

EFR summary

Accounting IBEB, FEB11018X
2025-2026



Weeks 1 to 5

Details

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Accounting – IBEB – FA lecture 1

Accounting and its objectives

Accounting: A universal way of having insight into a company's performance. It is a system that consists of

1. **Identifying**
2. **Recording** (Keeping a systematic diary of events, classifying, summarising)
3. **Communicating** (Preparing accounting reports that are standardised, understandable, and meaningful)

Accounting objective: Provision of useful information on the financial position of a company and changes in this financial position to current and future stakeholders.

Users of accounting data

Internal users	External users
Management	Banks
Human resource	Suppliers
Marketing	Investors

Information are reported through:

- 1) Managerial accounting: Internal reports that help internal users make decisions about their companies.
- 2) Financial accounting: Financial information for investors, creditors, etc

Economic value

Economic value: Economic value is the sum of all future benefits created by a company, regardless of whether those benefits are measured in terms of exchange value or in terms of use value.

Value in Exchange: The value of a business if it ceases operations and sells everything. If the Value in Exchange is greater, it is more advantageous to sell the business.

Value in Use: The value of a business if it continues to operate and generates income.

Principles of accounting

1. **Cost/Historical Principle:** Stipulates that the company must record its assets at the purchase cost.
2. **Fair Value Principle:** companies should report their assets at the price they would receive, should they sell it at that moment.
3. **Expense recognition Principle:** Expenses are recognized when the expense makes its contribution to revenue. This does not have to be in the same period when the expense is paid.
4. **Full Disclosure Principle:** Providing information that is important or has potential to be important in influencing decisions of informed users through financial statements, notes to the financial statements, and supplementary information.
5. Revenue Recognition Principle:

Customer requests service	Firm fulfilled its performance obligation	Cash received
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Four enhancing qualities

1. **Comparability:** If the information is reported in such a way similar to other firms and previous reports such that users can compare reports.
2. **Verifiability:** when independent measurers (e.g. auditors) obtain similar results.
3. **Timeliness:** the information is made available when it is useful and relevant for decision making.
4. **Understandability:** allows reasonably informed users to appreciate the information reported

Cash vs accrual accounting

CASH ACCOUNTING	ACCRUAL ACCOUNTING
Revenues recognized when companies receive cash	Revenues recognized when companies perform services
Expenses recognized when cash is paid	Expenses recognized when incurred
NOT in accordance with IFRS	In accordance with IFRS

The accounting equation

Assets

- A possession of the company
- A possession controlled by the entity
- As a result of past events
- Has the potential to produce economic benefits
- Ex: Cash, accounts receivable

Liabilities

- A present obligation of the entity to transfer an economic resource
- As a result of past events
- The transfer of economic resource results in a loss of future economic benefits
- Ex: Accounts payable

Equity

- The residual interest in the assets of a firm after deducting all liabilities
- The owner of the company is a residual claimant

Accounting equation 1

Total assets = total liabilities + equity

Balance sheet (statement of financial position)

- provides an overview of a company's assets, liabilities, and equity at a specific point in time
- must meet the account equation 1

Accounting – IBEB – FA lecture 2

Accrual accounting

Accounting standards

Set of rules that

- Prescribes how events are recorded in the financial administration
- Which information has to be reported and how

Principles

- Relevance
- Faithful representation

Valuation

- Historical cost
- Fair value

Different accounting standards worldwide

- IFRS (International Financial Reporting Standards)
- US-GAAP (Generally Accepted Accounting Principles)

Accrual accounting assumptions

1. Monetary Unit Assumption: Everything is measured in monetary amounts

2. Economic Entity Assumption: Only events in which the company is involved are relevant

3. Going Concern Assumption: The company is assumed to continue her operating activities in the near future

4. Periodicity Assumption: The company periodically reports her financial position

Recognition criteria for assets and liabilities

Asset recognized on the balance sheet when:

1. It is probable that economic benefits for the company will be realised
2. The value of the asset can be determined in a reliable way

Liability recognized on the balance sheet when:

1. It is probable that economic benefits for the company will be lost
2. The value of the asset can be determined in a reliable way

Accounting equation 2

Total assets = total liabilities + revenue - expenses + capital contributions - capital withdrawals

Income statement

Income statement

- provides an overview of revenues and expenses and the resulting net income/loss over a specific period

Revenue

- an increase in a company's equity that is not the result of a transaction with the company's owners (i.e., a capital contribution)

Expenses

- a decrease in the company's equity that is not the result of a transaction with the company's owners (i.e., capital withdrawal)

Revenue recognition principle: Record revenue in the period that the entity has fulfilled its performance obligation

Expense recognition principle: Record expense in the same period as the corresponding revenue are recorded

Stock vs flow variables

Stock Variable: Calculates the quantity of a variable at a specified date (ex: variables in a balance sheet).

Flow Variable: How a variable's amount has varied throughout time

The accounting cycle

1. ANALYSE TRANSACTIONS
2. RECORD JOURNAL ENTRIES
3. POST LEDGER ENTRIES
4. UNADJUSTED TRIAL BALANCE
5. ADJUSTED ENTRIES
6. CORRECT JOURNAL ENTRIES
7. ADJUSTED TRIAL BALANCE
8. FINANCIAL STATEMENTS
9. CLOSING THE BOOKS (Closing entries)
10. PREPARE A POST-CLOSING TRIAL BALANCE

Step 1. Analyse transactions

When analysing transactions, we must always identify the transaction and determine how much the accounting equation will change with respect to the increase/decrease the transaction has made on its affected accounts.

In **transaction analysis**, we use the expanded accounting equation:

Assets			=	Liabilities		+ Equity				
Cash	+ Accounts Receivable	+ Supplies and Equipment		Accounts payable		+Share Capital	+ Prior Retained Earnings	- Dividends	+ Revenues	- Expenses

Step 2: Record journal entries

Journal entry: Description of an economic translation in terms of T-accounts and their corresponding changes

Journal Entry Example:

Account Name	Debit	Credit
Work in progress inventory	3,400	
Raw Materials		1,800
Factory labour		1,600

Total debit = total credit

Step 3: Posting ledger entries

Ledger: Set of all accounts that are maintained by a firm. Therefore, it includes all asset, liability and owner's equity accounts.

Step 4: Unadjusted trial balance

Trial Balance: All T-accounts and the net balance on each T-account at a specific date

Steps to create a trial balance

1. Create two columns, one for debit and one for credit (in that order).
2. List the account titles and their balances in the relevant columns, generally in order of appearance in the ledger.
3. Calculate the total of each column to prove equality.

Example

Yazici Advertising A.Ş. Trial Balance October 31, 2022		
	Debit	Credit
Cash	₺ 80,000	
Accounts Receivable	72,000	
Supplies	25,000	
Prepaid Insurance	6,000	
Equipment	50,000	
Notes Payable		₺ 50,000
Accounts Payable		25,000
Unearned Service Revenue		12,000
Share Capital—Ordinary		100,000
Dividends	5,000	
Service Revenue		100,000
Salaries and Wages Expense	40,000	
Rent Expense	9,000	
	<u>₺287,000</u>	<u>₺287,000</u>

Accounting – IBEB – FA lecture 3

Step 5: Adjusted entries

Prepaid expense

- Debit expense
- Credit prepaid asset

Unearned revenue

- Debit unearned revenue
- Credit revenue

Accrued expenses

- Debit expense
- Credit accounts payable

Accrued revenue

- Debit account receivable
- Credit revenue

Depreciation

- Debit depreciation expense
- Credit asset

Step 6: Correcting journal entries

2 steps:

1. Reverse the erroneous journal entry
2. Record the correct journal entry

Step 7: Adjusted trial balance

After the company has journalised and posted all adjusting entries, it prepares adjusted trial balance. Compared to an unadjusted trial balance, the adjusted trial

balance has more accounts as a result of the adjusting entries made at the end of the month.

This balance is:

- Prepared after all of the accounts have been adjusted.
- Used to show the equality of debits and credits and the fact that the basic accounting equation (still) holds.

Step 8: Financial statements

The adjusted trial balance is the basis to write up the financial statements

Income statement

- Presents revenues and expenses, and the corresponding net income/loss for a specific period of time
- Does not include any withdrawals made by the owners or any investment decisions made by the ownership.

