EFR summary

Intermediate Accounting, FEB12007X

2024-2025

Lectures 1 to 5

Weeks 1 to 4

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Details

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Intermediate accounting – IBEB – FA Lecture 1 - Intro & Recap lecture

Introduction and basic concepts

Types of financial statements

1. **Balance sheet**: snapshot of a firm's assets and liabilities at a given point in time
2. **Income statement**: statement on the firm's revenue and expenses over time
3. **Cash flow statement**: statement on how the cash account has changed between two dates
4. **Shareholders' equity statement**

Accrual-based accounting

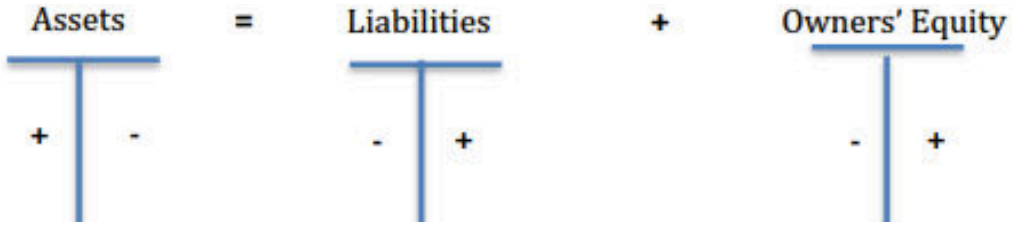
In the accrual basis of accounting, expenses follow revenues and are identified in the period when the economic activity occurs.

Accrual perspective: Earnings = Cash flow + accruals

1. **Accrual principle:** Revenue recognition and matching principle
2. **Deferrals**
    - Prepaid Expenses: expenses that have been paid by the company before they are consumed (e.g., prepaid insurance). These are assets
    - Unearned Revenues: cash that has been received before the company's obligations in the transaction have been fulfilled (e.g., payment in advance for a year-long gym membership). These are liabilities.
3. **Accruals**
    - Accrued Revenues: a product or service has been successfully delivered, but payment has not yet been received. These are assets
    - Accrued Expenses: resources that have been used but not yet paid for. These are liabilities

Debit and credit

Conventional accounting is done with T-accounts, where the left side is called debit and the right side is called credit.



Every debit must have a corresponding credit in another account, since all t-accounts must balance in the general ledger.

Intermediate Accounting – IBEB – FA Lecture 2, week 2
Cash Flow Statement

Cash flow statement

Cash: includes cash in hand and checking accounts
Cash equivalents: short-term, highly liquid investments that are both:

- readily convertible to known amounts of cash.
- near their maturity that they present an insignificant risk of changes in value (e.g., due to changes in interest rates). Generally, investments with original maturities of three months or less qualify under this definition.

Purpose of cash flow statement

- Provide information about a company's cash receipts and cash payments during a period
- Provide cash-basis information about the company's operating, investing, and financing activities

Types of cash flow

Operating activities (involve income statement items):

- Derived from the main business activities
- Cash receipts from sales or cash payments to suppliers and employees
- Returns from loan (interest) and equity securities (dividends)

Investing activities (Involves changes in investments and non-current asset items):

- Buying and selling of fixed assets (PPE)
- Purchase or sale of debt/equity securities from other entities

Financing activities (Involves changes in equity and non-current liability Items):

- Share capital and dividends
- Long-term loans and bond issues

Change in cash = Cash from operations + cash from investments + cash from financing

Convention in our course:	Interest paid	Interest received	Dividends paid	Dividends received	Taxes paid
	OPE	OPE	FIN	OPE	OPE

Preparation of the cash flow statement

Steps:

1. Determine change in cash.
2. Determine net cash flow from operating activities.
3. Determine net cash flows from investing and financing activities.

There are two ways of calculating potential cash flow from operating activities:

1. **DIRECT METHOD:** Potential cash flow = Cash revenues - Cash expenses
2. **INDIRECT METHOD:** Potential cash flow = Net income + non-cash expenses - non-cash revenues

Indirect method

Net income = CFO + accruals => CFO = Net income - accruals

Non-current accruals:

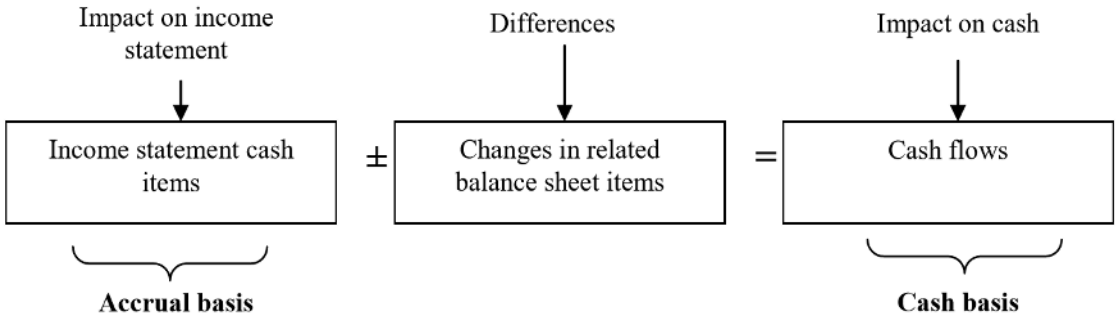
- Depreciation
- Deferred income tax

Current accruals: changes in current operating assets and liabilities:

- Accounts receivables: Increase in AR is subtracted from NI to get CFO
- Prepaid expenses
- Inventory
- Accounts payable: Increase in AP is added to NI to get CFO

Direct method

It can be illustrated through the following equation:



Intermediate Accounting – IBEB – MA Lecture 1, week 3
Cost terms & Absorption versus Variable Costing Systems

Cost Terms and Concepts

Managerial Accounting

Managerial accounting is used for internal decision making and is forward-looking, so there are no regulatory requirements for layout or content. The main aim is to understand how value is created in a company in order to make better decisions.

Financial Accounting

Financial accounting is used for external communication and is backward-looking. This type of communication is needed because ownership and control in corporations are separate. Separation of ownership and control can lead to agency problems, which is why investors and other creditors need to possess the same information as the managers. Ensuring that third parties have full information also helps to combat adverse selection and moral hazard problems.

Cost Object

Anything for which costs can be measured, such as the cost of a department of the firm, or a project, product, or service.

