices → collateral calls → forced sales → further price drops → more write-downs and collateral calls. He notes that cash flows on many portfolios had “generally continued to meet expectations,” while mark-to-market prices plunged, forcing large write-downs and “making [banks] appear weaker than they would if their assets were valued on the basis of the cash flows these assets produce.”

ABA CEO Yingling likened fair value to “pouring gasoline on the fire,” arguing that it imposed large accounting losses during a liquidity crisis -> mark-to-market in distressed markets meant “unrealistically low valuations” and a feedback loop of “accounting losses → capital pressure → forced sales.” Given regulatory capital rules, those write-downs

reduced Tier 1 capital ratios, forcing banks either to raise capital (over $340bn raised by major institutions) or shrink balance sheets, which tightened credit to the real economy.

But why “fair value caused the crisis” is overstated? Several pieces of evidence weaken the stronger claim that fair value caused the crisis or produced purely “artificial” losses.

a) Most core banking assets were not fair-valued -> Under FAS 115, loans held for investment were generally at amortized cost with impairment only when losses were considered permanent. Only trading securities and some AFS positions were fully fair-valued through earnings or OCI. The crisis was therefore not driven by a wholesale fair-value regime; it was a mixed-measurement world.
b) Market price collapses reflected real risk -> document a genuine deterioration in fundamentals:
    a. Housing prices fell sharply, delinquencies and foreclosures surged, and credit spreads (TED spread) blew out from <0.5% to 3.6%.
    b. The ABX indices for even AAA tranches collapsed, showing that markets reassessed the credit quality of structured products, not just liquidity.

    In other words, a significant portion of the write-downs was economically real, not just “crisis discounts.”

c) Fair value also exposed problems early and enhanced transparency -> Proponents in the case stress that fair value:
    a. Gave investors “real-time insight into market volatility” and alerted them quickly to difficulties in subprime instruments.
    b. Jamie Dimon argued mark-to-market would be “far more accurate in terms of recognizing losses than not.”
    c. Stephen Ryan points out that amortized cost also embeds bubble prices at inception; in fact, subprime positions booked at historical cost in the boom are more likely to embody bubble valuations than their later fair values.

We can summary the situation with “fair value as a truth-teller” -> exposing hidden losses and poor risk management that historical cost would have allowed to remain invisible (“too little, too late”).

So while it is possible to accept that fair value amplified the crisis through regulatory and behavioral channels, the evidence suggests it mostly revealed underlying losses that were already baked into the system through lax lending, securitization, ratings failures, and high leverage.

It would be interesting to compare fair value with its most relevant alternative, which is the historical cost:

- Fair value:
    - Advantages:
        - Good prediction about future losses
        - Improves comparability -> if we use the fair value method, two different people having the same interest in the same company need to have the same information about the financial statements of the

company. If we use the amortize cost, the timing at which we look for it the information might be different
        - Efficient capital allocation -> because we are in a fair value accounting, we are more capable of understanding the fundamentals of a company and understand the profitability of our investment
        - increases transparency -> fair value increase the disclosure requirements for the company
    - Disadvantages:
        - More expensive -> it is a complex process, so most of the time you need several assumptions and modelling -> most of the time you need a consultancy company capable of giving this service
        - Increase volatility -> you can have gains and losses
- Historical cost:
    - Advantage:
        - Very predictable and not noisy
        - Relatively cheaper -> you need less actuarial assumption, there is still the impairment test
        - Less volatile
    - Disadvantage:
        - Less transparent and based on old information that still affect the present
        - Less comparability/more opaque

Did fair value cause contagion or reveal it? On one hand, it had a contagion effect because by reflecting the expectation of the market, if these expectations are wrong, then this will impact negatively the financial statements and, therefore, the profitability of investments. On the other hand, it revealed it because fair value requires companies to make assumptions and predictions, and it showed how the information upon which the loans were based on were completely wrong -> the world economy was in the board of a recession, and the financial crises accelerated the problem -> the bubble in the US was just one signals of the world economic crises, and fair value might had a role but not as the main cause.

Should the FASB and IASB reconsider their move towards fair value accounting?

We have to consider that the IAS/IFRS were introduced just 3 years before the financial crisis. Several investors did not have a good understanding of IFRS and the principles were not mature enough to go to a crisis -> 2008 crisis was the first test for the sustainability of IFRS. That's when central banks asked FASB and IASB to reconsider the adoption of the IFRS, and some changes were applied to the reclassification of financial instruments (some risk ones were allowed to be classified within the less-risk one) and they introduced the reclassification through OCI in order to stabilize the financial performance of companies (in particular, banks).

The core trade-off of international principles is between:

- Relevance (reflects current market conditions) -> fair value (transparency but volatile)

- Reliability (depends on model inputs in illiquid markets) -> historical cost (stability but opacity)

What should regulators prioritise during a crisis? The crisis led to one of the most important change in how companies should treat losses and impairment. Before (IAS 39), the impairment was based on retrospective models -> past information was used in order to estimate the risk and provisions after loss event. With the introduction of IFRS 9, it has been introduced the Expected Credit Loss (ECL) model → forward-looking and proactive -> because one of the most relevant information investors want is the predictability of information, this model is meant to stabilize earnings.

There are serious weaknesses of historical cost, especially in boom periods:

- Historical cost allows selective realization of gains/losses, facilitating earnings management and delayed loss recognition.
- It offers “stability but opacity,” hiding build-ups of risk; fair value, by contrast, trades some volatility for transparency.
- As Ryan notes, amortized cost locks in bubble prices at inception; those inflated costs can make balance sheets look healthy long after markets have realized the assets are impaired.

Reverting to historical cost would therefore recreate the “too little, too late” problem, exactly what regulators and investors criticised under IAS 39’s incurred-loss model. Given the political pressure after the crisis, it is notable that the case ends with many investors and analysts still supporting fair value, not historical cost, as the most relevant measure for financial instruments.

After the crisis, the biggest improvement that we can see are:

- IFRS 13 -> fair value hierarchy (1-3) -> increased transparency, because before there weren’t many rules about how to measure fair value
- Basel III: capital buffers and liquidity coverage -> many banks defaulted because at the time of the crisis they did not have enough resources to cover it
- Enhances disclosures: valuation techniques and governance
- Focus on judgement, not mechanical marking (in fact, IAS/IFRS are principle-based rules)

This case is important because it allow us to better understand some crisis that regards our days.

- Covid-19: liquidity stress tested fair value again -> central banks, in order to resolve the liquidity constraints, put a lot of money in the economy, which backfired in the form of inflation
- Inflation & rate shocks: bond valuation losses
- Emerging frontiers: crypto-assets, ESG-linked instruments

Should regulators go further (e.g., suspend mark-to-market in crises)? The case presents one extreme suggestion from the Financial Times article: an “upgraded fair value” model where a national regulator could temporarily suspend mark-to-market and replace it with regulator-set “intrinsic value” models in crises. While this could mitigate pro-cyclicality, it carries big risks:

- Loss of comparability if different regulators act at different times or use different parameters.
- Political pressure to declare a “crisis” whenever valuations are painful.
- Potential for earnings smoothing and hidden losses, taking us back toward opaque historical-cost regimes.

A more balanced path could be:

- Maintain fair value for traded instruments and risk-management portfolios.
- Use amortized cost / ECL for loans held to collect contractual cash flows.
- Allow more use of Level 3 / mark-to-model when markets are clearly distressed—but require robust disclosure of methods, assumptions, and sensitivities.

That is essentially what IFRS 9 + IFRS 13 + Basel III achieve: a mixed-measurement model that tries to blend relevance with prudence

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