Statement of Changes in Equity/ Owner's equity statement

- Summarises changes in owner's equity for a specific period of time
- Reports the owner's equity, followed by owner's investments, net income/net loss and owner's drawings

Statement of Financial Position (Balance sheet)

- Includes the assets, liabilities and owner's equity at a specific date

Statement of Cash Flows

- Summarises information about cash inflows (receipts) and cash outflows (payments) for a specific period of time
- Answer questions such as where any cash originated, what it was spent on and what the resulting change was
- Reported by listing a company's operating (e.g. selling products), investing (e.g. the purchase of equipment) and financing activities (e.g. drawings by owner) during the period.

Statement of Retained Earnings

- Retained Earnings = Beginning Retained Earnings + Net income/loss - Dividends paid to shareholders

Income statement

Revenues: Increase in the company's equity which is not the result of a transaction with the owners.

Expenses: Decrease in the company's equity which is not the result of a transaction with the owners.

	Revenue
(minus)	Cost of sales
(equals)	Gross profit
(minus)	Overheads/expenses
(equals)	Profit from operations (Operating profit)
(minus)	Interest
(equals)	Profit before tax
(minus)	Tax @ 20%
(equals)	Profit for the year
(minus)	Dividends to shareholders
(equals)	Retained earnings

Usefulness & limitations of the income statement

USEFULNESS:	LIMITATIONS:
Evaluating past performance	Companies omit items that cannot be measured reliably (e.g. brand value)
Predicting future performance	Income numbers affected by the accounting methods used (e.g. depreciation)
Helps to assess the uncertainty of achieving future cash flows	Income measurement involves judgement

Statement of changes in equity

Shows changes in equity due to capital contributions

Gill SpA Statement of Changes in Equity For the Year Ended December 31, 2022				
	Total	Retained Earnings	Accumulated Other Comprehensive Income	Share Capital—Ordinary
Beginning balance	€410,000	€ 50,000	€60,000	€300,000
Net income	110,000	110,000		
Dividends	(10,000)	(10,000)		
Other comprehensive income				
Unrealized holding gain on non-trading equity securities, net of tax	30,000		30,000	
Ending balance	€540,000	€150,000	€90,000	€300,000

Statement of financial position/balance sheet

Contents of a balance sheet

Non-Current Assets Cash and other assets that are expected to be converted to cash in more than 1 year.	Current Assets Cash and other assets that are expected to be converted to cash within a year.
Consists of: - Long term Investments - Property, Plant, and Equipment - Intangible Assets	Consists of: - Receivables - Prepaid Expenses - Cash - Inventories - Short-term Investments

Non-Current Liabilities Liabilities that will be paid in more than 1 year	Current Liabilities Liabilities that will be paid within 1 year
Consists of: - Long term loans - Debentures	Consists of: Accounts payable

Equity (Corporations)

- Share Capital: Money received from issuing shares
- Share Premium: Amount received in excess of the face value of shares.
- Retained earnings: Remaining profit after all expenses are deducted and dividends paid

Statement of cash flow

Definition: Provides relevant information about the cash receipts & cash payments of an enterprise during a period.

- Cash Flow from Operating Activities: Transactions that determine net income.
- Cash Flow from Investing Activities: Making & collecting loans and acquiring & disposing of investments and PPE.
- Cash Flow from Financing Activities: Transactions that involve liability and equity items.

Step 9: Closing entries

To close revenue account:

- Debit revenue
- Credit income summary

To close expense account

- Debit income summary
- Credit all expenses

Closing entries: sole proprietorship versus corporation

	Corporation	Sole Proprietorship
Income Summary balance is recorded in:	Retained Earnings	Owner's Capital
Dividends account is recorded in:	Retained Earnings	N/A

Owner's Drawings is recorded in:	N/A	Owner's Capital
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Step 10: Post closing trial balance

Lists only **permanent accounts** (Assets, Liabilities, Owner's Capital). This is because all **temporary accounts** will have zero balances at the end of the accounting period

- Carry closed (temporary) accounts into post-closing trial balance
- Replace retained earnings to this year's retained earnings.

Accounting – IBEB – FA lecture 4

Annual account

Financial statements:

- ▶ Balance sheet
- ▶ Income statement
- ▶ Statement of changes in equity
- ▶ Cash flow statement

Accounting standards

- ▶ Description of profit determination and valuation principles
- ▶ Entity description
- ▶ Going concern

Notes to the financial statements

Annual report

Management report

- + Annual review
- + Strategy
- + Risk management
- + Corporate governance
- Annual accounts
- Audit reports

Business types

- No legal entity: sole proprietorship, partnership
- Legal identity: private limited company, public limited company, cooperation

Proprietorship:

- Contract with sole proprietorship=contract with owner
- Owner=manager
- Unlimited liability
- Entity assumption: Separation of private and business activities

Equity accounts:

- Owners equity
- Capital drawings

Corporation:

- Legal entity
- Separation of ownership and managements
- Ownership shares
- Limited legal liability

Equity accounts:

- Share capital
- Share premium
- Retained earnings

Issue of ordinary shares

- Credit shares premium and share capital
- Debit cash

Cash dividend

Definition: Payment of cash by the company to shareholders on a pro rata basis

3 important dates:

Declaration date

- Company declares when and how much dividend will be paid

- Company has an obligation

Record date

- Shareholders who own shares on the record date are entitled to receiving the dividend

Payment date

- Company pays the dividend to shareholders who had shares on the record date
- Cash decreases in value

Debtholder's interest

Accrual accounting protects the interests of debtholders better than cash accounting. However:

- The objective of accrual accounting is not to guarantee that the company always has sufficient cash to pay debt holders
- Cash management is the responsibility of the company's management

Accounting – IBEB – FA lecture 5

Share issues

Journalizing the issuance of shares

Dr. Cash/Service/non-cash Asset	XXX
Cr. Share Capital – Ordinary	XXX
*Cr. (Share Premium – Ordinary)	XXX

* Cr. (Share Premium – Ordinary) is only recorded if shares are sold above par-value.

Why do companies issue shares?

- Pay of debt
- Buy services

- Purchase land and building

What comprises the equity capital of corporations?

1. Share Capital
2. Share Premium
3. Treasury Shares
4. Retained Earnings
5. Other Reserves

Debt capital

Long term loan

Definition: A written promise to pay a certain amount to third parties at request or at a specific point in time at least 1 year from now

Short term loan

Definition: A written promise to pay a certain amount to third parties at request or at a specific point in time within 1 year from now

Zero interest bearing note

Definition: A loan with no explicit interest rate

Example: Company borrows 7,500 cash from the bank last June 5 and must pay 7,800 on August 5.

June 5

Dr. Cash	7,500
Cr. Notes Payable	7,500

August 5

Dr. Notes Payable	7,500
Dr. Interest Expense	300
Cr. Cash	7,800

Purchase inventory on credit

Purchase discounts

Possible Purchase Discounts		
2/10, n/30	1/10 EOM	n/10 EOM
2% paid within 10 days net amount due within 30 days.	1% discount (if paid within first 10 days of the next month).	net amount due within the first 10 days of the next month.

There are two methods in recording purchase discounts. These are as the following:

Gross Method	Net Method
When using the gross method, sales are recorded at the full invoice amount, without <u>taking into account</u> any discounts.	Under the net method, sales are recorded at the value that is obtained after subtracting the cash discount from the invoice amount.
An additional account is added only if the customer indeed avails of the sales discount	An additional account is added only if the customer does not avail of the sales discount
"Sales discount" may be debited	"Sales discount Forfeited" account may be credited

Financial analysis

Liquidity

$$\text{current ratio} = \frac{\text{kortlopende activa (current assets)}}{\text{kortlopende verplichtingen (current liabilities)}}$$

Solvability

$$\text{debt to assets ratio} = \frac{\text{total liabilities}}{\text{total assets}}$$

$$\text{times interest earned} = \frac{\text{earnings before interest and taxes (EBIT)}}{\text{interest expense}}$$

Accounting – IBEB – FA lecture 6

Valuation of inventories

What are inventories? Inventories are assets. They are items held for sale in the ordinary course of business, or goods to be used in the production of goods to be sold.

There are two types of companies considered, **merchandising** and **manufacturing** companies. Between these two types there is different classification of inventory:

Merchandising Company	Manufacturing Company
In a merchandising company, there is one classification, namely the one inventory account that consists of the purchased merchandise in a form ready for sale. They are owned by the company and ready for sale to the consumers.	A manufacturing company, there are three classifications. They are: 1. Raw Materials 2. Work in progress 3. Finished Goods

MERCHANDISING COMPANY

Cost of goods purchased → Cost of Goods Sold

MANUFACTURING COMPANY

Raw materials: Dr. Actual materials cost | Cr. Materials Used

Labour: Dr. Actual labour cost | Cr. Labour Applied

Overhead: Dr. Actual overhead cost, | Cr. Overhead Applied

Then all of the above balances are debited in Work in Process

Credit Cost of goods manufactured, then debit the Work in Process balance to Finished Goods, giving the cost of goods sold.