Cost Allocation System

Two stages

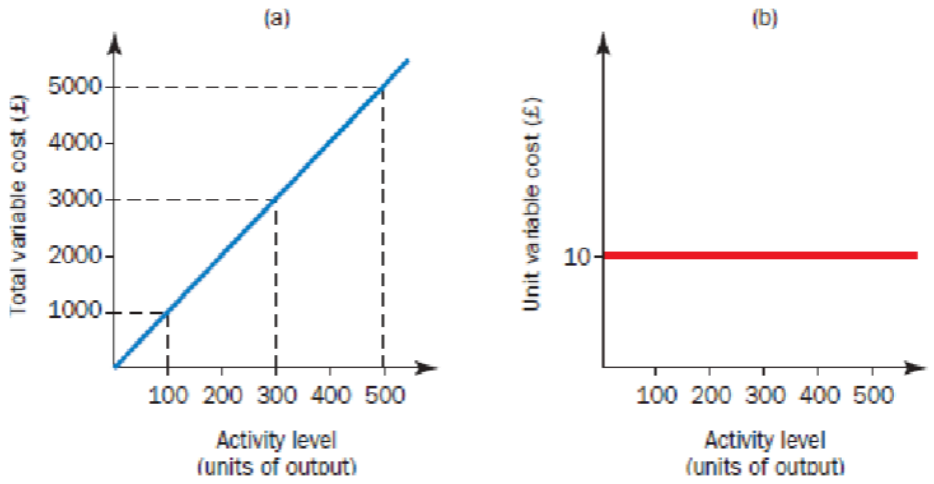
1. **Classifying costs** into categories
    - Behavior
    - Traceability
    - Function
    - Relevance

2. **Cost Assignment** to cost objects. There are two types of costs, direct costs and indirect costs.

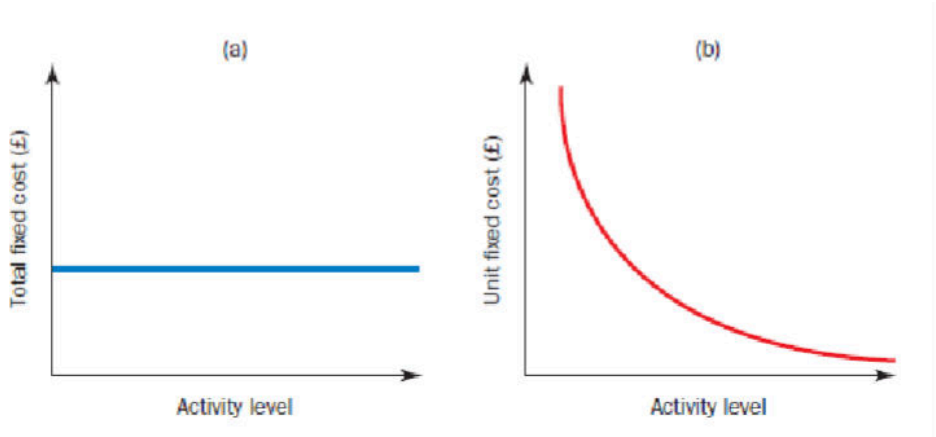
Categories

Behaviour: how the cost changes with activity level

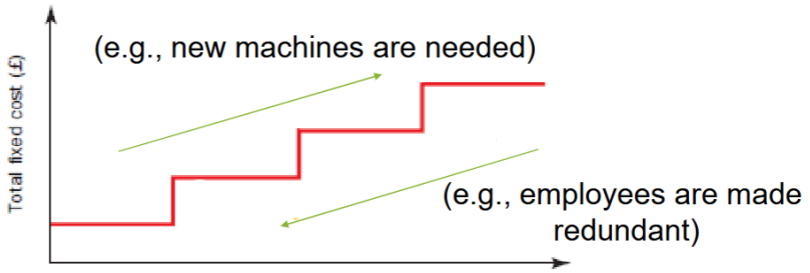
1. Variable costs: change with the total level of activity or volume of operations (e.g., material)



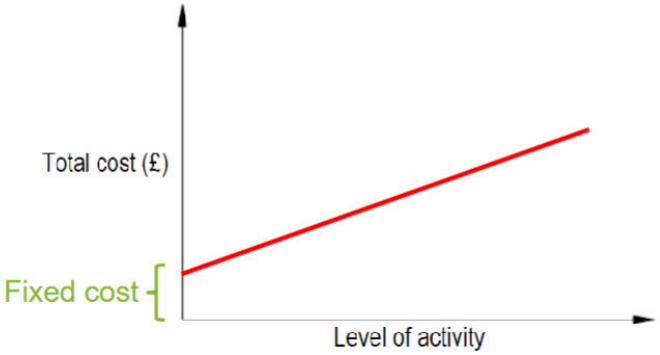
2. Fixed costs: remain constant regardless of the size of operations (e.g. rent or depreciation)



3. Semi-fixed costs (step-fixed costs): Fixed within specific activity levels, for example, being fixed only over a relevant range.



4. Semi-variable costs: mixed costs that are composed of both fixed and variable costs (e.g., labor cost that includes a fixed wage and a variable bonus)



Note: in the long run, ALL costs are variable, but they are fixed when looking at a specific time frame.

Traceability: how easily/accurately costs can be allocated

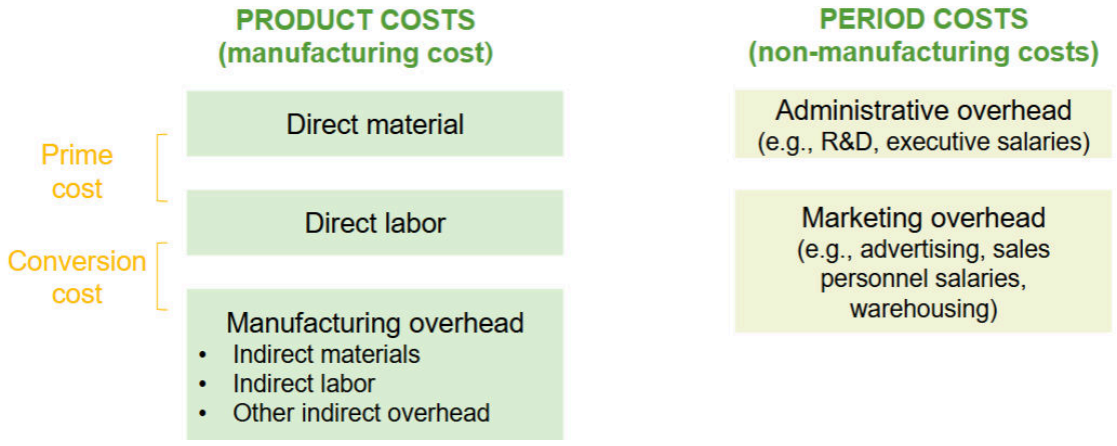
1. Direct costs: costs incurred for one cost object and can be accurately traced back (Golden rule: you can physically observe the amount of material and labour used).
    - Direct material cost
    - Direct labor cost (production employees)

2. Indirect costs: costs incurred for more than one cost object. A cost allocation process is needed.
    - Indirect material costs (cleaning or repair material)
    - Indirect labor costs (administration or maintenance)
    - Other expenses (factory rent)

Distinction:

- Sometimes, direct costs are treated as indirect since it's not cost effective to trace costs directly (e.g: the number of nails used in a desk as the cost is likely insignificant)
- The distinction also depends on the cost object. A cost can be treated as direct for one cost object but indirect in another

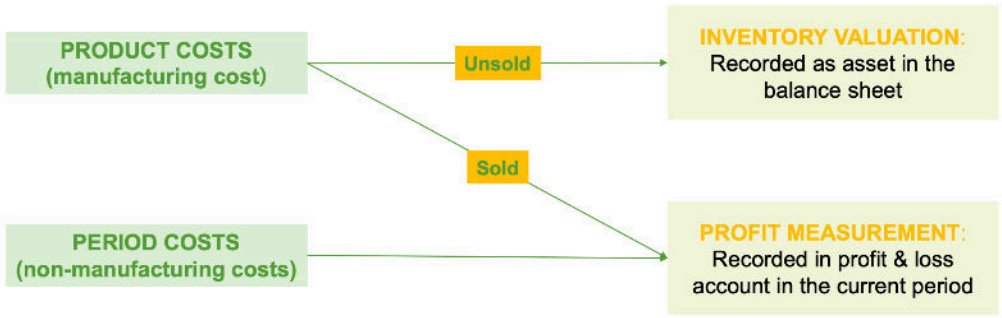
Function: the extent to which the cost is relevant for profit measurement or inventory valuation.



1. Product / Manufacturing cost
    - Direct material
    - Direct labour
    - Manufacturing overhead
        - Indirect material and labor
        - Depreciation of equipment
        - Factory rent and utilities

2. Period / Non-manufacturing cost:
    - Administrative overhead
    - Marketing overhead
    - Office rent (not factory rent)

Note: Every business has period costs, even if NO production takes place.



Product cost

- Unsold: They are treated as inventory on the balance sheet (matching principle: costs should be recorded as assets if they are expected to bring future economic benefits).
- Sold: They become cost of goods sold in the income statement (matching principle: product costs are matched with revenues when the product is sold).

Period cost: Always treated as expenses in the income statement when incurred.

Merchandise (purchase goods for resale without changing their basic form)

- Product cost = cost of goods purchased
- Period cost = all other costs (e.g: selling, admin and distribution)
- COGS = beginning merchandise inventory + purchases during the period - closing merchandise inventory

Service (don't have finished good inventory since it's not possible to store services, but they may have WIP e.g incomplete legal case or consultancy project)

- Product cost = DM (if applicable), DL and overhead assigned to cost object, typically client or customer
- Cost of services sold (COGS equivalent) = beginning WIP + cost assigned to clients during the period - closing WIP

Costs/Revenue Relevance: The extent to which costs are relevant for making a particular decision.

1. Relevant revenue/costs: Future costs and revenues that will be changed by a decision
   Note: NOT all future costs are relevant, but all relevant costs are future costs.
2. Sunk Costs: Costs that have already occurred and cannot be changed by any decision
3. Opportunity Costs: measures the benefits that are lost or sacrificed when a certain action is chosen and an alternative action is given up.
4. Avoidable cost: future costs that may be saved by not adopting an alternative
5. Unavoidable cost: future costs that can't be saved whether or not an alternative is adopted
6. Incremental (differential) cost: difference between the costs of each alternative action
   - Difference with marginal cost: marginal represent the additional cost/revenue of one extra unit whereas incremental represents the additional cost/revenue of a group of additional units

Example

Assume that Tesla must decide between producing electric car batteries themselves or buying them from another supplier firm. Based on the following annual figures, what should Tesla decide?

	MAKE	BUY	
Variable manufacturing costs	5,000,000 EUR	0 EUR	**relevant**
Fixed costs	10,000,000 EUR	10,000,000 EUR	**irrelevant**
Purchase price	0 EUR	25,000,000 EUR	**relevant**
Total relevant costs	-5,000,000 EUR	-25,000,000 EUR	

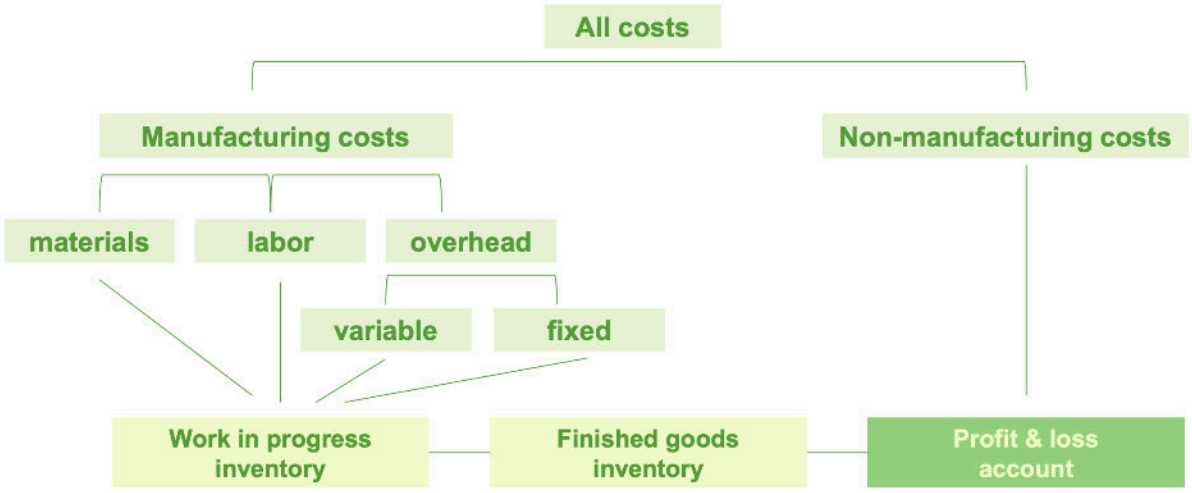
Absorption vs Variable Costing System

The 2 different costing systems differ in the treatment of fixed manufacturing overhead costs, which leads to **different profits**.

Absorption / Full Costing

Absorption costing: both variable and fixed MOH are recorded as inventory costs.