Inventory classifications & systems

Irrelevant of the type of inventory, a company must determine inventory quantities at the end of the financial period.

There are two ways that companies keep track of the inventory:

The perpetual system

- When companies use the perpetual system, they take a physical inventory to check accuracy and determine the amount of inventory lost due to wasted materials or the likes.
- In a perpetual system, a company updates the inventory balances at the end of the reporting period (which can be month, quarter, or year)

The periodic system

- When using a periodic system, a physical inventory provides information regarding the inventory on hand and helps to determine the cost of goods sold for that period.
- In a periodic system, a company updates the inventory account balance on an ongoing basis, which is at the time of every sale.
- Don't forget that freight-in is debited to inventory, while purchases returns, allowances, and discounts are credited to it.

Determining ownership

In order to get an accurate count of inventory, a company must possess **legal title**. We recognize 3 main types of ownership of inventory:

1. Goods in transit

- There are generally two types, either ownership of the goods passes to the buyer at the shipping point or at the destination. They are included in the inventory of the company that has legal title to goods.

2. Consigned goods

- These are goods held by the company that other people own, and resell them against a fee (for example auction houses). In this case, the company would not take ownership of the good, which would ultimately not appear in the inventory.

3. Special Sales Agreements

- Sales with repurchase agreements. The seller should report inventory & related liability on its book as the seller has retained the control of the assets.
- Sales with rights of return. Record sales revenue at the amount it expects to receive from the transaction. Establish an estimated inventory return account to recognise that some of the sales will be returned.

Evaluating inventory at a cost-basis approach

The inventory is always accounted for at cost. This includes all the costs necessary to acquire the goods and transfer them into a state that is ready to be sold to the consumer.

Before proceeding, we must highlight two aspects. **Cost flow assumptions** (cost flow methods) do not need to be consistent with the physical movement of goods. Furthermore, we assume that companies use a periodic system (it is rare to use a perpetual system with any cost flow assumptions).

Cash flow methods/inventory cost flow methods

1. First-in first out (FIFO): Products are used in the order in which they are purchased, the first-in, first-out principle is followed.

- In this case the costs of the earliest units purchased by the company are the first to be recognized when determining the cost of goods sold.

2. Last in first out (LIFO): The costs of the last units are the first to be recognized as the cost of goods sold.

3. Average-cost: Allocates the cost of goods sold by the weighted average of cost of goods available for sale in that specific period.

* The average cost is calculated by taking the average cost of all similar commodities available during the period in question. Weighted average cost and moving average cost are the two forms of average costs that can be calculated.

The financial effects of cost flow assumptions

There are 3 main factors why companies choose different cost flow methods:

1. Income statement effects

2. Balance sheet effects: When a company uses **FIFO** during a period of inflation, ending inventory costs will be approximately the same as their current cost. Under **LIFO**, ending inventory will be significantly understated.
3. Tax effects: Some companies use **LIFO** as income taxes are lower, resulting from lower net income.

Effects of inventory errors

Income statement effects

The argued errors can be found in the table below:

Error	Cost of Goods Sold	Net Income
UNDERSTATED BEGINNING INVENTORY	Understated	Overstated
OVERSTATED BEGINNING INVENTORY	Overstated	Understated
UNDERSTATED ENDING INVENTORY	Overstated	Understated
OVERSTATED ENDING INVENTORY	Understated	Overstated

Balance sheet effects

Effects of inventory errors are determined by using the basic accounting equation.

Table below summarises these effects:

Error (Ending Inventory)	Assets	Liabilities	Owner's Equity
Overstated	Overstated	No effect	Overstated
Understated	Understated	No effect	Understated

Accounting – IBEB – FA lecture 7

Inventory analysis

Accounting for inventories

As mentioned in the first chapter, two most commonly used accounting standards are **IFRS** and **U.S.GAAP**. Both use **lower-of-cost-or-market rule**. This means that inventory is written down when historical cost exceeds net realizable value. The main difference between these two standards is that **LIFO** is allowed under U.S.GAAP and not under IFRS.

Companies usually use an allowance account called “**Allowance to Reduce Inventory to NRV**” for NRV adjustments (instead of crediting inventory).

What is NRV?

The net realisable value (NRV): The amount of money that a firm anticipates to earn from the sale or disposal of that item after subtracting any related costs and expenses. NRV is a method of assessing the value of inventories and accounts receivable at the conclusion of the fiscal year. The net realisable value is recorded on the balance sheet at the conclusion of a period, and the income loss is reported on the income statement at the end of the period.

NRV = Estimated selling price in the normal course of business

- **estimated costs to complete**
- **estimated costs to make a sale**

Lower-cost-or-net-realizable value (LCNRV)

The company should value its inventory at its historical cost or NRV, whichever one is lower

Methods of applying LCNRV

- Companies normally price inventory item-by-item

- ## Journal entries when recording NRV instead of cost

COGS method	Loss method
Dr. COGS XXX Cr. Inventory XXX	Dr. Loss Due to Decline to NRV XXX Cr. Inventory XXX
Dr. COGS XXX Cr. Allowance to Reduce Inventory to NRV XXX	Dr. Loss Due to Decline to NRV XXX Cr. Allowance to Reduce Inventory to NRV XXX

The average amount of times an inventory is sold per accounting period.

$$\frac{\text{Inventory Turnover}}{\text{Cost of Goods Sold}} = \frac{\text{Average Inventory (is } 0.5 * (\text{begin inventory} + \text{end inventory}))}{\text{Cost of Goods Sold}}$$

The days in inventory gives an impression of how many days on average the company holds the inventory.

$$\text{Average Days in Inventory} = \frac{\text{Days in Accounting Period}}{\text{Inventory Turnover}}$$
$$\text{Inventory lead time} = \frac{365}{\text{Inventory Turnover}}$$

Depreciation

Depreciation is the historical cost minus LCNRV.

Accounting – IBEB – FA lecture 8

Sale discounts

Gross vs net method

<u>Gross Method</u>			<u>Net Method</u>		
Sales of €10,000, terms 2/10, n/30					
Accounts Receivable	10,000		Accounts Receivable	9,800	
Sales Revenue		10,000	Sales Revenue		9,800
Payment on €4,000 of sales received within discount period					
Cash	3,920		Cash	3,920	
Sales Discounts	80		Accounts Receivable		3,920
Accounts Receivable		4,000			
Payment on €6,000 of sales received after discount period					
Cash	6,000		Cash	6,000	
Accounts Receivable		6,000	Accounts Receivable		5,880
			Sales Discounts Forfeited		120

Cash and receivables

Types of receivables

Receivables – amounts due from individuals/companies that are expected to be collected in cash.

1. Accounts Receivable

- Amounts that customers owe on account; Result from the sale of goods/services. These are ORAL promises to pay the company.
 - Expected time to collect: 30–60 days.

2. Notes Receivable

- Written promise for amounts to be received; the promise is evidenced by formal instrument. These are WRITTEN promises to pay the company.
 - Expected time to collect: ≥ 60–90 days.

3. Other Receivables

- Non-trade receivables.
 - e.g. interest receivable, income taxes refundable, advances to employees.

Accounts receivable ratios

Accounts receivable turnover =

$$\frac{\text{Net sales}}{0.5 * (\text{accounts receivable at the beginning of the period} + \text{accounts receivable at the end of the period})}$$

$$\text{Average collection period in days} = \frac{365}{\text{accounts receivable turnover}}$$

Return liabilities/sales returns and allowances account

Customer returns and allowances are recorded in a contra revenue account, which records items returned by a customer and allowances provided to a customer because the vendor sent incorrect or faulty merchandise.

Example - an increase in the return liability account

Dr. Accounts Receivable	XXX
Cr. Sales Revenue	XXX
Cr. Return Liability (or Sales Returns and Allowances)	XXX

Example - a decrease in the return liability account

Dr. Return Liability	XXX
Cr. Accounts Receivable	XXX

Valuing and disposing accounts receivable

Sales on account always carry the risk of some accounts not being collected. There are two methods presented for writing off the uncollectible amounts:

Direct Write-off	Allowance Method
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• Loss is charged to <u>Bad Debt Expense</u>. • Receivables reported at <u>gross value</u>.	• Companies estimate uncollectible accounts receivable. • Receivables reported at <u>cash realisable value</u>.
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Direct write-off method

Under the method of **Direct Write-off**, companies record uncollectible accounts as **Bad Debt Expense**. Bad Debt Expense is often recorded in a different period than the one when revenue was earned, so this account does not match sales revenue. Also, the receivable is stated at **gross value**.