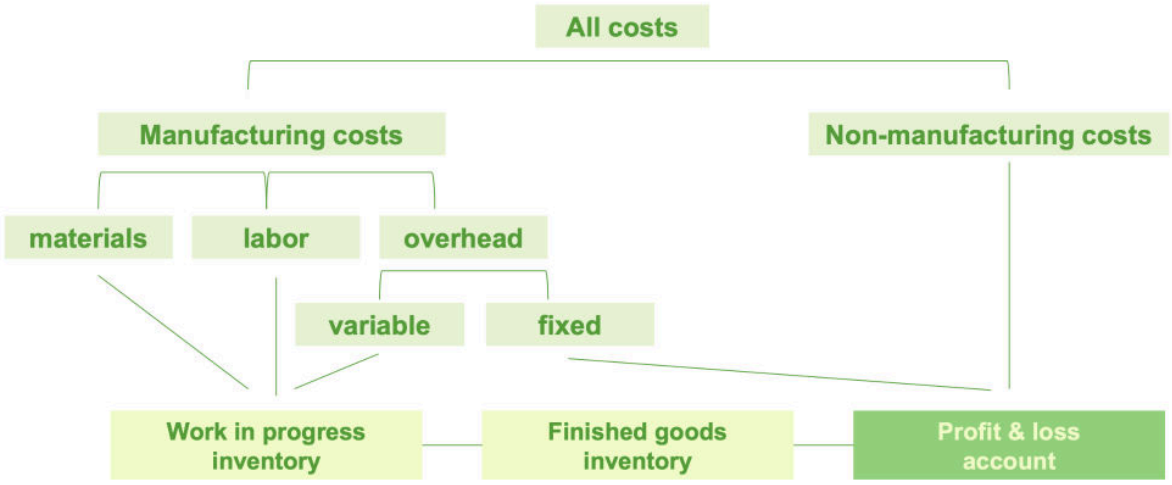
When the product is sold, they're included as COGS in the income statement (follow revenue) => **Fixed MOH is included in product cost and inventory valuation**



Variable / Direct Costing

Variable costing: only variable expenses are recorded as inventory costs.

Fixed MOH is immediately included as period expense in the income statement (don't follow revenues) => **Fixed MOH is not part of the product cost or inventory valuation (period costs)**



Summary

	Absorption Costing	Variable Costing
Included in product cost	- Direct materials - Direct labour - Variable and fixed MOH	- Direct materials - Direct labour - Variable MOH only
Fixed MOH treatment	Treated as part of the inventory cost	Treated as period cost
COGS includes	Variable + Fixed MOH	Only variable costs
Impact on profit if inventory changes	Profit is higher when inventory increases, as some fixed costs are deferred in inventory	Profit is lower when inventory increases, as all fixed costs are expensed immediately

Note: Variable costing uses a contribution margin, whereas absorption costing uses a gross margin in the income statement.

Example

Hello Knitty Factory produces and sells a single type of scarves. The following figures are available:

(in units)	PERIOD 1	PERIOD 2	PERIOD 3
Opening inventory	0	0	1,000
Production	1,000	3,000	1,000
Sales	1,000	2,000	2,000
Closing inventory	0	1,000	0

	EUR
Unit selling price	50
Manufacturing costs	
▪ Variable manufacturing costs per unit produced	20
Direct materials	*11*
Direct labor	*6*
Variable manufacturing overhead	*3*
▪ 12,000 EUR fixed manufacturing overhead per period (for a normal capacity of 1,000 units)	12
Non-manufacturing costs	
▪ Variable selling & administrative expenses per unit sold	4
▪ Fixed selling & administrative expenses per period	7,000

fixed = overhead rate $\frac{12{,}000}{1{,}000}$

(1) Profit and loss (P&L) account based on VARIABLE COSTING:

	PERIOD 1	PERIOD 2	PERIOD 3
sales	**50,000** (1,000 x 50)	**100,000** (2,000 x 50)	**100,000** (2,000 x 50)
– variable COGS	**20,000** (1,000 x 20)	**40,000** (2,000 x 20)	**40,000** (2,000 x 20)
opening inventory	*0*	0	*20,000(1,000 x 20)*
production	*20,000 (1,000 x 20)*	*60,000 (3,000 x 20)*	*20,000 (1,000 x 20)*
- ending inventory	*0*	*20,000 (1,000 x 20)*	*0*
– variable non-manufacturing costs	4,000 (1,000 x 4)	**8,000** (2,000 x 4)	**8,000** (2,000 x 4)
= contribution margin	**26,000**	**52,000**	**52,000**
– fixed manufacturing overhead	**12,000**	**12,000**	**12,000**
– fixed non-manufacturing costs	**7,000**	**7,000**	**7,000**
= net operating income	**7,000**	**33,000**	**33,000**

(1) Profit and loss (P&L) account based on ABSORPTION COSTING:

	PERIOD 1	PERIOD 2	PERIOD 3
sales	**50,000** (1,000 x 50)	**100,000** (2,000 x 50)	**100,000** (2,000 x 50)
– COGS	**32,000** (1000 x 32)	**64,000** (2,000 x 32)	**64,000** (2,000 x 32)
opening inventory	*0*	*0*	*32,000 (1,000 x 32)*
production	*32,000 (1,000 x (20+12))*	*96,000 (3,000 x 32)*	*32,000 (1,000 x 32)*
- ending inventory	*0*	*32,000 (1,000 x 32)*	*0*
–/+ under- or over-absorption of fixed overhead	*I*	**24,000** ((3,000 – 1,000) x 12)	*I*
= gross margin	**18,000**	**60,000**	**36,000**
– non-manufacturing costs	**11,000** (4 x 1,000 + 7,000)	**15,000** (4 x 2,000 + 7,000)	**15,000** (4 x 2,000 + 7,000)
= net operating income	**7,000**	**45,000**	**21,000**

Absorption Costing: Four Denominator Levels

Under absorption costing, it requires an estimation of fixed overhead rates to assign per unit. Thus, it requires an allocation base to help estimate these costs:

1. **Theoretical capacity (maximum):** this means production which is at full speed of what is physically possible, all the time.
2. **Practical capacity:** production at maximum capacity, but considering unavoidable disruptions, holidays, maintenance time, etc.
3. **Normal capacity:** satisfies what customers on average demand over multiple time periods.
4. **Master-budget capacity:** most expected capacity utilisation that will occur in the next budget period.

Example

Hello Knitty Factory provides us with the following figures concerning their different capacity levels:

CAPACITY LEVELS	*(in units)*
Theoretical capacity	4,000
Practical capacity	3,000
Normal capacity	1,000
Budgeted capacity	1,500

Assume that actual activity and actual fixed manufacturing overhead equal 1,000 units and 12,000 EUR, respectively

	FIXED MANUFACTURING OVERHEAD RATE (EUR/unit)	ALLOCATED TO PRODUCTS (EUR)	UNDER- OR OVER-ABSORPTION OF FIXED OVERHEAD (EUR) (cost of unused capacity)	F/A	TOTAL (EUR)
Theoretical capacity	(12,000 / 4,000) = 3	(3 x 1,000) = 3,000	((4,000 – 1,000) x 3) = 9,000	A	12,000
Practical capacity	(12,000 / 3,000) = 4	(4 x 1,000) = 4,000	((3,000 – 1,000) * 4) = 8.000	A	12,000
Normal capacity	(12,000 / 1,000) = 12	(12 x 1,000) = 12,000	((1,000 – 1,000) * 12) = 0	/	12,000
Budgeted capacity	(12,000 / 1,500) = 8	(8 x 1,000) = 8,000	((1,500 – 1,000) * 8) = 4,000	A	12,000

Profit comparison

Variable costing: Profit is a function of sales volume only
Absorption costing: Profit is a function of sales and production volume

- **Production > Sales**: profit absorption costing > profit variable costing (inventories increase)
- **Production < Sales:** profit absorption costing < profit variable costing (inventories decrease)
- **Production = sales**: profit absorption costing = profit variable costing (NO change in inventories)

If production exceeds sales and variable costing records all of the fixed costs as period costs, then unsold inventory will be treated as an expense on the income statement. Hence, profit will be lower in comparison with absorption costing, where only the fixed costs associated with sold goods are recorded as expenses.

Similarly, when sales exceed production, more of the fixed costs are expensed under absorption costing than with variable costing because variable costing would again record the produced goods.

Intermediate Accounting – IBEB - MA Lecture 2, week 3 Cost Allocation

Cost Assignment

Job Costing

This is when firms offer unique individual products or at least small batches of unique products to their customers. Usually these products are tailored to meet the specific needs of each customer. This means that they will have their own characteristics and costs, thus must assign costs for each product individually.

Example: Erasmus University wants to order chocolates for their students to wish them good luck with their exams. They will place a custom order.

Process Costing

This is when large volumes of similar products are produced. Thus, these products are identical, and the costs will be the same

Example: Tony's Chocolonely produces the salted caramel chocolate bar. It is produced in mass production and on a continuous basis. There is no need to assign costs individually, as they have identical characteristics and costs.

Direct Tracing vs Cost Allocations

Direct Costs

These costs include direct labour and material and can be accurately and immediately linked (directly traced) to an individual cost object. Remember that you can physically observe exactly how much direct material or labour is needed.

Indirect costs

Indirect costs are costs related to a cost object but that cannot be traced to it. We cannot use direct measures.

Example: electricity costs or heating costs of the factory. We do not know exactly the quantity and the costs that are associated with the specific quantity that is consumed by each object manufactured. Therefore, we need a cost allocation process, where surrogate/alternative measures are used.

Note: costs are first treated as assets because we expect that these costs will generate future revenue. They are first registered as work in progress or finished goods. It is only when a product is sold that it is treated as an expense in the profit/loss account.

Cost Drivers or Cost Allocation Basis

Any factor that causes a change in the cost of manufacturing products or offering services.

1. **Volume-related:** depends on the number of units manufactured (labour/machine hours, labour costs)
2. **Non-volume-related:** do NOT depend directly on units manufactured (number of setups, number of inspections)

Note: for accurate cost assignment, cost drivers should be significant determinants of costs. There should be a **causal relationship** between the cost driver and the size of the costs.

Allocation of Indirect Costs to Cost Objects

There are two ways to allocate indirect costs:

1. **Traditional Costing System - Arbitrary Allocations:** cost drivers are NOT always a significant determinant of cost. Less accurate cost assignment but are still very popular in practice.
2. **Activity-Based Costing System - Cause & effect Allocations:** focus on cost drivers that significantly determine the amount of costs so that we have an accurate cost assignment.

Note: under a traditional costing system the accuracy of cost assignment will be lower but it is a less expensive system. This is because higher accuracy requires gathering information and keeping information up to date which is more costly (higher operating costs).

Apply the rule: **marginal benefit > marginal cost of making the system more accurate.**

Factors Impacting Benefit-Cost Tradeoff:

- **Size of the indirect cost:** if indirect costs are low compared to toilet cost then a traditional costing system can still be very accurate.
- **Cost of gathering information:** if the cost of gathering/keeping information is low, then it is best to work with the activity-based costing system.

- **Product diversity:** if more different products are manufactured, the they will consume costs in different ways. Thus, activity-based costing is better suited.
- **Why do we need cost allocation?**
    - If we need it for managerial decision-making purposes => activity-based costing
    - If we need it to capture the value of inventory/COGS => traditional costing

Traditional Costing System

Assume that *Tony Chocolonely* produces **two unique types of chocolate bars (standard vs. premium chocolate bar)** made to Erasmus School of Economics' specifications. The following budgeted figures are available:

	STANDARD	PREMIUM	TOTAL
Production and sales	10,000	5,000	15,000
Direct materials (EUR)	2	4	40,000
Direct labor hours (hours)*	0.2	0.5	4,500
Direct labor costs (EUR)	1.6	4	36,000
Machine hours X	0.5	1.5	12,500
Machine hours Y	1.0	1.0	15,000
Indirect costs or manufacturing overhead (EUR)			225,000

Plant-wide (Blanket) Overhead Rate

The use of a single budgeted overhead rate for the organization as a whole. An overhead rate tells us how overhead costs are charged based on the chosen cost driver, thus, it is calculated as follows:

$$Budgeted\ Overhead\ Rate\ = \frac{total\ budgeted\ manufacturing\ overhead}{total\ budgeted\ amount\ of\ the\ cost\ driver}$$

The overhead rate is used for the factory as a whole which leads to multiple disadvantages because within an organization products often pass through many different departments. Thus by using a single rate you assume that all products go through these departments in a similar way (**assume that product diversity is low**). This does not coincide with reality, therefore it is not commonly used in practice.

Example:

Cost assignment of 225,000 EUR manufacturing overhead using direct labor hours as cost driver:

Budgeted plant-wide overhead rate: $= \frac{225{,}000 \text{ EUR manufacturing overhead}}{4{,}500 \text{ direct labor hours}}$

$= 50 \text{ EUR per direct labor hour}$

	STANDARD	PREMIUM
Direct materials	2	4
Direct labor costs	1.6	4
Manufacturing overhead	10 *(0.2 x 50)*	25 *(0.5 x 50)*
TOTAL COSTS PER UNIT **TOTAL COSTS**	13.6 136,000	33 165,000

Most likely premium bars use departmental resources in different ways, in the sense that it requires going through more departments (needs more processing). Thus we must look at other systems.

2-Stage Allocation Process: Traditional

This works best when product diversity is high. This is when cost objects will consume overhead costs in different ways. The difference from this process to others is how we treat manufacturing overhead.

1st Stage: assign manufacturing overhead to production cost centers/pools (typically departments).

- Some are first allocated to a service cost center that renders essential support in the production process, but they are not directly related to production (these costs are reallocated to production centers).