Journal entry:

Dr. Bad Debt Expense	xxx	
Cr. Accounts Receivable		xxx

Allowance method

The second method to write off the uncollectible amounts is the **Allowance Method**. This method estimates uncollectible receivables at the end of each period, and the receivables are recorded at their **cash (net) realisable value** – net amount expected to be received in cash.

Journal entry:

Dr. Bad Debt Expense	xxx	
Cr. Allowance for Doubtful Accounts		xxx

Here, there is a new account called **Allowance for Doubtful Accounts**. It is a contra account to accounts receivable (normal balance = credit).

On the balance sheet, underneath accounts receivable, there will be a row stating 'Less: Allowance for Doubtful Accounts' which will be subtracted from accounts receivable for the period. Companies do not close this account at the end of the fiscal year.

When dealing with uncollectible accounts receivable, these steps should be taken:

1. Estimate uncollectible Accounts Receivable.
2. Debit Bad Debt Expense and credit Allowance for Doubtful Accounts.
3. Writing off – debit the Allowance and credit the Accounts receivable

Journal entry (when the account is written off as uncollectible):

Allowance for Doubtful Accounts	xxx
Accounts Receivable	xxx

Estimating allowance for doubtful accounts

Percentage of sales/fixed method

- Adds a fixed percentage to the total euro amount of sales for the period under consideration.
- Example: Using prior experience, a firm may predict that 5 percent of net sales will be non-collectible in the future. If the total net sales for the period are \$100,000, the firm sets a \$5,000 cushion for dubious accounts while concurrently declaring a \$5,000 charge for bad debt expense on its books.

Ageing method

- All outstanding accounts receivable are divided into groups based on their age, with different percentages applied to each group. The projected uncollectible amount is the sum of all of the group findings taken together. The ageing method classifies customer balances by the length of time they have been unpaid.

Cash & receivables

Reporting Cash:

- *Cash Equivalents* – Short-term, highly liquid investments that are both:
 - o Readily convertible to cash AND.
 - o So near to maturing that they do not involve significant risk to changes in value.
 - o e.g. Government bonds, commercial paper, money market funds.
- *Restricted Cash* – Money that the company has segregated to save for a later purpose.
 - o e.g. for plant expansion, retirement of long term debt.

- **Bank overdrafts** – When a company writes a cheque for more than the amount in its cash account.
 - o Generally reported as a *current liability*.
 - o Included as a component of cash if the overdraft(s) are repayable on demand and are an integral part of the company's cash management (e.g. the common practice of establishing offsetting arrangements against other accounts at the same bank).
 - o e.g. for plant expansion, retirement of long term debt.

Recognizing accounts receivable

When do different types of companies record receivables?

1. **Service company** – when it performs service on account.
2. **Merchandise company** – at the point of sale of merchandise on account.

In this case, the journal entry should be:

Account Receivable		xxx
Sales Revenue	xxx	

3. **Measurement of Transaction Price** – the company uses the amount they expect to receive from the customer. Adjustments may be needed should the buyer return the goods, have received a sales discount or if the seller estimates that some accounts may be uncollectible.

Disposing of accounts receivable

Why do companies sell receivables?

1. They may be the only source of cash at that point.
2. It is time-consuming and costly to collect and bill receivables.

For example, a company might sell its receivables to a bank, which then collects directly from the consumer. This is often realisable with an additional fee (commission) of 1-3% of the receivables, paid directly by the company. The bank or the finance company that buys receivables from businesses and collects payments from consumers is called a **factor**.

Accounting – IBEB – FA lecture 9

Accounting at the acquisition and disposition of PP&E

Plant assets is a resource that belongs to a company and that has 3 main characteristics:

1. it has a physical substance (definite size and shape);
2. is not intended for sale;
3. is used in the operations of the business.

Plant assets are often listed as **Property, Plant and Equipment**, which are considered to be **Fixed Assets**. The cost of plant assets is determined by using the **Historical Cost Principle** (plant assets are recorded at their original cost).

At the time of purchase, companies always use historical cost to value PPE. However, the value of PPE may change in the subsequent periods after acquisition.

Land

All the costs involved in buying the land and preparing it for use. In this case, the company debits (increases) the **Land Account**.

The costs of land typically include:

- cash purchase price;
- closing costs (e.g. attorney fees);
- real estate brokers' commissions;
- accrued property taxes and other legal claims against the property;
- clearing of the vacant land.

Land improvements

Structural additions are made to the land with limited lives. As a result, the company is responsible for maintaining and replacing them. Therefore, the **cost of land improvements** are depreciated over their useful time. They are not included in the land expense of PPE, and are recorded as Land Improvements.

Some examples of land improvement costs:

- private driveways;
- parking lots;
- walks & fences
- landscaping;
- underground sprinklers.

Buildings

It includes all costs that are directly related to purchase or construction. In this case, the company debits (increases) the **Buildings Account**.

Purchase costs: purchase price, closing costs, broker's commissions, remodelling, wiring, plumbing

Construction costs: contract price, architects' fees, building permits, excavation cost, materials, labour, & overhead costs during construction

*If a company chooses to abolish a building and build a new building themselves, the scraps of the torn-down building may still have value. If the company chooses to sell it for salvage value, the salvage value will be deducted from the price of the building or land.

Equipment

Equipment includes all the costs of purchasing and setting up the equipment for use. The costs of equipment typically include:

- cash purchase price;
- sales taxes;
- freight charges;
- insurance (only during the transit of the equipment to the company);
- expenditures required in assembling/installing/testing the unit.

Important note: **prepaid insurance** and **licence fee** would not be considered as an equipment cost. They are treated as expenses as they are incurred.

Accounting during the use of tangible fixed assets

Depreciation

Depreciation: Process of allocating the cost of a plant asset over its useful life.

- Depreciating is about allocating the cost - not revaluing the asset. Recall that the asset value is determined by the **historical cost principle**.

Factors in computing depreciation

1. **Depreciable Base for the Asset:**

The depreciable base for an asset can be computed by subtracting its residual/salvage value from its original cost (original cost – residual/salvage value).

2. **Estimation of Service Lives:** Service life does not always mean the physical life of the asset. Assets can be retired for reasons such as economic factors (inadequacy, suppression, and obsolescence) and physical factors (causality/ expiration of physical life)

3. **Methods of Depreciation:** there are several methods of depreciation, which include the: Activity method (units of use), straight-line method, and diminishing/accelerated – charge methods.

Cost

All expenditures needed to acquire the asset and make it ready for its use

Useful life

Estimate of the expected life based on repair, service life etc.

Residual (salvage) value

Estimate of the asset's value at the end of its useful life

Depreciation methods

The Straight-Line Method

In this case the depreciation expense is the same every fiscal year. To compute depreciation expense, companies need to determine **depreciable cost**.

$\frac{\text{Cost} - \text{Residual Value}}{\text{Estimated Service Life}} = \text{Depreciation Charge}$
$\frac{\$500,000 - \$50,000}{5} = \$90,000$

Journal entry:

Dr. Depreciation Expense	xxx	
Cr. Accumulated Depreciation		xxx

The Units of Activity Method

$\frac{(\text{Cost} - \text{Residual Value}) \times \text{Hours This Year}}{\text{Total Estimated Hours}} = \text{Depreciation Charge}$
$\frac{(\$500,000 - \$50,000) \times 4,000}{30,000} = \$60,000$

Sum of the year's digit method

This method results in a decreasing depreciation charge based on a decreasing fraction of depreciable cost (original cost less residual value)

Example:

Year	Depreciable Base	Remaining Life in Years	Depreciation Fraction	Depreciation Expense	Book Value, End of Year
1	\$450,000	5	$\frac{5}{15}$	\$150,000	\$350,000
2	450,000	4	$\frac{4}{15}$	120,000	230,000
3	450,000	3	$\frac{3}{15}$	90,000	140,000
4	450,000	2	$\frac{2}{15}$	60,000	80,000
5	450,000	1	$\frac{1}{15}$	30,000	50,000 ^a
		15	$\frac{15}{15}$	\$450,000	

^aResidual value.

The Declining Balance Method

This method produces a decreasing annual depreciation expense over the asset's useful life. It is based on a declining book value (**Cost-Accumulated Depreciation**) of the asset. As such, the depreciation rate remains, yet the book value decreases per year.

Keep in mind that the rate is applied to the book value, meaning that this method ignores residual value.

During this course, **Double-Declining Balance** is most commonly used. In this case, the depreciation rate is twice the straight-line rate.