2nd Stage: compute separate overhead rates for each production cost centre, then use cost drivers to allocate all the costs assigned to different production cost centres (1st Stage) to the cost objects.

- Traditional costing system: typically volume-based cost drivers (hours)

Example:

1st Stage

Allocate 225,000 EUR manufacturing overhead to production centres (i.e., production, packaging and quality department) (*STEP 1*):

	MANFACTURING OVERHEAD	COST DRIVER TO PRODUCTION COST CENTRES	AREA (SQ. METRES)
Indirect wages and supervison			
production department	10,000	Direct	280,000
packaging department	10,000	Direct	80,000
quality department	5,000	Direct	40,000
Lighting and heating	200,000	**Area**	

BUDGETED OVERHEAD RATE

$$= \frac{200{,}000}{280{,}000+80{,}000+40{,}000}$$

= **0.50 EUR** per sq. metre

	PRODUCTION COST CENTRES OVERHEAD
PRODUCTION	150,000 (*10,000* + ***280,000*** x*0.50*)
PACKAGING	50,000 (*10,000* + ***80,000*** x *0.50*)
QUALITY	25,000 (*5,000* + ***40,000*** x *0.50*)
	225,000

Cost Allocation, MA Lecture 2 (slide 15)

Note that indirect wages are direct for departments but indirect for cost objects. We know how much wage we have paid in each department, but we do not know how much labour from each department was used for each cost object.

2nd Stage

Allocate overhead in production centres to cost objects (*STEP 2*):

	PRODUCTION COST CENTRES OVERHEAD (1)	COST DRIVER TO COST OBJECTS (2)		BUDGETED PRODUCTION COST CENTRE OVERHEAD RATES (3) = (1) / (2)
PRODUCTION	150,000	Machine hours X	12,500	12 EUR per machine hour
PACKAGING	50,000	Machine hours Y	15,000	3.33 EUR per machine hour
QUALITY	25,000	Direct labor hours	4,500	5.56 EUR per labor hour

	STANDARD	PREMIUM
Direct materials	2	4
Direct labor costs	1.6	4
Production	6 (*12 x 0.5*)	18 (*12 x 1.5*)
Packaging	3.33 (*3.33 x 1.0*)	3.33 (*3.33 x 1.0*)
Quality	1.11 (*5.56 x 0.2*)	2.78 (*5.56 x 0.5*)
COST PER UNIT	14.04	32.11
TOTAL COSTS	140,400	160,550

We can see that a premium chocolate bar consumes more overheads in the production and the quality department. This is not observable when using only one overhead to allocate all manufacturing overhead to our cost objects.

2-Stage Allocation Process: Activity-Based Costing Systems (ABC)

In this process, overheads are allocated to each major activity related to manufacturing a cost object, which is called activity cost center.

Activities are defined as the aggregation of many different tasks that share the same goal and cause the consumption of resources. Example: purchasing components, scheduling production, set-up machines, quality inspection.

The main difference is that ABC systems usually have more cost centers/pools than the traditional costing systems. This is because within a specif department multiple activities can be performed resulting in more activity cost centers than production cost centers under a traditional costing system.

1st Stage: identify activities with a reasonable level of aggregation based on cost-benefit criteria and then use **resource cost drivers** to allocate each cost object to the activity cost centers.

- resource cost drivers: measure the quantity of resources consumed by an activity.

2nd Stage: use **activity cost drivers** to assign the cost within each activity cost center to different cost objects.

- Activity cost drivers: can be volume or non-volume-based
- Results in a more accurate assignment of costs.

Example

1st Stage:

Assume that **budgeted overhead of 225,000 EUR** is caused by the following **activities** (*Step 1*) and activities have the following activity cost drivers:

	OVERHEAD IN ACTIVITY COST CENTRES	ACTIVITY COST DRIVERS
PURCHASING	30,000	Number of purchase orders
MACHINE SET-UP	100,000	Number of set-ups
MAINTENANCE	20,000	Machine hours X
PACKAGING	50,000	Machine hours Y
QUALITY INSPECTION	25,000	Number of first item inspections
	225,000	

2nd Stage:

The following figures are also known:	STANDARD	PREMIUM	TOTAL
Production and sales	10,000	5,000	15,000
Number of purchase orders	2	4	40,000
Number of set-ups	1	6	40,000
Machine hours X	0.5	1.5	12,500
Machine hours Y	1.0	1.0	15,000
Number of first item inspections	4	10	90,000

Allocate overhead in activity centres to cost objects (*STEP 2*):

	ACTIVITY COST CENTRE OVERHEAD (1)	TOTAL AMOUNT OF ACTIVITY COST DRIVER (2)	BUDGETED ACTIVITY COST DRIVER RATES (3) = (1) / (2)
PURCHASING	30,000	40,000	0.75 EUR per purchasing order
MACHINE SET-UP	100,000	40,000	2.5 EUR per set-up
MAINTENANCE	20,000	12,500	1.6 EUR per machine hour X
PACKAGING	50,000	15,000	3.33 EUR per machine hour Y
QUALITY INSPECTION	25,000	90,000	0.28 EUR per inspection

BUDGETED ACTIVITY COST DRIVER RATES (3) = (1) / (2)
0.75 EUR per purchasing order
2.5 EUR per set-up
1.6 EUR per machine hour X
3.33 EUR per machine hour Y
0.28 EUR per inspection

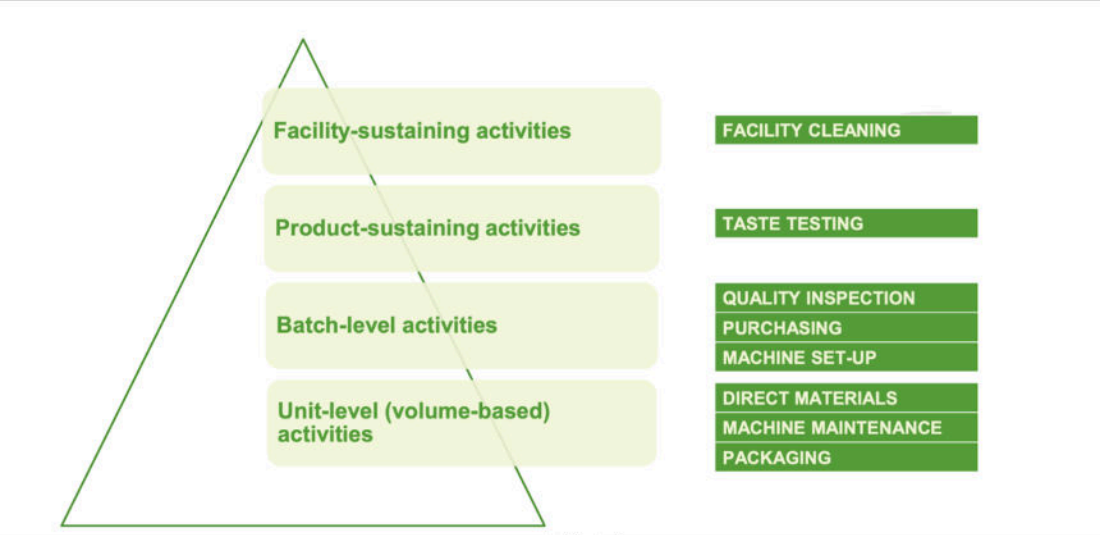
	STANDARD	PREMIUM
Direct materials	2	4
Direct labor costs	1.6	4
Purchasing	1.5 (*0.75 x 2*)	3 (*0.75 x 4*)
Machine set-up	2.5 (*2.5 x 1*)	15 (*2.5 x 6*)
Maintenance	0.80 (*1.6 x 0.5*)	2.40 (*1.6 x 1.5*)
Packaging	3.33 (*3.33 x 1*)	3.33 (*3.33 x 1*)
Quality controls	1.12 (*0.28 x 4*)	2.80 (*0.28 x 10*)
TOTAL COSTS PER UNIT TOTAL COSTS	12.85 128,500	34.53 172,650