The **Annual Depreciation Expense** is calculated as:

$$\text{Book Value at the Beginning of the Year} \times \text{Declining Balance Rate}$$

When an asset has multiple components depreciating at different rates, IFRS requires that each part is depreciated individually, then summed for the whole asset.

If an asset's depreciation begins during a financial period, the company should determine the depreciation expense for a full year, then prorate this depreciation expense between the periods involved. This process should be used throughout the asset's life (so the company should not switch between methods).

Example

Year	Book Value of Asset First of Year	Rate on Declining Balance ^a	Depreciation Expense	Balance Accumulated Depreciation	Book Value, End of Year
1	\$500,000	40%	\$200,000	\$200,000	\$300,000
2	300,000	40%	120,000	320,000	180,000
3	180,000	40%	72,000	392,000	108,000
4	108,000	40%	43,200	435,200	64,800
5	64,800	40%	14,800 ^b	450,000	50,000

^aBased on twice the straight-line rate of 20% ($\$90,000 \div \$450,000 = .20$; $.20 \times 2 = .40$, or 40%).

^bLimited to \$14,800 because book value should not be less than residual value.

Accounting – IBEB – FA lecture 10

Depreciation:

- ▶ Allocation of depreciation expense over the periods of use is determined upon purchase of the asset
- ▶ Mechanical
- ▶ Not related to the market value (i.e., fair value) of the asset

The recoverable amount of a tangible fixed asset is equal to the higher of:

- ▶ Fair value less cost to sell
- ▶ Value in use (indirect realizable value)

A tangible fixed asset is valued at the lower of:

- ▶ Carrying amount
- ▶ Recoverable amount

Issues relating to depreciation

1. Components Depreciation: According to International Financial Reporting Standards, any component of a piece of property, plant, or equipment that

contributes significantly to the overall cost of the asset must be depreciated separately.

2. Revision of depreciation rates: situation wherein company adjusts the useful life and residual value of an asset.
3. Partial Periods: Companies calculate the depreciation expenditure for the entire year and then prorate this depreciation expense between the two time periods included in the calculation. This procedure must be carried out for the duration of the asset's useful life.

Component depreciation

Example

Components	Component Amount	Component Useful Life
Airframe	€60,000,000	20 years
Engine components	32,000,000	8 years
Other components	8,000,000	5 years

Components	Component Amount	÷	Useful Life	=	Component Depreciation
Airframe	€ 60,000,000		20		€3,000,000
Engine components	32,000,000		8		4,000,000
Other components	8,000,000		5		1,600,000
Total	<u>€100,000,000</u>				<u>€8,600,000</u>

Depreciation Expense	8,600,000	
Accumulated Depreciation—Equipment		8,600,000

Depreciation of partial periods

Example: Calculation of Partial-Period Depreciation using sum of the year's digits and the double declining balance methods

	Sum-of-the-Years'-Digits	Double-Declining-Balance
1st full year	$(\frac{5}{15} \times £10,000) = £3,333.33$	$(.40 \times £10,000) = £4,000$
2nd full year	$(\frac{4}{15} \times 10,000) = 2,666.67$	$(.40 \times 6,000) = 2,400$
3rd full year	$(\frac{3}{15} \times 10,000) = 2,000.00$	$(.40 \times 3,600) = 1,440$
Depreciation from July 1, 2022, to December 31, 2022		
	$\frac{6}{12} \times £3,333.33 = \underline{\underline{£1,666.67}}$	$\frac{6}{12} \times £4,000 = \underline{\underline{£2,000}}$
Depreciation for 2023		
	$\frac{6}{12} \times £3,333.33 = £1,666.67$	$\frac{6}{12} \times £4,000 = £2,000$
	$\frac{6}{12} \times 2,666.67 = \underline{1,333.33}$	$\frac{6}{12} \times 2,400 = \underline{1,200}$
	<u><u>£3,000.00</u></u>	<u><u>£3,200</u></u>
		or $(£10,000 - £2,000) \times .40 = \underline{\underline{£3,200}}$
Depreciation for 2024		
	$\frac{6}{12} \times £2,666.67 = £1,333.33$	$\frac{6}{12} \times £2,400 = £1,200$
	$\frac{6}{12} \times 2,000.00 = \underline{1,000.00}$	$\frac{6}{12} \times 1,440 = \underline{720}$
	<u><u>£2,333.33</u></u>	<u><u>£1,920</u></u>
		or $(£10,000 - £5,200) \times 0.40 = \underline{\underline{£1,920}}$

Expenditures relating to PPE

1. Capitalise
 1. Additions: An increase or extension of already existing assets.
 2. Improvements and Replacements: substitution of a superior or comparable asset for an existing asset
2. Expense
 1. Rearrangement and Reorganisation: when assets are moved from one area to another.
3. Expense or Capitalise
 1. Repairs: Spending money to keep assets in good working order so that they may be used for their intended purpose.

Increases in the usable life of the product, the quantity of product produced, and the quality of the product produced would be evidence of future economic gain/benefits.

Impairments

Impairment: An impairment is when a company can't recover an asset's carrying value through use or sale.

- Carrying amount > recoverable amount: Record an impairment loss of the difference.

Journal entry

Dr. Loss on impairment XXX

Cr. Accumulated depreciation XXX

To reverse a mistaken or recovered impairment loss: Debit accumulated depreciation and credit recovery of impairment loss, the latter of which is capped at the amount of the original impairment loss.

Dr. Accumulated Depreciation XXX

Cr. Recovery of impairment loss XXX

Accounting – IBEB – MA lecture 1

What is managerial accounting?

Managerial accounting: provides financial and un-financial information to managers and other internal users to help them in their decision-making process. It collects relevant information for managers to make better decisions related to production plan and budgeting. This information helps them achieve the objectives of the company.

Management accounting consists of:

- **Planning:** Identifying the organisation's objective
- **Directing:** Implement objectives and coordinate & provide incentives
- **Controlling:** Keep company's activities on track

Financial vs managerial accounting reports

FINANCIAL ACCOUNTING		MANAGERIAL ACCOUNTING
External users (shareholders, creditors, regulators).	Primary users	Internal users (officers, managers).

Financial statements; quarterly, annually.	Types & frequency	Internal reports; as frequently as needed.
General purpose.	Purpose	Specific purpose for specific decisions.
Highly condensed and limited due to accounting standards; pertains to the whole business.	Content	Very detailed as standards are relative to management's decisions; pertains to business' subunits.
Audited by accountants.	Verification process	No independent audits.
Mandatory reports that need to follow the GAAP (Generally Accepted Accounting Principles.)	Legal Requirement	Reports that are not required nor need to adhere to the GAAP guidelines.
Focuses only on past events	Time Dimension	Focuses on both past and future information

KEY DIFFERENCE between MA & FA Accounting: users of FA reports are external from the organisation, while users of MA reports are internal managers, personnel, etc.

Planning and control process of MA

STEPS 1-4: PLANNING PROCESS

1. Identify Objectives
2. Begin the search for alternative courses of action
 1. This can be done by finding different possible ways to achieve the goal
3. Selecting among the courses of action
 1. In this step, we use information to select which option is best
4. Implement the Decision

STEP 5-6: CONTROL PROCESS

5. Compare actual and planned outcomes
 1. Check whether performance is consistent with what the management team expected and whether the goal has been achieved.

6. Respond to divergences in plan.

1. If there are deviations between result and expectation, firms must respond to divergences from their plan.

Cost concepts

Cost classification: cost behaviour

A COST is a resource sacrificed/used for a specific purpose.

Important: COST $\neq$ EXPENDITURE

Cost object = any activity for which costs are measured separately

The COST COLLECTION SYSTEM is the process and methods a company uses to collect costs at a detailed level. It determines the costs in 2 phases:

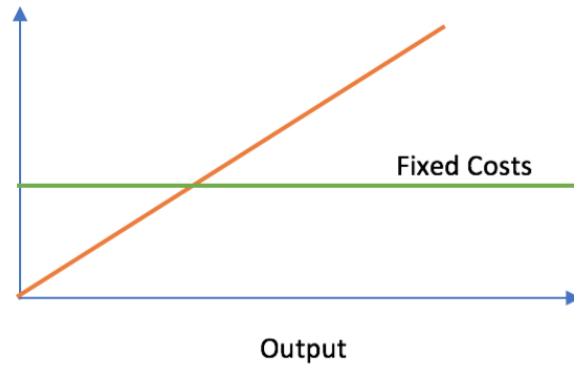
- Categorize costs based on:
 - 1) Function
 - 2) Traceability
 - 3) Behavior
 - 4) Relevance
- Allocate costs to cost objects

1. Variable Costs

- o Costs that increase proportionately with the volume of output (e.g. raw materials)
- o Unit costs for variable costs may be constant

2. Fixed Costs

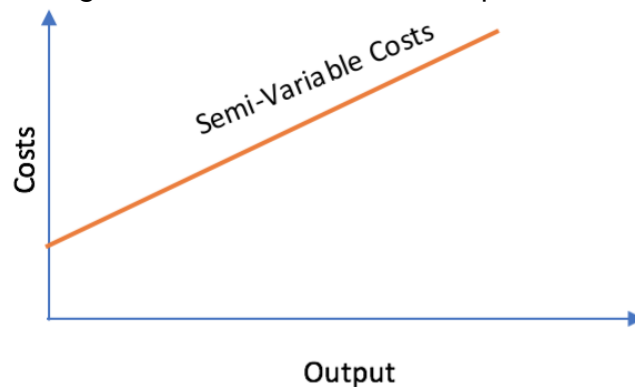
- Costs that do not vary with the level of output or activity (eg. Factory rent)
 - o In the long run, fixed costs may turn into variable costs
- Unit costs for fixed costs may decrease with an increase of volume



(this graph should have the red line labelled variable costs and the y-axis as costs).

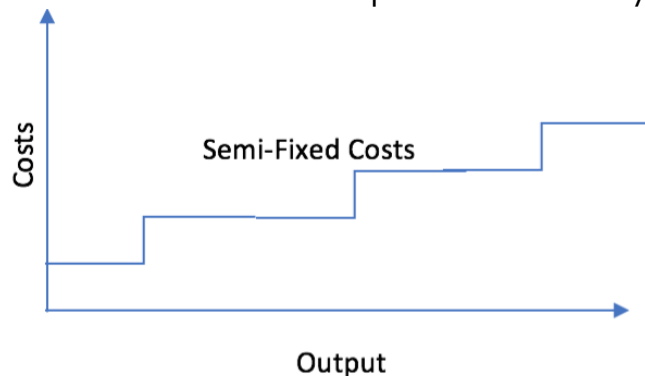
3. Semi-Variable Costs

Costs that have a fixed element and a variable component e.g. labour salary that includes a fixed wage and a variable bonus dependent on output.



4. Semi-fixed Costs

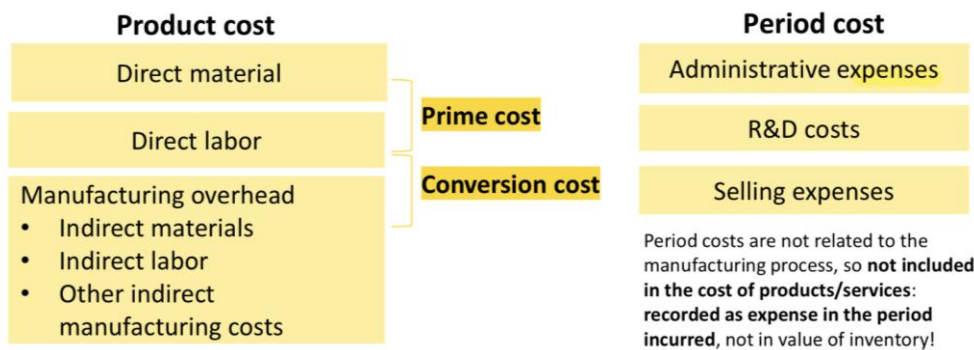
Costs that are fixed up until a point where there is a step increase beyond a specified range, e.g. when new machines are required once activity reaches a certain point.



Cost classification: traceability

	Direct Costs	Indirect Costs
What are they?	Costs that are incurred for one specific cost object	Costs that cannot be traced to one cost object
Two types	Two types: Direct Material & Direct labour	Two Types: Indirect Material & Indirect labour
Examples	Examples include raw materials, software, and equipment	Examples include tape, oils and lubricants, supervisors, and security guards.

Cost classification: function



Cost classification: relevance

1. Relevant Costs – Relevant costs are future costs/revenues which will be changed by a decision (i.e., Production costs depend on how many of a product the firm decides to produce)
 - Opportunity cost – opportunity costs are benefits sacrificed once a decision is made. It is the next best alternative foregone that is sacrificed when making a decision. Opportunity costs do not need to be monetary.
2. Irrelevant Costs – irrelevant expenses that will be unaffected by any choice. (i.e., The book value of an equipment/machine stays constant whether a firm wants to sell it or not.)
 - Sunk Costs – Costs that have already been incurred and cannot be changed by any decision.

Other cost concepts for decision making

Avoidable & Unavoidable Costs: Avoidable costs are those costs that can be saved by not taking a decision, unavoidable costs cannot be saved (therefore they do not need to be considered in decision making).

Incremental Costs: The difference between the costs of each action.

Accounting – IBEB – MA lecture 2

There are two main types of cost systems:

Job Order Cost System	Process Cost System
Used for custom orders Is for heterogeneous products Low production volume Cost accumulated by jobs	Has repetitive operations Is for homogenous processes High production volume Costs accumulated by process

Cost tracing vs cost allocation

Annual overhead costs / annual activity in allocation base = **overhead rate**

Budgeted overhead rate

Annual **budgeted** overhead costs / annual **budgeted** activity in allocation base =
Budgeted overhead rate

Blanket vs departmental rates

Blanket (plant-wide) overhead rate: Uses one single overhead to allocate all MOH (manufacturing overhead) to the individual product

Departmental overhead rate: Uses one single overhead rate for each production department

Under and over recovery of overheads

Over recovery: Allocated MOH > actual MOH

Remaining balance: debit

Under recovery: Allocated MOH < actual MOH

Remaining balance: credit.

Accounting – IBEB – MA lecture 3

Job order costing

Job order costing: use for when each unit or batch of output is unique. The objective of job order costing is to calculate the cost per job.

Job cost sheet

Assign direct material cost

These are assigned when the material storage rooms issue the material upon request. Request for issuing raw materials is made on a **materials requisition form**. The slip should indicate the quantity and type of materials withdrawn, as well as the account to be charged.

Assign direct labour cost

Companies assign labour costs on the basis of **labour time tickets**. These indicate the employee, hours worked, the account and job to be charged, and the total labour cost.

Assign manufacturing overhead cost

Manufacturing overhead relates to product operations **as a whole**. Therefore, these costs cannot be assigned to specific jobs on the basis of actual costs incurred. How do companies assign overheads then? They are assigned on an **estimated basis** through the use of a **budgeted overhead rate (BOH)** (sometimes called predetermined OH rate).

$$\text{Budgeted overhead rate} = \frac{\text{Estimated Annual Overhead Costs}}{\text{Estimated annual activity in allocation base}}$$

The **Estimated Annual Overhead Costs** and the **Estimated annual activity in allocation base** are expressed in terms of a common **allocation base** (e.g. direct labour costs)

Step 1: Accumulate direct material

Purchase of materials (direct and indirect!), usually upfront

Account	Debit	Credit
Stores ledger control	2,000	
Creditors control		2,000

ErgoOffice bought 16 units RVS worth €2,000 on July 25.

Account	Debit	Credit
Stores ledger control	3,040	
Creditors control		3,040

ErgoOffice bought 20 units RVS worth €3,040 on July 29.

Step 2: Accumulate direct labor

Use of direct labor

Account	Debit	Credit
WIP Inventory	170	
Wages		170

Step 3: Allocate and record MOH

Use of indirect materials (when materials are needed for a specific job): materials requisition

Account	Debit	Credit
Factory overhead	50	
Stores ledger control		50

Use of indirect labor

Account	Debit	Credit
Factory overhead	70	
Wages		70



For indirect costs, we cannot debit WIP Inventory directly as costs are not traced to a specific job.

Step 4 and 5: Transfer to finished good + sale

When job is done:

Account	Debit	Credit
Finished goods	1,275	
WIP inventory		1,275

When sold to customer:

Account	Debit	Credit
COGS	1,275	
Finished goods		1,275

Account	Debit	Credit
Debtors control	1,800	
Sales revenue		1,800

Step 6: Closing factory overhead

Account	Debit	Credit
Factory overhead	270	
Store ledgers control		50
Wages		70
Accum. depreciation		50
Utilities		100

Accounting – IBEB – MA lecture 4 and 5

Process costing

In process costing, we create accounts for each process, whereas in job costing, we create accounts for each job.

In process costing, the output of the previous process becomes the input of the next process. Process costing aims to calculate the average cost per unit for each process.