Note that the premium chocolate bar is more complex, and the costs associated with the complexity are better captured by the ABC system, as it shows which activities are the most cost-intensive.

Activity hierarchies

- **Facility-sustaining activities:** support the organization as a whole
  - Unavoidable & irrelevant => do NOT allocate to products
- **Product-sustaining activities:** support an entire product line
- **Batch-level activities:** performed each time a batch of goods is produced

- **Unit-level (volume-based) activities:** performed each time a unit of the product/service is produced



Over/Under Absorption of Manufacturing Overheads

Under/over absorption arises if allocated overhead </> actual overhead.

Intermediate Accounting – IBEB – FA Lecture 3, week 3 - Equity

Initial Public Offering (IPO)

For a firm to become publicly owned, it raises capital by issuing shares in an initial public offering (IPO). After the IPO, shares are able to be traded freely in the open market. The capital it earns is part of contributed capital and does not need to ever be paid back to investors in the IPO.

Advantages:

- Raise capital
- Monetize investments of early private investors
- Become a traded enterprise

Disadvantages:

- Greater costs
- Disclosure requirements
- Stronger agency problems

Equity

Share Types

Shares represent residual corporate interest that:

- They bear the risks of losses
- Receive the benefits of success
- There are NO guaranteed dividends/assets upon dissolution

Some companies offer two or more classes of shares (dual shares):

1. **Ordinary Shares (Class A)** - represent the basic ownership interest. Each share has rights/privileges:
    - Sharing profits and losses in proportion to ownership (the number of shares owned)
    - Sharing proportionately in management of the firm (voting rights)
    - Sharing proportionately in the assets that the firm owns, in case it has to be liquidated (assets have to be sold to satisfy creditors)
    - Sharing proportionately in the issuing of any new shares of the same class (called the pre-emptive right)

2. **Preference Shares (Class B)** - sacrifice certain basic rights in return for other special rights:
    - Preferred dividends (cumulative/non-cumulative)
    - NO voting rights (Not always)
    - Alternatively, more voting rights per share
    - Convertible into ordinary shares
    - Callable by firm: The firm has the option to repurchase the bond/share before maturity at a preset price.

Note: Within a given class of shares, each share exactly equals every other share. Dual shares (a mix of both types of shares) are NOT always allowed.

Key Components of Equity

Equity = Assets - Liabilities = Residual interest in the firm's assets after deducting all liabilities.

Primary Sources of Equity:

1. Contributed Capital
   - Ordinary shares account: The par or nominal value of common stock issued.
   - Preference shares account: For preferred stock, if issued.
   - Share Premium: Any amount paid by shareholders above the nominal value of the shares.

2. Retained Earnings Account:

3. Treasury Shares Account:
   - This account reflects shares the company has repurchased
   - Treasury shares are held by the company and do not receive dividends or voting rights.
   - They are recorded as a negative number in equity, reducing total shareholders' equity.

Key Steps to Issue Shares

1. The applicable governmental agency must authorize the share issuance/IPO

2. The company hires investment banks (underwriters and legal consulting firms) to get guidance for the process.
   - Contact institutional investors
   - Helps with road shows and disclosure requirements

3. Underwriters have to determine the IPO price based on the demand from institutional investors.

4. On the day of the IPO, the shares are traded at the stock exchange. As a private investor you may then start trading shares in the secondary market.

Par/Non Par value shares

1. Par Value Shares - Company had to maintain 2 separate accounts for preference and ordinary shares:

- **Share Capital Account** = nominal share capital = par-value of shares = no. of shares x par value
- **Share Premium Account** = the excess over par value

The par value has no relation with the fair value and is usually a very low amount.

2. Non-Par Value Shares - Company maintains just one account (share capital)

Example: Journal entries for a 0.01 euro par-value of 1,000,000 ordinary shares at 20 euros.

	Debit	Credit
Cash	20,000,000	
Share capital - ordinary account		10,000
Share premium - ordinary account		19,990,000

Note: if there was no-par value, just credit the full amount to share capital.

Costs of Issuing Shares: Direct costs e.g underwriting costs, accounting/legal fees, printing costs, taxes, ...

These costs reduce the total equity raise, so they are debited from the share premium account, instead of being recorded as expenses in the income statement.

Lump-Sum Sales

Lump-sum sale: When two or more classes of securities are issued for a single payment.

1. Proportional Method

Allocate lump sum on a proportional basis of fair values.

E.g., shares issued for lump sum of $30,000 – 1,000 ordinary shares ($10 par value, $20 fair value) and 1,000 preference shares ($10 par value, $12 fair value)

FV ordinary shares (1,000 x $20)		=	$20,000
FV pref. shares (1,000 x $12)		=	$12,000
	Total	=	$32,000

Allocation to:
Ordinary shares = 20/32 (or 62.5%) x $30,000 = **$18,750**
Pref. shares = 12/32 (or 37.5%) x $30,000 = **$11,250**

Journal entry

	Debit	Credit
Cash	30,000	
Share Capital—Ordinary		10,000
Share Premium—Ordinary		8,750
Share Capital—Preference		10,000
Share Premium—Preference		1,250

2. Incremental Method

Allocate first to securities with known fair value, then the rest to the class without fair value.

Lump-sum receipt	=	$30,000
Ordinary (1,000 x $20)	=	$20,000
Balance	=	$10,000

→ Balance is allocated to preference shares

	Debit	Credit
Cash	30,000	
Share Capital—Ordinary		10,000
Share Premium—Ordinary		10,000
Share Capital—Preference		10,000
Share Premium—Preference		0

Non-Cash Transactions

Shares non-cash transactions are issued in exchange for services or property.