It tells us how the cost is accumulated by each process and how we can get to the final costs per unit once all processes are finished.

Equivalent units

Equivalent units solve the problem of calculating unit costs when not all products are completed units. It expresses partially completed units as a smaller number of fully completed units. Thus, keeping equivalent units in mind, we can use the following formula:

$$\text{Average unit cost} = \frac{\text{Total cost}}{\text{Units}}$$

Example: In August, the total cost of production was €50,000, with 4,500 completed units and 1,000 work-in-progress units at a 20% completion rate. What is the average cost per unit of the product in August?

$$\begin{aligned}\text{Total Cost: } & 50,0000 \\ \text{Equivalent units: } & 4,500 + 1,000(20\%) = 4700 \\ \text{Unit cost} & = 50,000/4,700 = \text{€}10.6/\text{unit}\end{aligned}$$

The average cost per unit of the product in August is €10.6/ unit.

Stock and flow equation

$$\begin{aligned}(\text{Stock}) \text{ Beginning work in progress} &+ (\text{Flow}) \text{ Production costs incurred} \\ &= (\text{Flow}) \text{ Production costs finished goods} + \text{Ending Work in Progress}\end{aligned}$$

*The total cost of production of finished and incomplete products is the sum of the beginning Work in Progress (WIP) and the production costs incurred during the period.

Beginning work in progress

This step helps the managers see productivity in terms of equivalent units of production, which can be measured in 2 ways:

Weighted-Average Method

Using this method, we calculate how many standard units we would produce with the existing amount of resources, if we only made complete products.

$$\begin{aligned} & \text{Units Completed \& Transferred Out} + \text{Equivalent units of Ending WIP} \\ & \qquad \qquad \qquad = \text{Equivalent units of production} \end{aligned}$$

Weighted cost (WA) = (cost inventory begin + cost current period) / Total equivalent units

Unit production costs

These are costs expressed in terms of equivalent units of production, which is calculated in step 2.

$$\frac{\text{Total Cost}}{\text{Equivalent Units}} = \text{Unit Production Cost}$$

When equivalent units of production are different for materials and conversion costs, we compute 3 unit costs: **materials**, **conversion**, and **total manufacturing**.

The Materials Cost

$$\frac{\text{Total Material Cost}}{\text{Equivalent Units of Materials}} = \text{Unit Material Cost}$$

The Conversion Cost

$$\frac{\text{Total Conversion Costs}}{\text{Equivalent Units of Conversion Costs}} = \text{Unit Conversion Cost}$$

The Total Manufacturing Cost

$$\text{Unit Material Cost} + \text{Unit Conversion Cost} = \text{Total Manufacturing Cost per Unit}$$

FIFO method

Opening WIP are the first to be produced and completed during the current period. The cost computation of opening WIP and current period production are separated. The computation ignores work for opening WIP done in the last period.

$$\frac{\text{Current Cost}}{\text{Equivalent Units}} = \text{Cost per Unit}$$

This method is used when average cost changes significantly over time.

Inventory flow comparison: Opening stock inflow = ending stock outflow

Opening stock of work-in-process

5 steps to follow:

1. Determine the flow of physical units

Beginning WIP inventory + started units = completed units + ending WIP inventory

2. Calculate the output in equivalent units

Weighted average: output = completed units + ending inventory WIP

3. Determine the costs to be allocated

4. Calculate the cost per equivalent unit = total product cost / # EE

5. Allocate the costs to the completed units and to the ending inventory of work-in-process.

Accounting – IBEB – MA lecture 6

Joint products and by-products arise in situations where the production of one product makes inevitable the production of other products.

In the production of the joint and by-products, the products are not identifiable as different products until a specific point in the production process is reached. This point is called the **split-off point**.

- **Joint products:** when products are produced simultaneously with each significant value
- **By-products:** when products result incidentally and have a minor sales value

Normal losses are inevitable:

- average cost/unit = total productcost / normal output
- normal output takes into account normal losses, so they are the “good” produced units.

Abnormal losses/benefits are unexpected, so we do not take this into account in our calculations.

Scrap value: Residual value of materials or products that are no longer usable for their intended purpose, but can still be sold or reused in some other way.

- Average cost/unit = (total productcost - scrap value normal losses) / normal output

Methods of allocating joint costs

Physical measures method

The joint costs are allocated **in proportion to product volume**. Each product is assumed to receive similar benefits from the joint cost and is therefore charged with its proportionate share of the total cost.

This method assumes that the cost per unit is the same for each of the products. It also ignores the sales generating power of each product.

Joint cost of X = (physical output X / total physical output) * total joint cost

Sales value at split-off point method

The joint costs are allocated to joint products in proportion to the estimated sales value of production. Meaning that the joint cost allocation is **based on the sales-generating power of each product**.

We are allocating a higher proportion of the joint costs to a product with higher sales value and are ensuring that joint costs are allocated based on a product's ability to absorb the joint costs.

The method is based on the assumption that the sales revenue determines prior costs and can give the impression that an unprofitable product with low sales revenue is generating profits

Joint cost of X = (sales value X / total sales value) * total joint cost

Net realisable value method

If the products are not sold at the split-off point, but instead need further processing, we use the Net realisable value method.

NRV = estimated sales value at the point of sales - further processing costs

Joint cost of X = $(\text{NRV}_X / \text{total NRV}) * \text{total joint cost}$

The joint costs are allocated in proportion to each product's NRV at the split-off point.

Constant gross profit percentage method

The constant gross profit percentage method allocates joint costs so that the overall gross profit percentage is identical for each individual product. Meaning that all joint products **earn identical gross profit percentages**.

The joint costs are allocated so that each product has the same gross profit %

Gross profit % = $\frac{\text{total sales} - \text{total costs of all joint products}}{\text{total sales}}$

Joint cost of X = sales value X - (gross profit % * sales value X) - further processing costs X

Evaluation of the different methods

Methods	Advantages	Disadvantages
Physical measurement	Simple to operate where there is a common unit of measurement	Can distort profit reporting and inventory valuation Can be difficult to find a common unit of measurement
Sales value at split-off point	Provides more realistic inventory valuations	Assumes that sales value determines prior costs Assumes that a sales value at split-off point can be determined

Net realisable value	Takes further processing costs into account Simple to apply if there is only one split-off point	Can be difficult to calculate for a complex process with many split-off points
Constant gross profit percentage	Appropriate only if a constant gross profit for each joint product is a logical assumption	Only appropriate if a constant gross profit for each product makes sense

Irrelevance of joint cost allocations for decision making

For the decision, whether you should further process a joint product into another product:

- **The joint costs are irrelevant**, because they are unaffected by the conversion decision
- **The further processing costs are relevant**

The general rule is that it will be profitable to extend the processing of a joint product as long as the additional revenues exceed the additional costs.

Accounting for By-products

By-products have a minor sales value and emerge incidentally from the production of a major product.

The joint costs are only allocated to the joint products and the by-products are not allocated with any portion of the joint costs that are incurred before the split-off point.

Any further costs that are incurred in producing by-products after split-off point are allocated to the by-product, because these costs are incurred for the sole benefit of the by-product.

Joint costs are reduced by the by-product net revenues (NRV) then allocated to the joint products only.

$NRV = \text{sales revenue of the by product} - \text{additional further costs after the split off point}$

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Cost classification based on cost relevance

Are future costs (revenues) changed by a particular decision?

Relevant cost (benefit) – yes

Irrelevant cost (benefit) – no

Sunk costs are costs that have already occurred and cannot be changed by any decision.

Note: These are irrelevant costs because they are the same for all alternatives

Opportunity costs measure the benefits forgotten or sacrificed when a particular action is chosen and an alternative course of action is abandoned.

CVP (cost volume profit) analysis

The CVP Analysis uses cost information to make decisions. It allows a company to study the effects of a change in the cost and/or the volume of production on the company's profits. This analysis is important for profit planning and for management decisions such as setting prices.

Some questions that can be answered by CVP Analysis include:

- What number of units must be sold in order to break even?
- What would be the impact of the selling price and the number of units sold on profit margins?