Important:

- Records shares at fair value of goods/services
- **If fair value cannot be measured reliably, record at the fair value of shares**
- If both are unavailable: use alternative valuation methods (example: market data/discounted cash flow approach). Avoid using book/par/stated values

	Debit	Credit
Goods	Fair Value	
Share Capital		Par-value
Share Premium		FV - (par-value)

Share Buybacks

Share buybacks: once shares have been issued a company can re-acquire them.

Benefits/Incentives:

- Provide tax-efficient distributions of excess cash to shareholders
- Increase earnings per share and return on equity
- Provide shares for employee compensation contracts or to meet potential merger needs
- Better fight hostile takeover attempts or to reduce the number of shareholders
- Make a market in the shares

After re-acquiring:

- Retire the shares
    - Cancelation
    - Reduction in the number of issued shares
    - Technically have the status of all authorized and issued shares (company does NOT need to seek approval from its shareholders)
- Hold the shares in the treasury account
- Treasury shares be me re-issued

Keep in mind that Treasury shares are NOT an asset!

- Reduction in assets and equity because a company cannot own itself
- No voting right
- The same as unissued ordinary shares

Treasury Shares

There are two methods to record them: **Cost Method** and **Par-Value Method** but most require the first one.

1. **Cost Method:** account for the cost of buying back the shares
    - Purchase cost define the accounting value
    - Debit treasury shares account
    - Credit cash account
    - Report treasury shares account - **contra-equity** account as a deduction from equity on the balance sheet

Selling treasury Shares

When selling treasury shares, accounting depends on price:

1. Selling price = cost of the re-acquisition
2. Selling price > cost of re-acquisition

3. Selling price < cost of re-acquisition

At cost:	Cash (BS)	X	
	Treasury shares (BS)		X
Above cost (X+Y):	Cash (BS)	X+Y	
	Treasury shares (BS)		X
	Share Premium - Treasury (BS)		Y
Below cost (X-Y):	Cash (BS)	X-Y	
	Share Premium - Treasury (BS)*	Y	
	Treasury shares (BS)		X

[*Only if there is a credit balance in "Share Premium – Treasury". Otherwise: debit any additional excess of cost over selling price to the "Retained Earnings".]

Example 1: Sale of treasury above cost

Pacific acquired 10,000 treasury shares at $11 per share. It now sells 1,000 shares at $15 per share on March 10. Pacific records the entry as follows:

	Debit	Credit
Cash	15,000	
Treasury Shares		11,000
Share Premium- Treasury		4,000

Example 2: Sale of treasury shares below cost

Pacific sells an additional 1,000 treasury shares on March 21 at $8 per share, it records the sale as follows:

	Debit	Credit
Cash	8,000	
Share Premium - Treasury*	3,000	
Treasury Shares		11,000

* **ONLY if there is a credit balance in "Share Premium - Treasury," otherwise debit any additional excess of cost over selling price to Retained Earnings.**

Dividends

Companies want to share their profits with the shareholders through dividends. Only few companies pay dividends in amounts = legally available retained earnings:

- Maintain agreements with creditors (debt covenants)
- Finance growth/expansion
- Smooth out dividend payments
- Build up a cushion against possible losses

Additionally, companies may voluntarily NOT pay a dividend. A reason for this could be that they want to internally finance their growth and expansion strategy. In exchange, dividend shareholders expect an even stronger share price performance to compensate for the lack of dividends.

Types of Dividend

Dividends reduce retained earnings by the same amount

- Total equity is reduced proportionally
- Part of the firm's value is distribute among the owners

1. Cash Dividends:

Declaration Date: create (current) liability against retained earnings

	Debit	Credit
Retained Earnings	x	
Dividends Payable		x

Record Date: there is no journal entry, you only record the transaction
Payment Date: pay cash and reduce liability

	Debit	Credit
Dividends Payable	x	

Cash	x

Remember: a firm can issue preference shares together/instead of ordinary shares. Companies usually issue preference shares with a par value (dividend preference as a percentage of the par value).

2. Property Dividends

Example: Firm A declares a property dividend and transfers equity investments to shareholders. The fair value (FV) of the equity investment is 2 million and the book value (BV) is 1.25 million.

Declaration Date

	Debit	Credit
Equity Investment	750,000	
Unrealized Holding Gain/Loss - Income		750,000
Retained Earnings	2,000,000	
Property Dividends Payable		2,000,000

Payment Date

	Debit	Credit
Property Dividends Payable	2,000,000	
Equity Investments		2,000,000

3. Liquidating Dividends:

Key difference to cash/property dividends:

- NOT based on retained earnings
- Reduce share premium/capital accounts

Example: Firm B issues liquidating dividends (X), half = income (Retained Earnings) and half = return on capital (Share Premium).

Declaration Date

	Debit	Credit
Retained Earnings	½ X	
Share Premium	½ X	
Dividend Payable		X

Payment Date

	Debit	Credit
Dividends Payable	X	
Cash		X

4. Share Dividends:

Distribute its own shares proportionally to stake what shareholders already have (ONLY par-value method)
Book value of equity remains unchanged => shifting between Retained Earnings (decrease) and Share Capital (increase)

Declaration Date

	Debit	Credit
Retained Earnings	Par value	
Share Dividend Distributable (EQ)		Par value

Payment Date

	Debit	Credit
Share Dividend Distributable (EQ)	Par value	
Share Capital		Par value

Note: At the end of the day, the total value of equity remains unchanged!

Share Splits

Assume that a company does not pay any dividends, instead increases its retained earnings, and uses the funds for its growth strategy. In this situation, the share price reflects the growth, sales, and earnings over time. This may cause the share price to become less accessible to investors. This is when share splits are useful.

Share split: split already existing shares to have more shares at a lower price.

Example: 4-for-1 split of 100,000 shares at 100 euros => 400,000 shares at 25 euros.

- There are NO journal entries
- Just a note to record the increased number of shares and the change in the par value per share

Share Split vs Share Dividends

- Share dividends also increase the number of shares outstanding
- It does NOT decrease par value per share, but does increase the total par value of shares.
- Only with the cash dividend is the company able to reduce the total equity.

Equity Presentation

Statement of Changes in Equity

For each component of equity make a reconciliation between carrying the amount at the beginning and at the end of the period. Separately disclosing changes from:

- profit/loss
- Each item of “other comprehensive income”
- Transaction with shareholders

OCI = other comprehensive income

- Income that does NOT go through P&L, but directly to equity
- NO effect on net income and retained earnings
- CI = comprehensive income = net income + OCI

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