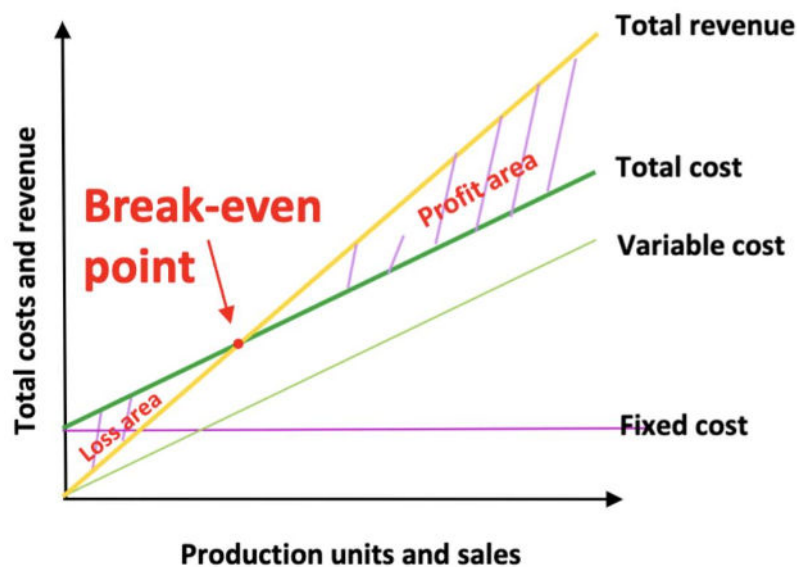
CVP Analysis assumptions:

- the costs can be classified into variable or fixed costs in a relevant range;
- revenues are linear within the relevant range;
- all units produced are sold;
- sales mix remains constant

Break-even point

The point at which total income equals entire costs or expenses is referred to as the **break-even point**. At a break-even point, there is no profit or loss.

- In a break-even point, **total revenue (TR) = total costs (TC)**, so **TR - TC = 0**
- The right side of a break-even point is the **profit area** of a firm. If the firm can sell more than the break-even point, the firm can make profit.
- On the left side of the break-even point is the **loss area** of the firm. If the firm sells less than the break-even point, it incurs a loss.



Calculating the break-even point

Break-even Units = $\frac{\text{Fixed costs}}{\text{Unit price} - \text{Unit variable cost}}$ = $\frac{\text{Fixed costs}}{\text{Contribution (margin) per Unit}}$

Contribution margin

This is the amount of revenue remaining after variable costs have been deducted from the price. There are three formulas we usually use in regard to the contribution margin:

Contribution Margin (in total) = total sales - total variable costs

Contribution Margin per Unit = Unit selling price - Unit variable cost

Contribution Margin Ratio = $\frac{\text{Total CM}}{\text{Total sales}}$ OR $\frac{\text{Unit CM}}{\text{Price per Unit}}$

Break-even analysis

It helps us to find out under what circumstances a company makes a net income of 0, meaning that the company makes no profits nor losses. There are three methods to calculate it:

The mathematical approach

1.

Required sales - Variable costs - Fixed costs = Net income

We know that, at the break-even point, the net income is 0. We also know that fixed costs are the same for every level of output. Therefore, the two variables dependent on the level of output are **required sales** and **variable costs**.

The Contribution Margin technique

2.

At the break-even point, the fixed costs must be equal to the contribution margin. With this method, break-even point can be computed using 2 formulas:

Break even quantity (in units) = $\frac{\text{Fixed Costs}}{\text{Contribution margin per Unit}}$

Break even quantity (in €) = $\frac{\text{Fixed Costs}}{\text{Contribution margin Ratio}}$

The Cost-Volume-Profit (CVP) Graph Method

3.

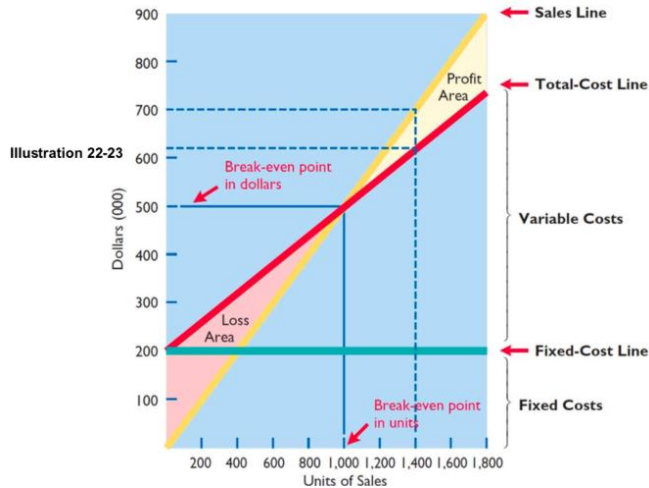


Fig 1. CVP Graph from Accounting Principles – IFRS version (2019)

This graph shows costs, volume and profits. We record the unit of activity on the horizontal axis. Revenues and costs are recorded on the vertical axis. Steps in making the CVP graph are:

1. Plot the **sales line**, starting from 0 activity level.
2. Plot the **total fixed costs** using a horizontal line (as fixed costs are the same for every level of activity).
3. Plot the **total cost line**, which starts from the fixed-cost line at 0 activity level and increases by the variable cost at each level of activity.
4. Determine the **break-even point** from the intersection of the total-cost line and the sales line.

Target profit

Target profit measures **the amount of sales needed** to earn a **specific amount of profit**

Target profit = sales - costs = price per Unit $\times$ Q - Unit Variable Costs $\times$ Q - Fixed Costs
 Units Sold = $\frac{\text{Target profit} + \text{FC}}{\text{Price} - \text{Unit VC}}$

Required Price per Unit = $\frac{\text{Target profit} + \text{FC}}{\text{Units Sold}} + \text{Unit VC}$

In general:

$$\text{Profit} = \text{Price} \times \text{Units sold} - \text{Unit VC} \times \text{Units sold} - \text{FC}$$

Profit Volume Ratio

The profit volume ratio represents the proportion of each euro of sales available to cover fixed costs and provide for profit.

$$\text{PV Ratio} = \frac{\text{Total Contribution Margin}}{\text{Sales}} = \text{Contribution Margin Ratio}$$

$$\text{Profit} = (\text{Sales revenue} \times \text{PV Ratio}) - \text{Fixed Costs}$$

Margin of safety

The margin of safety indicates how much sales can decrease before a loss occurs

$$\text{Margin of safety} = \text{Expected Sales} - \text{Break even sales}$$

$$\text{Margin of Safety \%} = \frac{\text{Expected sales} - \text{BE Sales}}{\text{Expected Sales}}$$

Operating leverage

The operating leverage is a measure of the sensitivity of profits to change in sales. The greater the operating leverage, the more changes in sales will affect profit

$$\text{Degree of OL} = \frac{\text{Contribution margin}}{\text{Profits}}$$

Special pricing decisions

Special pricing decisions typically involve one-time-only orders or orders at a price below the prevailing market price

Make or buy decisions

- Sometimes **outsourcing** (paying another company to make a product) is more profitable than making the product in-house
- Avoidable costs > external costs
- You also have to consider the non-financial factors (e.g. quality, on-time delivery)

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Identifying relevant or incremental costs

Incremental analysis: Shows the difference in profits for each of the alternatives when making a decision

Replacement of PPE

Relevant costs

- Operating costs of each of the alternatives
- Disposal value of both alternatives
- Purchase price of new machine
- Crowdsourcing cost (if there's a difference in operating capacity)

Joint cost and decision making

Step by step guide:

1. Determine joint cost to be allocated to each product
2. Calculate the gross profit of each alternative
3. Calculate incremental cost/revenue/profit

Reference list

Antoons, C. (2023). *MA Lecture 1* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90386559>

Antoons, C. (2023). *MA Lecture 2* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90468025>

Antoons, C.. (2023). *MA LECTURE 3: Process costing* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90592841>

Antoons, C.. (2023). *MA LECTURE 4: Joint and by-product costing* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90580082>

Antoons, C. (2023). *MA Lecture 5* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90616369>

Antoons, C. (2023). *MA Lecture 6* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90660534>

Antoons, C. (2023). *MA Lecture 7* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90679460>

Antoons, C. (2023). *MA Lecture 8* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90723991>

Suijs, J. (2023). *LECTURE 1: Bookkeeping I* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89249372>

Suijs, J. (2023). *FA LECTURE 2* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89313336>

Suijs, J. (2023). *FA LECTURE 3* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89027645>

Suijs, J. (2023). *FA LECTURE 4* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89578351>

Suijs, J. (2023). *FA LECTURE 5* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89637141>

Suijs, J. (2023). *FA LECTURE 6* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89449335>

Suijs, J. (2023). *FA LECTURE 7* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89969181>

Suijs, J. (2023). *FA LECTURE 8* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90075682>

Suijs, J. (2023). *FA LECTURE 9* [Powerpoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/89027665>

Suijs, J. (2023). *FA LECTURE 10* [PowerPoint Slides]. Retrieved from: <https://canvas.eur.nl/courses/44034/files/90342443>